SOCIODEMOGRAPHIC AND BEHAVIOURAL FACTORS AFFECTING KNOWLEDGE AND HIV TESTING AMONG NIGERIAN ATHLETES

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ABSTRACT

Background: HIV/AIDS is a major source of concern all over the world as it constitutes a major source of death and a threat to national development. Despite vigorous promotion, knowledge on HIV/AIDS remains just above average with HIV testing services remaining low especially in youths. Also, the highest prevalence of HIV has been reported among youths, a category into which most athletes fall. This necessitates the need for studies to assess athletes' knowledge on HIV/AIDS and identify factors affecting knowledge and to identify those demographic and behavioural factors which hinder HIV testing among athletes.

Method: The study was a cross sectional study among 320 athletes participating in the 17th edition of the Nigerian National Sports Festival between 29th June and 11th July in Port Harcourt. A two stage sampling method was used to select respondents to whom questionnaires were administered. Univariate analysis was employed to calculate frequencies and distributions of each variable. Knowledge score was calculated, totaled and converted into percentages and classified into three groups. (Poor knowledge – less than 50%; Good knowledge – 50%-69%; Excellent knowledge – 70% and above). T/F tests, linear regression, chi square and logistic regression were used to test the difference in mean scores as well as identify association and factors affecting knowledge of HIV/AIDS and HIV testing among athletes. A p-value < 0.05 was considered to indicate statistical significance.

Results: The mean age of the athletes was 29.1years SD 9.3 years while the mean age at sexual debut was 19.9 SD 3.8 years. The mean knowledge of the athletes was 59.1% SD19.9%. About a quarter of the respondents had poor knowledge (25.9%) followed by those with good knowledge (35.5%) and those with excellent knowledge (38.7%). Factors that affected HIV/AIDS knowledge among athletes include religion (p=0.006), place of residence (0.025) and level of education (0.006). Prevalence of HIV testing was 60.0% with females' athletes having a slightly higher prevalence (60.2%) compared to males (59.9%). After adjusting for other variables, athletes with secondary education and less were about three times less likely to have been tested for HIV than those with tertiary education (OR=0.392, 95%CI=0.201-0.767). Athletes who knew a facility where they could get a HIV/AIDS test were about five times more likely to have had a HIV test

compared to those who did not know where to get a HIV/AIDS test. (OR=4.202, 95%CI=10556-11.349)

Conclusion: The study shows that HIV/AIDS knowledge among athletes is not adequate and is affected by religion, place of residence and level of education. This suggests that athletes' knowledge on HIV/AIDS is mainly influenced by the demographic factors that surround their upbringing. It also identified some factors that prevent HIV testing among athletes. They include having a higher level of education and knowledge of a facility that provides HIV testing services.In view of these findings, strategies should be put in place that incorporate training of athletes in sexual and reproductive health with special regards to HIV/AIDS. Also, HIV testing services should be made readily available to the athletes.

Keywords: HIV testing, Athletes, Nigeria

Word count: 490

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DEDICATION

To my late mother, Mrs Cecilia B. Onuoha, who passed away on 13th July, 2011.

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I wish to thank all those who contributed to the production of this work, in particular Dr. Babatunde O. Adedokun, my supervisor, and Miss M Tolulope, my peer reviewer.

CERTIFICATION

I certify that this work was carried out by Onuoha, Nnamdi Lucky in the Department of Epidemiology, Medical Statistics and Environmental Health, Faculty of Public Health, College of Medicine, University of Ibadan, Nigeria.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF ABBREVIATIONS

AIDS	Acquired immunodeficiency syndrome
aOR	Adjusted Odds Ratio
ARVT	Anti Retro Viral Therapy
CDC	Centre for Disease Control
CI	Confidence Interval
FCT	Federal Capital Territory
FMoH	Federal Ministry of Health
HCT	HIV Counselling and Testing
HIV	Human immunodeficiency virus
HSSS	HIV Sentinel Sero-prevalence Survey, 2008 Nigeria
IBBSS	Integrated Biological and Behavioural Surveillance Survey
MARP	Most At Risk Populations
NARHS	National HIV/AIDS and Reproductive Health Survey
NDHS	Nigerian Demographic and Health Survey
NPP	National HIV/AIDS Prevention Plan
PLWHA	People Living with HIV and AIDS
PMTCT	Prevention of Mother to Child Transmission
SES	SocioEconomic Status
UNAIDS	Joint United Nations Program on HIV/AIDS
UNFPA	United Nations Fund for Population Activities
UNGASS	United Nations General Assembly Special Session
UNICEF	United Nations Children's Funds
UNIFEM	United Nations Development Fund For Women
USAID	United States Agency for International Development
VCT	Voluntary Counseling and Testing
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND:

HIV/AIDS is a major source of concern all over the world as it constitutes a major source of death and a threat to national development. The virus has negative impacts on economic, social and political development of any nation that has a high rate (Alao, 2004). WHO Estimates of 2009, ranks HIV/AIDS as the 6th commonest cause of death worldwide behind Diarrheal diseases, Lung diseases, Influenza/Pneumonia, Stroke and Coronary disease. Certainly, the burden of the disease is so much that relentless global effort and huge resources have been directed to the fight against the pandemic. The statistics is as frightening as the impact is disturbing. For instance, the number of people living with HIV worldwide has continued to surge, reaching an estimated 33.4 million in 2008 and a global estimate of 2.7 million (2.4 million – 3.0 million) new infections and 2 million AIDS-related deaths that occurred in 2008 (NPP, 2010). Even more worrisome is the fact that a greater percentage of the infected/dying people are in sub-Saharan Africa with a total number of the people living with the virus put at 22.4 million (20.8 million to 24.1 million).

In Nigeria, the story is no more comforting, and current estimates of people living with the virus is 3.1 million, with a total AIDS death of 192,000 in 2010 and 2009 respectively according to FMOH. Thus, Nigeria has the second highest number of people living with HIV in the world after South Africa (UNAIDS HIV epidemic update 2010). It is evident from these figures that the past, present and future effort to checkmate further spread of this disease is well worth it especially among youths.

HIV testing which is the process by which an individual undergoes confidential counselling to cope with stress and make informed choices about learning his or her HIV status and to take appropriate action (UNFPA & IPPF, 2004), has been shown to be an effective strategy to facilitate behaviour change for HIV prevention (Namazzi J, 2010). HIV testing originated in

the early 1980's due to high stigma involved in HIV testing procedure and has evolved over time to correct parts of it that discouraged its use among individuals. Despite vigorous promotion, HIV testing has been low overall in sub-Saharan Africa (SSA) (Stefan et al. 2010) with a large majority of HIV-1 infected people in SSA not been aware of their HIV status (World Health Organization, UNAIDS, & UNICEF, 2007).

Nigeria, in her 2010-2015 National Strategic Framework (NSF), appears poised, amidst her many varied preventative strategies, to commence use of sports to intensify anti- HIV/AIDS campaign. When talking about sport and HIV/AIDS, the emphasis is mainly on how to use sport as a tool for creating awareness, improving knowledge and changing attitudes to HIV affected people. For this to be realized, a base line has to be established as to the amount of knowledge possessed by these athletes and the existing factors that affect their HIV testing behavior. This has necessitated the need for studies such as this that assesses knowledge on HIV and shows the relationship between demographic and behavioural factors and HIV testing.

1.2. PROBLEM STATEMENT

The youths of every nation are the leaders of tomorrow. If their survival is threatened by wars, poverty or disease, then the future of that country is bleak. HIV pandemic is the biggest obstacle to the achievement of the development goals agreed to at the UN Millennium Summit in 2000 (Casale and Whiteside, 2006). With the high prevalence of HIV in the general population, and particularly in the youths several different surveys had been conducted nationally and institutionally to forge better ways to contain this disease. The 2006 population census showed young people making up over 50% of the population. This population also represents the group with the highest prevalence of HIV/AIDS in several sero prevalence surveys in Nigeria. The 2008 sentinel survey showed a prevalence of 5.6% among age group 25 – 29 years, 4.6% among age group 20 – 24 and 3.3% among ages 15 – 19 years. Thus, young people are disproportionately infected. (NSC HIV-AIDS Plan,2010) Although the virus may be present in a variety of body fluids, only blood poses any degree of risk of transmission in athletic settings. The key risk factors for heterosexual transmission (the dominant mode of acquiring HIV in Africa) are transactional or paid sex and concurrent

partners. (Cote et al 2004). Athletes may fall into this category because of the nature of their jobs which keeps the away from home for long periods which are spent either in training camps or at competitions. There is no doubt that social interaction within camps and sports arenas may be as characterized as in any other social gathering involving youths who may seek for territorial dominance, friendship and even, experimentation on their sexuality. Purists may wish away these realities based on moral standards. Yet, because of the dire consequences of unsafe sex on the individual and national development, it is safer to plan based on existing realities that young people are full of energy, inquisitiveness and adventure, not excluding sex, which is the major route of heterosexual acquisition of HIV/AIDS. Perhaps, sports on its own may serve as an alternative to youth's excess energy.

1.3. JUSTIFICATION OF THE STUDY

The highest prevalence of HIV has been reported among youths, a category into which most athletes fall. This realization drives home the point of prioritizing prevention interventions among young people and sports presents such a huge opportunity to reach this sub-population group with HIV prevention services. This however cannot be achieved if the knowledge, attitude and perception of HIV are not known. This has necessitated the need for studies such as these that would assess not only the knowledge, perception and attitude of Nigerian athletes on HIV but also identify the prevailing factors that affect their HIV testing behaviours. Also, studies in the past focused on the knowledge and attitude of students, civil servants and healthcare workers towards HIV testing (Musa et al; Anochie et al; Okojie et al) omitting high risk groups such as athletes who are at greater risk of contracting the virus due to the nature of their job which takes them away from home for long periods.

Also, there is limited information on demographic and behavioural factors influencing the uptake of HIV testing among athletes especially in Nigeria. The practice of HIV testing can reduce the rates of sexually transmitted infections and high-risk sexual practices (Lancet. 2000; Kamb et al 1998) as knowledge of HIV status may help increase awareness on safe sex. HIV testing plays a critical role in reducing stigma and discrimination for PLWHA (UNAIDS. 2008b; UNFPA & IPPF, 2004) and also prevents HIV transmission through

information, education, guidance, continuing support and psychological benefits that help individuals to cope better and lead positive lives (Coovadia, 2000).

1.4 MAIN OBJECTIVE:

- To assess knowledge on HIV/AIDS and determine demographic and behavioural factors that influence HIV testing among athletes in Nigeria.

1.5 SPECIFIC OBJECTIVES

- To determine the prevalence of HIV testing among athletes in Nigeria.
- To determine the demographic and behavioural factors that affect HIV knowledge among Nigerian Athletes.
- To determine the association between demographic and behavioural factors and HIV testing among athletes in Nigeria.

1.6 RESEARCH QUESTIONS

- What is the prevalence of HIV testing among athletes in Nigeria?
- What is the difference in HIV knowledge across demographic and behavioural factors among athletes in Nigeria?
- What is the association between demographic and behavioural factors and HIV testing among athletes in Nigeria?

1.7 HYPOTHESES

- There is no difference in the mean knowledge score across demographic variables among athletes in Nigeria
- There is no association between demographic and behavioural factors and HIV knowledge among athletes in Nigeria?
- There is no association between demographic and behavioural factors and HIV testing among athletes in Nigeria?

CHAPTER TWO

LITERATURE REVIEW

2.0 OVERVIEW

According to USAID/WHO fact sheet report 2006,"Twenty –five years into HIV/AIDS epidemic, more than 80% of the people living with HIV in low and middle income countries do not know they are HIV positive. Nothing suggests that this situation has changed today. This underscores the need to encourage more people to come forth voluntarily to know their status. The prevalence among pregnant women approximates well the prevalence among sexually active men and women aged 15–49 years (Grassly et al., 2004; UNAIDS/WHO. 2003b). It has been called to question, however, the representativeness of this proxy measure whether it actually reflects the prevalence in the whole population, the Most At Risk Populations (MARPs) and other prone groups. There are also population subgroups that are considered vulnerable with respect to HIV infection. These include, females that are widowed, separated or divorced, people with physical and mental challenges, incarcerated populations, people living in poverty and young people (National HIV/AIDS Prevention Plan 2010-2012).

The World Health Organization defines voluntary HIV counseling and testing as a confidential dialogue between a client and a care provider aimed at enabling the client to cope with stress and take personal decisions related to HIV/AIDS. Guidelines for HIV testing were developed in context of high stigma. The HIV testing model has evolved over time to correct parts of it that discouraged its use among individuals. The first serologic HIV test was carried out in 1985. In 1986, the CDC revised the guidelines to focus on the need to offer testing and confidentiality. In 1987 the guideline was further revised and the need to disclose personal information was removed. By 1991, HIV testing was readily available in developed countries with the guidelines further revised in 1993 making it interactive rather than didactic.

HIV testing has proven to be useful in the early detection of HIV and can lead to the use of other services including prevention and clinical management of HIV-related illnesses,

tuberculosis control, psychosocial and legal support, and prevention of mother to child transmission of HIV. HIV testing can also be an effective behaviour-change intervention. VCT offers benefits to those who test positive or negative, alleviates anxiety, increases clients' perception of their vulnerability to HIV, promotes behaviour change, facilitates early referral for care and support including access to ARV therapy and assists in reducing stigma in the community because of the awareness on the sero-status (Seludde et al, 2009).

2.1 HIV TESTING IN NIGERIA

In Nigeria, there are no known studies that show the relationship between demographic and behavioural factors on HIV testing among athletes. Also in Nigeria, HIV/AIDS is aggravated by inadequate sexual health education, inadequate voluntary HIV testing and counselling, unhealthy cultural practices and poor health care system (Jimoh, 2003; Alao, 2004). NDHS 2008 data show that only 3% of women and 6% of men had ever been tested for HIV. People are still scared and skeptical about testing for HIV, and their concerns are mostly fear of stigma, discrimination and how to manage if they test positive (Nwanguma, 2004). Studies among rural farmers in Benue State, Nigeria by Oboh et al 2010 show that knowledge about HIV testing services was also high (94.3%) but only 76.2% were willing to accept free HIV testing services. Major reasons given by the unwilling respondents include, fear of stigmatization (56%), and psychological trauma (32%). Further, despite the fact that 49% of women and 65% of men know where to get a HIV test, only 15% of women and 14% of men have ever been tested and received their result (NSCHIV_AIDS, 2010).

2.2 ATHLETIC PARTICIPATION, SEXUALITY AND HIV/AIDS

The absence of documented cases of transmission during athletic activity is significant in view of the known prevalence of HIV infection(Brown LS, Drotman P 1993).In general, there are at present no Epidemiologic data on the prevalence of HIV/AIDS in Athletes" (Schwellnus, 2008). The preceding information is in contradiction with the infamous remarks that athletes are more promiscuous than their peers. Such unproven statements cannot be conclusively argued in this work. No doubt that physical exercise generally improves the health of an individual, including reproductive health. However, athletic participation alone cannot be an adequate explanation for a perceived overt or covert increase in unsafe sexual

activity of an athlete. That athletes often cohabit in camps is similar to other youths who cohabit in boarding schools, university hostels, or who participate in other types of camp activities. Schwellnus opined that since athletes are youths, HIV prevalence study in athletes should follow the pattern of study in the general sentinel survey/age stratified. This statement is based on the assumption that

- Athletes fall into the age category 15-35 years
- Risk behaviour for HIV in athletes is no different from that of their peers in the same age category; and
- Participation in Sports does not put athletes at any higher or lower risk of contracting HIV (Schwellnus, 2008).

2.3 UNDERSTANDING DRIVERS OF THE HIV/AIDS EPIDEMICS

Before now, several studies on youths had been conducted in the country seeking to understand the drivers of this epidemic amongst this category of the population. Some of the findings from such studies would be cited alongside the commonly identified drivers of the epidemic in Nigeria. According to NSC HIV_AIDS 2010, these drivers affect youths HIV Prevalence, Knowledge, Attitudes and Behaviour. They include:

- Risky sexual practices
- Low risk perception
- Stigma and discrimination
- Gender inequality
- Poverty
- Poor access to and non availability of services

2.4 KNOWLEDGE OF HIV

According to WHO 'youths are at the epicenter for preventing the progression' of the HIV/AIDS pandemic' (WHO, 2004). The WHO estimates that youths ages 15 to 24 comprise 50% of all new HIV infections and consequently must be targeted for education in decreasing transmission and reducing the stigmatization of an HIV diagnosis (WHO, 2004). According to a study, it is clear that youths have a very high knowledge of key basic concept on HIV/AIDS but many youths are still confused about cure of AIDS by spiritual, medical, or traditional

practitioners or whether AIDS has a cure (Odu et al,2008).Understandably, therefore, the prevalent low coverage and uptake of HIV counseling and testing service is a reflection of this perception. Previous studies show that although sexually-active respondents demonstrated basic knowledge of HIV/AIDS and high risk perception, risky behaviour was common and protective behaviour was poor (Adedimeji et al,2007). Studies by Temin in Benin, Nigeria also showed that young people had some knowledge about STDs, especially HIV and AIDS, but many believed infections were inevitable. A study among naval officers showed that although the overall mean AIDS knowledge score was 7.1 of 10 points, 52.1% of respondents believed that a cure for AIDS was available in Nigeria and that one can get HIV by sharing personal items with an infected person (25.3%) (Ugboga A.N et al, 2004).

2.5 EFFECT OF SOCIODEMOGRAPHIC FACTORS ON HIV TESTING

Studies by Auburn et al, (2011) show a negative relationship between age and HIV testing, it showed that younger individuals are more likely to be tested. A study in Ethiopia showed the age group of 15-19 to be the most receptive group to HIV testing services compared with the other age groups. (Mengasha et al, 2006). Studies in Kenya also show that age is initially positively associated with use of HIV testing services to a maximum age of 34 after which the association is negative, though not significant (Namazzi, 2010). Evidence exists that sexual debut is occurring earlier than generally believed among both boys and girls in Nigeria: for girls it can be as early as 10-12 years; and for boys 15 years (REACH Interim Report, 2010). Previous studies by Uchendu et al show the median age at sexual debut for males was 15 years and 16 years for females. The Nigeria Demographic and Health Survey (NDHS, 2008) reported that overall, more than half of women age 25–49 and one quarter of men age 25–49 were sexually active by age 18. One in five women was sexually active by age 15. NARHS report 2007 equally showed that the median age at first sex for all respondents aged 15-24 years was 16 years for females and 17 years for males. Previous studies by Olasode O.A showed age at onset of sexual activity among young people was 10-20 years.

Religion plays an important role in determining sexual practices among different people. The Studies show that Muslim women are less likely to use HIV testing services probably due to the restrictive role of such women and hence limiting their decisions to use such services. (

Namazzi, 2010). Findings on the association between education and HIV testing are mixed. Several studies suggest higher levels of education correspond with higher levels of testing. (Pickering et al 1993, Simbayi et al, 2004; Brouwer et al, 2000.). In Nigeria, A study by Iliyasu et al, 2006 also found a positive relationship between education and adults' willingness to accept VCT services. A recent study also found that individuals with more years of formal schooling were more likely to have had a HIV test than those with less years of education (Auburn, 2011). Education is positively associated with using VCT with the probability increasing by 1.3% with increase in years of education at 1 % level of significance. (Namazzi, 2009). Studies in china show that migrants who were more educated, employed as construction workers, more knowledgeable about HIV/AIDS, aware of HIV risks and who engaged in a multiple sex partnership were more likely to have ever heard of VCT for HIV. (Na He et al, 2009) and those with ≥9 years of schooling (aOR: 10.9, 95% CI: 2.6–45.5), had had a previous HIV test (Xu et al, 2011).

Studies of socioeconomic status (SES) and HIV testing have shown a consistent relationship between income and access to testing. The costs of the actual HIV testing and transportation to and from the testing site may hinder low-income individuals from being tested. (Korra et al, 2005) Moreover, higher income individuals consistently report superior access to testing and health-care services in general. (Simbayi et al, 2004; Siziya et al, 2006; Weiser et al, 2006) Low-income individuals residing in resource-poor countries may face increased barriers and challenges to accessing health services, such as HIV testing services. Also, all wealth categories, i.e. the poorer, middle, richer and richest are significant (at least 10% level of significance) and have a greater probability of using HIV testing services than the base group, the poorest. The probability increases with wealth on average with the poorer and richest having a 4.8% and 9.6% higher probability of using HIV testing services than the poorest respectively (Namazzi, 2010). Seventy four percent of the people in a study were willing to pay for HIV testing services, and this finding is greater as compared to 13% reported in Kenya and 24% in Uganda (UNAIDS, 2002).

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2.6 BEHAVIOURAL FACTORS AFFECTING HIV TESTING

Studies have also shown low level of condom use among sexually experienced adolescents. As the NARHS (2007) reports, only 11.2% of sexually experienced female adolescents (age 15-19 years) and 35.6% of their male counterparts were using condom at the time of the study. This is corroborated by similar findings in a study group which showed that 56.5% used no protection while 29.0% used condoms (Adebiyi&Asuzu, 2009). Studies among young slum dwellers in Ibadan, Nigeria showed that the perception of the respondents about the risks associated with unprotected sex varied by gender and type of partner. Nearly equal proportions of females and males reported a 'great' or 'moderate' risk in unprotected sex with casual partners, but this perception differed when a regular partner was concerned. In this case, nearly 60% of males, compared to 20% of females, reported a 'great' risk, while about 16% of females, compared to 30% of males, reported a 'moderate' risk. (Adedimeji et al, 2007)

A population-based study in adults aged 15-59 years in Uganda found only a small portion of the participants used condoms after receiving VCT (Lutalo et al, 2000). Studies to evaluate the effects of VCT on sexual risk behavior reported that after VCT, HIV-positive participants and HIV sero discordant couples were more likely to reduce unprotected intercourse and increase condom use than HIV-negative and untested participants, and there was no difference in these behaviour changes between HIV-negatives and those who were not tested. Winhardt et al, (1999). A study carried out by the Voluntary HIV-1 Counseling and Testing Efficacy Study Group (2000) during 1995-1998 in three developing countries (Kenya, Tanzania and Trinidad), couples who received VCT had significantly greater reductions in self-reported unprotected intercourse with their enrollment partners than those who received health education (p=0.008); however, the rates of unprotected sex with non-enrollment partners did not differ between the two groups (p=0.3). Among participants who enrolled as individuals, the rate of reported unprotected intercourse with non-primary partners showed greater reduction in the VCT group compared to the health education group (p=0.01); however, the rate with their primary partner was not different (p=0.3). Another study in Thailand compared risk behaviour before seeking anonymous VCT among 250 HIV-positive and 250 HIV-negative consecutive clients of the Thai Red Cross Society Anonymous VCT clinic. The

most common response to either a negative or a positive HIV test result was the reported intention to use condoms more regularly. Study participants who tested negative on a former HIV test reported higher condom use than clients never tested for HIV.(Phanuphak et al. 1994).

In India, over one-third (39%) of the FSWs reported consuming alcohol before meeting clients (Subadra et al, 2010). Injection drug use (IDU) is experienced in a growing number of African countries (Adelekan and Lawal 2006; Abdool et al. 2006), and is therefore becoming increasingly recognized as an important mode of HIV transmission (Dewing et al. 2006). In most countries the HIV prevalence among drug using populations such as commercial sex workers (CSWs) is higher than among the general population not only because they engage in behaviors that put them at higher risk for infection, but because they are among the most marginalized and discriminated against populations and often lack access to basic healthcare services (UNAIDS 2006) Some studies have found significant reductions in drug (Gibson et al, 1999) or sexual risk behaviours (Boyer et al., 1997; Gibson et al, 1999) among .study participants. Xu et al reported a previous history of HIV testing in high risk groups with <5 clients in the recent week (aOR: 1.7, 95% CI: 1.2–2.3), having a regular sexual partner (aOR: 1.9, 95% CI: 1.4–2.5), illegal drug use history (aOR: 2.2, 95% CI: 1.5–3.1),

Multiple sexual partnerships are similarly common amongst youths. According to a study among youths in a tertiary institution in Lagos, more than 70% had multiple lifetime sexual partners (Durojaiye, 2009). Also, a study in Ife among young people showed the number of sexual partners varied between 1 and 5 (Olasode, 2007). A study among Nigerian naval personnel revealed that majority (88.1%) had had lifetime multiple partners ranging from 1–40 with a mean of 5.1; 32.5% of male respondents had had sexual contact with a female sex worker, 19.9% did so during the six months preceding the survey (Ugboga, et al, 2004). Another study indicates that twenty four percent of the students have multiple sex partners, about 44 percent of who do not like using condom (Ojikutu et al, 2010).

2.7 DRIVERS OF THE HIV/AIDS EPIDEMICS

2.7.1 LOW RISK PERCEPTION

The motivation behind HIV testing is complex, and an individual's decision to be tested may be affected by a range of factors including HIV testing policy, the effectiveness and availability of medication, the availability of testing, and health education messages promoting HIV testing. Studies in Britain investigating the relationship between HIV testing and risk behaviour showed a total of 32.4% of men and 31.7% of women reported ever having had an HIV test, the majority of who were tested through blood donation. (Christine et al, 2005).

Studies in Uganda found that most young people have knowledge and information on HIV testing services available (Sebudde et al. 2009). This is however not the case in china where studies show that fewer than half (46.5%) of the participants had heard of HIV testing for HIV. (Na He et al, 2009). However, studies by Uzochukwu et al in Nigeria show that high knowledge of HIV testing does not reflect on the attendance at HIV testing clinics.

Recent non-randomized trial studies reporting on the impact of HIV counselling and testing on HIV risk behaviours suggest that a single dose of HIV counselling and testing is unlikely to be effective in reducing sexual risk behaviours (Clark et al, 1998; Ickovics et al, 1998) or STD incidence (Chamot et al ., 1999; Clark et al ., 1998). Christine et al, 2005 reported that testing for HIV in the past 5 years was associated with high-risk behaviours in both men and women.Women who received HIV counselling and testing engaged in high-risk sexual behaviour at the same level as baseline and their risk behaviours did not differ from women who did not receive HIV counselling and testing at 18 months follow-up (Ickovics ,et al, 1998).

A large trial, reported by Kamb et al. (1998), demonstrated that brief counseling using a personalized risk reduction plan was as effective as intensive enhanced counseling when compared to didactic messages typical of current care at STD clinics. However, data from trials suggest that the effect may wane over time (Kamb et al, 1998; Sweat et al, 2000). Other smaller trials, all carried out in the US, failed to detect statistical differences in high risk

behaviour after HIV counselling and testing (Boyer et al, 1997; Gibson et al ., 1999; Wenger et al ., 1992), perhaps due to insufficient statistical power. Three trials demonstrated that standard counseling was as effective as intensive counseling (Boyer et al, 1997; Wenger, 1992).

Testers at the mobile HIV counselling and testing sites were less likely than non testers to know about clinic-based VCT sites and to have higher incomes and less likely to know a person with HIV. (Stephen F et al, 2006). Another study conducted in Harar Town about utilization of HIV counselling and testing services, perceived barriers and preference of adolescents 15 – 24 yrs of age, majority of them (83.3%) felt that they were at either no or low risk of acquiring HIV and 92.2% responded that they have heard about HIV counselling and testing, the most frequent and preferred source of information for HIV counselling and testing being radio/television (59.2%). Only 21.9% of adolescents reported that they had ever been tested for HIV. The commonly given perceived barriers of HIV tests were low risk perception and fear of stigma and discrimination if the fesllows test positive. (Lemessa, 2005).

A controlled cross-sectional design studying associations between HIV counselling and testing and sexual behaviour in Thailand by Muller et al. (1995) showed risk behaviour reduction after HIV counselling and testing, particularly in HIV positive persons.

Another study showed that testers were significantly more likely than non testers to perceive themselves at increased risk and to report a history of sexually transmitted diseases. For women, this perception of risk was often associated with a belief that their husbands or male partners had other sexual partners. (Stephen et al, 2006). Following HIV testing, a study in china among high risk groups showed a high perception of HIV risk (aOR: 1.5, 95% CI: 1.1–2.2) (Xu et al, 2011)

Further, despite the fact that 49% of women and 65% of men know where to get a HIV test, only 15% of women and 14% of men have ever been tested and received their result (NSCHIV_AIDS,2010). More than 70% of a study population did not perceive themselves at risk of being infected (Durojaiye, 2009).

2.7.2 STIGMA AND DISCRIMINATION

Stigma and discrimination serve as inhibiting factors to the uptake of HIV counseling and testing (HCT) and other HIV Prevention service thereby contributing to inadvertent transmission of HIV among unsuspecting sexually active people. According to a recent study, discrimination ranked as one of the factors that hinder the acceptance of HIV/AIDS VCT (Yahaya et al,2010). Similarly, an earlier study by Iyaniwura et al (2006) showed that 7.9% feared the stigma attached to HIV. Stigma and discrimination are two major problems often faced by people living with HIV and AIDS in many developing countries, including Nigeria. Studies among rural farmers in Benue state, Nigeria by Oboh et al in 2010 show that knowledge about HIV testing services was also high (94.3%) but only 76.2% were willing to accept free HIV testing services. Major reasons given by the unwilling respondents include, fear of stigmatization (56%), and psychological trauma (32%).

Stigma and discrimination shown to persons living with and affected by HIV and AIDS can worsen the spread and the impact of the HIV and AIDS epidemic. As a result of fear of discrimination and stigma, many individuals are afraid of seeking HIV testing to know their HIV status while persons living with HIV and AIDS (PLWHAs) may be less inclined to declare and openly acknowledge their HIV sero status (NARHS REPORT 2007). The same study discovered that half of the respondents would keep it secret if a family member is infected indicating that the fear of stigma and discrimination still persists.

2.7.3 GENDER INEQUALITY

Differences between men and women in biology, sexual behaviors, social attitudes, economic power and vulnerability similarly reflect causes and consequences of the disease in the gender (NSCHIV_AIDS, 2010). Though women are biologically more vulnerable to HIV infection, there is evidence that gender roles and relations are inextricably linked with the level of individual risks and vulnerability to infection as well as the level and quality of care, treatment and support that the infected can access. The United Nations General Assembly Special Session(UNGASS) on HIV and AIDS in June 2001 with 189 country delegates in attendance stressed the point that gender equality and the empowerment of women are fundamental elements in

the reduction of women and girls' vulnerability to HIV and AIDS (UNIFEM. NIGERIA, 2006).

2.7.4 POVERTY

A number of evidences indicate that poverty as well as ignorance has been the major factors accounted for the widespread of HIV/AIDS infections in Nigeria. (Attah, et. al, 2002; Mafeni and Fajemisin, 2003; Ezeanwu, 2004; David, et. al, 2005; Irelin and Afolagbade, 2006; Abdulrahim, 2007, and Abdulfatai, 2008) (NSC HIV_AIDS PLAN,2010). Poverty is a crippling disease, on its own, that complicates HIV/AIDS. The poor are less aware of methods to protect themselves and poverty decreases access to necessary health care, including anti-retroviral drugs, treatment for opportunistic infection, and sexually transmitted infections (NSCHIVAIDS). Whether AIDS causes poverty or poverty causes/complicates AIDS is still debatable.

CHAPTER THREE

METHODOLOGY

3.1 STUDY DESIGN/ STUDY AREA

The study was a cross sectional study among athletes participating in the 17th edition of the Nigerian National Sports Festival between 29th June and 11th July in Port Harcourt, tagged, "Garden City Games" national sports festival held in Port Harcourt Rivers State.

3.2 DESCRIPTION OF THE NATIONAL SPORTS FESTIVAL

The National Sports Festival was conceived as a socio-psychological elixir to bond the decimated psyche of the Nigerian Nation which was traumatized by civil war in the late 60s. To arrest the drift towards inter-tribal morass occasioned by the 1967-70 Civil War and most essentially, to checkmate the declining standards of Nigerian sports, the Federal Government introduced a biennial multi-sports competition involving all the then 12 States, of the Federation, now commonly referred to as the National Sports Festival. Perhaps, it could be arguably insinuated that the Sports Festival was one of the bye products of the 3Rs of (Reconstruction, Rehabilitation and Resettlement) enunciated, as a way of reuniting the country emphasized amongst youths. The Games Festival actually started in 1973 till date and has been religiously held biennially as a multi-sports festival except in 1983, 1987, 1993 and 1995. The founding fathers had the twin objectives of:

A. Promoting mass participation in amateur sports from the grassroots level throughout the country with a view to discovering hidden talents.

B. Promoting healthy and keen competition amongst the competitors and states under a climate of sportsmanship and friendly interaction, thereby enhancing and strengthening unity. So far, 16 editions of the National Sports Festival have come and gone, each contributing to the promotion of the spirit of the Games toward National Development

3.3 STUDY POPULATION

About 12000 Nigerian athletes from the 36 states and the Federal Capital territory were the target population and hence, the sampling frame from which the study population was recruited. The inclusion/eligibility criteria were:

- Athlete must be a registered athlete with either the State Sports Council or National Sports Association,
- The athlete is between 15-35yrs.,

3.4 SAMPLING METHOD

A two stage sampling method was used to select respondents to whom questionnaires were administered.First,proportional allocation was done, having calculated the sample size, for the 36 states and The Federal Capital territory . athletes.Secondly,systematic sampling method was adopted for the final selection of the study participants.

3.5 SAMPLE SIZE DETERMINATION

Based on WHO recommendations which takes into consideration an estimate of the HIV prevalence in the population to be surveyed (FMOH, 2003).

P=0.044 (Prevalence of HIV testing among Nigerian youths, NDHS,2008)

Confidence Interval=95%

z=1.96 (for a normal standard distribution) and

d=0.022(precision or relative error) (Naing et al, 2006),

Substituting in the formula, $N = \frac{z^2 p (1-p)}{d^2}$

$=1.96^2 \times 0.044 \times 0.956 / 0.022^2$

$=334$

Since participation was voluntary, the sample size was oversampled by 10%. This gave an overall sample size of 367 athletes. This made up for those who refused to participate in the survey.

3.6 QUESTIONNAIRE

The study instrument was a self-administered questionnaire which was prerested and necessary adjustments made. It consisted of four parts-Part A related to respondents' socio-demographic background, part B on knowledge regarding HIV/AIDS, Part C on high risk behavior or practice related to HIV/AIDS transmission, and Part D, on Attitude towards people living with HIV/AIDS. The knowledge, attitude and practice questionnaire was modified from the instrument used by NAHRS REPORT, 2007 on HIV prevalence in Nigeria. Knowledge was assessed using a 28-item questionnaire which included knowledge on ways of infection, myths, disease detection, treatment and prevention of HIV/AIDS. Prior to the survey, the questionnaire was pre-tested on thirty respondents to assess its clarity, sequencing and time needed to complete. The result of the pre-test was used to improve the phrasing of questions in the questionnaire.

To assess respondents' knowledge of HIV/AIDS, each right response was given a score of 1 while a wrong response was scored 0. Total knowledge scores ranged between 0-28. Knowledge scores were totaled and converted to percentages. Knowledge scores below 50% were considered as poor knowledge while knowledge scores between 50%-69% were classified as good knowledge. Scores above 70% were considered as having excellent knowledge of HIV/AIDS.

3.7 DATA ANALYSIS

Data was analyzed using SPSS version 15.0. Descriptive statistics was used to describe the data. Univariate analysis was employed to calculate frequencies and distributions of each variable.

Independent sample T test and one way ANOVA was used to determine the effect of demographic and behavioral factors on knowledge score within variables. Linear regression was used to determine the degree of differences in mean knowledge score within variables. Chi-square test was used for bivariate analyses to test the significance of the association between sexual and behavioral risk factors and HIV testing.

Logistic regression analysis was performed for the various factors to show the risk factors affecting the HIV testing. A p-value < 0.05 was considered to indicate statistical significance.

3.8 ETHICAL CONSIDERATION

Informed voluntary consent was ensured. Athletes were made to understand the objectives and benefits of the study. A Consent Form was prepaid to this effect. Confidentiality was already guaranteed since the study is anonymously linked. Approval for this study was sought from the Ethical Review Board of National Action Committee on HIV/AIDS and/or the University College Hospital, Ibadan.

CHAPTER FOUR

RESULTS

4.1 Socio demographic characteristics of athletes

Table 4.1 shows the socio demographic characteristics of athletes. The mean age of the athletes was 29.1years ± 9.3 years. There were more respondents aged 20-29years (31.9%) followed by those aged 30-39years (13.8%), 40years and above (13.4%), and less than 20 years (11.9%) respectively. Mean age at sexual debut was 19.9 SD 3.8 years. Most respondents were single (56.3%), male (67.2%) and were Christians (70.9%). More than half of respondents had tertiary education (55.0%), were from monogamous homes (54.4%) and reside in the urban areas (62.8%). Almost half of the respondents had other sources of income (48.4%). One third of the respondents had a monthly income below N20,000 (30.0%), followed by those earning above N61,000 (9.1%), and those respondents earning between N21,000 and N30,000 (8.8%) respectively.

Table 4.1: Socio demographic characteristics of Athletes

Characteristics	Frequency (n=320)	Percentage
Age		
<20	38	11.9
20-29	102	31.9
30-39	44	13.8
40+	43	13.4
Missing/no response	93	29.1
Religion		
Christianity	227	70.9
Islam and Others	90	28.1
Missing/no response	3	0.9
Sex		
Male	215	67.2
Female	105	32.8
Marital status		
Single	180	56.3
Married and others	140	43.8
Educational level		
Primary	5	1.6
Quranic	10	3.1
Secondary	113	35.3
Tertiary	176	55.0
Missing/no response	16	5.0
Type of home		
Monogamous	174	54.4
Polygamous	120	37.5
Others	3	0.9
Missing/no response	23	7.2
Residence		
Urban central	201	62.8
Semi urban	66	20.6
Rural village	41	12.8
Missing/no response	12	3.8
Another source of income		
Yes	155	48.4
No	143	44.7
Missing/no response	22	6.9
Monthly income rate		
<N20,000	96	30.0
N21,000-N30,000	28	8.8
N31,000-N40,000	23	7.2
N41,000-N50,000	25	7.8
N51,000-N60,000	16	5.0
>N61,000	29	9.1
Missing/no response	103	32.2

4.2 GENERAL KNOWLEDGE ON HIV/AIDS BY ATHLETES

General knowledge of the athletes on HIV/AIDS is shown in table 4.2. Majority of athletes have heard of HIV/AIDS (87.8%) while a little above half believed that AIDS has no cure (58.7%). Majority of the respondents understand the fact that a healthy looking person may have the virus (78.6%), and believed that AIDS can be transmitted from a mother to her child (65.8%).

TABLE 4.2 GENERAL KNOWLEDGE ON HIV/AIDS BY ATHLETES

Variable	Yes (%)	No (%)	Don't know/ no response (%)	Total (%)
Ever heard of HIV/AIDS	281 (87.8)	39 (12.2)	0(0)	320 (100.0)
Does AIDS have a cure	48 (17.1)	165 (58.7)	68.(24.2)	281 (100.0)
Possible that a healthy-looking person has the virus	221 (78.6)	21 (7.5)	39 (13.8)	281 (100.0)
Can AIDS be transmitted from a mother to her child	185 (65.8)	43 (15.2)	17 (6.0)	281 (100.0)

4.3 ATHLETES KNOWLEDGE OF HIV/AIDS TRANSMISSION

Table 4.3 shows the knowledge of the athletes on HIV transmission. Almost all the athletes believed that HIV/AIDS can be transmitted through sexual intercourse (97.5%), blood transfusion (96.1%), Mother to child (65.8%), sharing toilets with an infected person (7.1%), sharing sharp objects like razor (90.7%), sharing needles (84.3%). More than a one fifth of the respondents (22.8%) taught that HIV/AIDS virus can be transmitted through kissing.

TABLE 4.3: ATHLETES KNOWLEDGE OF HIV/AIDS TRANSMISSION

Variable	Yes (%)	No (%)	Don't know/ no response (%)
Sexual Intercourse	274 (97.5)	0(0)	7 (2.5)
Blood transfusion	270 (96.1)	0(0)	11 (3.9)
Mother to unborn child	185 (65.8)	43 (15.3)	53 (18.8)
Sharing toilets	20 (7.1)	186 (66.2)	75 (26.7)
Sharing sharp objects like razor	255 (90.7)	4 (1.5)	22 (7.9)
Sharing needles	237 (84.3)	16 (5.7)	28 (10.0)
Sharing eating utensils	16 (5.7)	192 (68.3)	63 (25.9)
Mosquito bites/bed bugs	21 (7.5)	186 (66.2)	74 (26.3)
Witchcraft	17 (6.0)	178 (63.4)	19 (6.8)
Kissing	64 (22.8)	149 (53.0)	18 (6.4)
Hugging	7 (2.5)	207 (73.7)	10 (3.6)

N=281

4.4 ATHLETES KNOWLEDGE ON HIV/AIDS PREVENTION

Table 4.4 shows the athletes knowledge on the various ways by which HIV/AIDS can be prevented. Most of the athletes believed that HIV/AIDS can be prevented by Staying with one faithful uninfected partner (89.3%), Using condoms every time (79.0%), Abstaining from sex (81.1%), Using antibiotics (27.0%), seeking protection from traditional healers (8.5%). Respondents also believed HIV/AIDS cannot be prevented by. delaying the onset of sexual intercourse (33.1%), avoiding sex with Casual sex workers (76.5%), reducing number of sexual partners (67.6%), avoiding sex with people who have many sexual partners (79.0%), avoid sharing of sharp objects like needles, razors (86.1%), praying to God (54.4%) and going for checkups (66.2%).

TABLE 4.4: ATHLETES KNOWLEDGE ON HIV/AIDS PREVENTION

Variable	Yes (%)	No (%)	Don't know/ no response (%)
Staying with one faithful uninfected partner	251 (89.3)	13 (4.6)	17 (6.0)
Using condoms every time	222 (79.0)	24 (8.5)	35 (12.5)
Abstaining from sex	228 (81.1)	20 (7.1)	33 (11.8)
Delaying the onset of sexual intercourse	93 (33.1)	77 (27.4)	111 (35.9)
Avoiding sex with Casual sex workers	215 (76.5)	15 (5.4)	51 (18.1)
Reducing number of sexual partners	190 (67.6)	40 (14.2)	51 (18.2)
Avoiding sex with people who have many sexual partners	222 (79.0)	11 (3.9)	48 (17.1)
Avoid sharing of sharp objects like needles, razors	242 (86.1)	8 (2.8)	31 (11.1)
Praying to God	153 (54.4)	68 (24.2)	60 (21.3)
Going for checkups	186 (66.2)	41 (14.6)	54 (19.2)
Using antibiotics	76 (27.0)	125 (44.5)	80 (28.5)
Seek protection from a traditional healer	24 (8.5)	183 (65.1)	74 (26.3)

N=281

4.5: KNOWLEDGE SCORE OF RESPONDENTS ON HIV PREVENTION AND TRANSMISSION

Table shows the mean knowledge score of respondents on HIV transmission and prevention, the mean knowledge was 61.5% ±17.8%. About a quarter of the respondents had poor knowledge (22.4%) followed by those with good knowledge (34.2%) with almost half of the respondents having excellent knowledge (41.3%)

TABLE 4.5: KNOWLEDGE SCORE OF RESPONDENTS

KNOWLEDGE SCORE	FREQUENCY	PERCENT
Poor	63	22.4
Good	96	34.2
Excellent	116	41.3
No response	6	.2.1
Total	281	100.0

4.6 BEHAVIORAL CHARACTERISTICS OF ATHLETES

Table 4.6 shows the behavioral characteristics of the athletes. Only one third of the respondents reported having many sexual partners (30.6%). About 25.0% of the respondents used condoms every time with their sexual partners in the last six months while almost half never used condom with their partners in the last 6 months (40.6%). About half of the respondents (46.7%) stated protection from both HIV/STI and unwanted pregnancy as the reason for the use of condoms, others used condom to protect from only HIV/STI (23.7%), prevent unwanted pregnancy (16.4%).

TABLE 4.6: BEHAVIORAL CHARACTERISTICS OF ATHLETES

Characteristics	Frequency	Percentage
Many sexual partners		
Yes	98	30.6
No	195	60.9
No response/missing	27	8.4
Condom used with partner in last 6 month		
Every time	80	25.0
Sometime	72	22.5
Never	130	40.6
No response/missing	38	11.9
Reason for condom use		
Protect from HIV/STI	36	23.7
Prevent unwanted pregnancy	25	16.4
Protect from HIV/STI and unwanted pregnancy	71	46.7
Other	7	4.6
No response/missing	13	8.6

4.7 STIGMA AND DISCRIMINATION

Table 4.7 shows the attitude and perception of the athletes towards HIV positive athletes and individuals. More than half of the respondents believed that HIV positive individuals should be allowed to compete (66.5%) and were willing to eat with a HIV infected individual (63.7%). Majority of the athletes were willing to care for a male HIV infected relative (84.7%) and female HIV infected relative (85.1%). Half of the respondents were willing to eat food prepared by a HIV infected person (50.9%) and were also willing to keep the status of a HIV positive family member a secret (49.9%).

TABLE 4.7: STIGMA AND DISCRIMINATION

Variable	Yes (%)	No (%)	Don't know/no response (%)
Are you willing to eat with HIV infected individual	179 (63.7)	63 (22.4)	39 (13.8)
Are you willing to care for a male HIV infected relative	238 (84.7)	23 (8.2)	20 (7.1)
Should a HIV infected athlete be allowed to compete	187 (66.5)	45 (16.0)	49 (17.4)
Are you willing to care for a female HIV infected relative	239 (85.1)	20 (7.1)	22 (7.8)
Should a HIV infected couch be allowed to continue coaching	222 (79.0)	27 (9.6)	32 (11.4)
Are you willing to eat food prepared by HIV infected individual	143 (50.9)	100 (35.6)	38 (13.6)
Would you keep the status of a HIV positive family member a secret	140 (49.9)	83 (29.5)	58 (20.6)
Should HIV positive child be allowed to attend school with other children	214 (76.2)	32 (11.4)	35 (12.5)

N=281

4.8: PREVALENCE OF HIV TESTING AND SELF PERCEIVED RISK OF ATHLETES

Table 4.8 shows the prevalence of HIV testing among the athletes. More than half of the athletes had previously had a HIV test (60.0%) with females having a higher prevalence of HIV testing (60.2%) compared to males (59.9%). Majority of those that had a HIV test got their results (97.8%). Reasons for wanting a HIV test varied among the athletes with more than half wanting to know their HIV status (61.2%), followed by those who had a test for marriage purposes (17.4%) and to reduce fear and anxiety (16.3%). Only a few had other reasons for having HIV test (3.9%) while 1.1% had test for employment purposes. More than half of the athlete who had not had a test was willing to have a HIV test (69.2%). Almost half of the respondents not willing to have a HIV test felt it was not necessary (46.4%). Majority of the respondents knew a facility where they can have a HIV test (86.8%). About a third of the respondents (27.4%) had a high self perceived risk of contracting HIV followed by those who felt they were not at risk (26.0%) and those who perceived themselves to have a low risk of contracting the HIV virus (22.3%).

Table 4.8: PREVALENCE OF HIV TESTING AND SELF PERCEIVED RISK OF ATHLETES

VARIABLE	FREQUENCY (%)
Have you ever had a HIV test	
Yes	189 (60.0)
No	126 (40.0)
Total	304 (100)
Result obtained after HIV test	
Yes	180 (97.8)
No	4 (2.2)
Total	184 (100)
Reason for having HIV test	
Reduce fear and anxiety	29 (16.3)
Required for employment	2 (1.1)
For marriage purposes	31 (17.4)
Want to know HIV status	109 (61.2)
Others	7 (3.9)
Total	178 (100)
If no, would you like to have a HIV test	
Yes	83 (69.2)
No	37 (30.8)
Total	120 (100)
Reason for not wanting to have a HIV test	
Don't want to know my HIV status	2 (7.1)
Fear and anxiety	6 (21.4)
Feel it's not necessary	13 (46.4)
Cannot afford it others	1 (3.6)
Others	6 (21.4)
Total	28 (100)
Know facility to have a HIV test	
Yes	264 (86.8)
No	40 (13.2)
Total	304 (100)
Rate you chances of contracting the HIV virus	
High	80 (27.4)
Low	65 (22.3)
No risk	76 (26.0)
Not sure	71 (24.3)
Total	292 (100)

4.9 COMPARISON OF MEAN KNOWLEDGE SCORES BETWEEN SOCIO DEMOGRAPHIC CHARACTERISTICS OF ATHLETES

Table 4.9 shows the comparison of mean knowledge score between sociodemographic characteristics of athletes. Christians had a higher mean knowledge score (62.5), compared to Muslims and those from other religions (58.5). This was not significant (p=0.095). Athletes with tertiary education had a higher mean knowledge score of 63.9 when compared to those with secondary education and less (58.8). This was significant (p=0.022).

TABLE 4.9: COMPARISON OF MEAN KNOWLEDGE SCORE BETWEEN SOCIO DEMOGRAPHIC CHARACTERISTICS OF ATHLETES
INDEPENDENT SAMPLE T TEST

Variable	Mean Knowledge score	SD	T- test	P-value
Sex				
Male	62.4	17.1	1.262	0.208
Female	59.6	19.0		
Marital status				
Single	62.1	15.9	0.624	0.533
Married and Others	60.7	19.9		
Religion				
Christianity	62.5	17.2	1.674	0.095
Islam and Others	58.5	19.1		
Education				
Secondary and less	58.8	17.4	0.649	0.022
Tertiary	63.9	17.8		
Do you have another occupation				
Yes	62.4	18.5	0.668	0.504
No	60.9	16.6		
Type of home				
Monogamous	62.2	18.6	0.681	0.496
Polygamous and Others	60.7	16.4		
ONE WAY AVOVA				
Variable	**Mean Knowledge score**	**SD**	**F- test**	**P-value**
Age				
<20	60.8	15.1	0.251	0.860
20-29	60.9	17.9		
30-39	63.6	17.9		
40+	62.6	20.5		
Residence				
Urban central	62.3	17.6	0.598	0.551
Semi urban	61.1	17.6		
Rural	58.6	20.2		
Income rate				
<N20,000	61.9	17.3	0.125	0.945
N21,000-N40,000	61.2	22.4		
N41,000-N60,000	60.1	15.2		
N61,000+	62.8	22.1		

4.10.: LINEAR REGRESSION OUTPUT OF KNOWLEDGE ON VARIABLES

Linear regression output of knowledge on variables is shown in table 4.10. After adjusting for other variables, Christians have a higher mean knowledge score of about 4.593 than Muslims and those who practice other religions. This was not significant at p=0.063. Those athletes with tertiary education had a higher mean knowledge score of 5.395 compared to those with secondary education and less. This was significant (p=0.016)

TABLE 4.10: Linear regression output of knowledge on variables

Variable	Unstandardized regression coefficient	P-value	95% CI
Religion			
Christianity	4.593	0.063	-0.245-9.432
Islam and Other (ref)			
Educational level			
Tertiary	5.395	0.016	1.017-9.773
Secondary and less (ref)			

4.11: ASSOCIATION BETWEEN HIV TESTING AND SOCIODEMOGRAPHIC CHARACTERISTICS

Table 4.11 shows the association between HIV testing and socio demographic characteristics of the athletes. A slightly higher proportion of athletes aged 30-39years (69.8%) reported having tested for HIV compared to those aged 40 years and above (69.0%), 20-29years (55.4%) and those below 20 years [35.1] of age. This was significant (p=0.005). A higher proportion of those who had tertiary education (67.2%) reported having tested for HIV compared to those who had secondary education and less (48.8%). This also was significant (p=0.001).

TABLE 4.11: BIVARIATE ANALYSIS OF HIV TESTING AND SOCIODEMOGRAPHIC CHARACTERISTICS

Characteristics	Ever tested for HIV		Total	Chi square	P-value
	Yes (%)	No (%)			
Age					
<20	13 (35.1)	24 (64.9)	37 (100.0)	12.679	0.005
20-29	56 (55.4)	45 (44.6)	101 (100.0)		
30-39	30 (69.8)	13 (30.2)	43 (100.0)		
40+	29 (69.0)	13 (31.0)	42 (100.0)		
Sex					
Male	127 (59.9)	85 (40.1)	212 (100.0)	0.002	0.961
Female	62 (60.2)	41 (39.8)	103 (100.0)		
Marital Status					
Single	100 (56.5)	77 (43.5)	177 (100.0)	2.066	0.151
Married and Others	89 (64.5)	49 (35.5)	138 (100.0)		
Religion					
Christianity	136 (61.0)	87 (39.0)	223 (100.0)	0.610	0.435
Islam and Others	50 (56.2)	39 (43.8)	89 (100.0)		
Educational level					
Secondary and less	61 (48.8)	64 (51.2)	125 (100)	10.269	0.001
Tertiary	117 (67.2)	57 (32.8)	174 (100)		
Type of home					
Monogamous	105 (61.8)	65 (38.2)	170 (100.0)	0.378	0.539
Polygamous and others	71 (58.2)	51 (41.8)	122 (100.0)		
Residence					
Urban central	121 (61.1)	77 (38.9)	198 (100.0)	1.104	0.576
Semi urban	40 (61.5)	25 (38.5)	65 (100.0)		
rural	21 (52.5)	19 (47.5)	40 (100.0)		
Do you have another source of income					
Yes	98 (64.9)	53 (35.1)	151 (100)	2.466	0.116
No	80 (55.9)	63 (44.1)	143 (100)		
Income rate					
<N20,000	57 (60.0)	38 (40.0)	95 (100.0)	3.160	0.368
N21,000-N40,000	37 (74.0)	13 (26.0)	50 (100.0)		
N41,000-N60,000	28 (68.3)	13 (31.7)	41 (100.0)		
N61,000+	16 (61.5)	10 (38.5)	26 (100.0)		

4.12: ASSOCIATION BETWEEN HIV TESTING AND BEHAVIORAL CHARACTERISTICS OF ATHLETES

Table 4.12 shows the association between HIV testing and Behavioral characteristics of the athletes. A higher proportion of those that used condoms every day in the past six months (70.9%) reported having tested for HIV compared to those who used condom sometimes (60.6%) and those who never used condoms (53.5%), (p=0.045).

TABLE 4.12: BIVARIATE ANALYSIS OF HIV TESTING AND BEHAVIORAL CHARACTERISTICS OF ATHLETES

Characteristics	Ever tested for HIV		Total	Chi square	P-value
	Yes (%)	No (%)			
Multiple sexual partners					
Yes	62 (63.9)	35 (36.1)	97 (100.0)	0.932	0.334
No	112 (58.0)	81 (42.0)	193 (100.0)		
Reasons for condom use					
Protect from HIV/STI	34 (65.4)	18 (34.6)	52 (100.0)	1.903	0.593
Prevent unwanted pregnancy	23 (67.6)	11 (32.4)	34 (100.0)		
Protect from HIV/STI and unwanted pregnancy	64 (61.5)	40 (38.5)	104 (100.0)		
Others	14 (51.9)	13 (48.1)	27 (100.0)		
Condom use in the last six months					
Every time	56 (70.9)	23 (29.1)	79 (100.0)	6.195	0.045
sometime	43 (60.6)	28 (39.4)	71 (100.0)		
never	69 (53.5)	60 (46.5)	129 (100.0)		
Genital discharge, itching or Ulcers in the past six months					
Yes	20 (64.5)	11 (35.5)	31 (100.0)	0.286	0.593
No	159 (59.6)	108 (40.4)	267 (100.0)		
Know a facility to get a HIV/AIDS test					
Yes	169 (64.3)	94 (35.7)	263 (100)	12.426	<0.001
No	14 (35.0)	26 (65.0)	40 (100)		

4.13: ASSOCIATION BETWEEN HIV TESTING AND RISK PERCEPTION BY ATHLETES

Table 4.13 shows the association between HIV testing and self perceived risk for contacting the HIV/AIDS virus. There was no significant association between HIV testing and self perceived risk.

TABLE 4.13: BIVARIATE ANALYSIS OF HIV TESTING AND SELF PERCEIVED RISK

Characteristics	Ever tested for HIV		Total	Chi square	P-value
	Yes (%)	No (%)			
Rate you chances of contacting the HIV virus					
High	52 (65.0)	28 (35.0)	80 (100)	5.959	0.114
Low	44 (67.7)	21 (32.3)	65 (100)		
No risk	38 (50.0)	38 (50.0)	76 (100)		
Not sure	40 (56.3)	31 (43.7)	71 (100)		

4.14 Logistic regression output on variables

Table 4.14 shows the logistic regression output on variables. After adjusting for other variables, athletes with secondary education and less were about three times less likely to have been tested for HIV than those with tertiary education (OR=0.392, 95%CI=0.201-0.767). Athletes who knew a facility where they could get a HIV/AIDS test were about five times more likely to have had a HIV test compared to those who did not know where to get a HIV/AIDS test. (OR=4.202, 95%CI=10556-11.349)

TABLE 4.14: Logistic regression

Variable	Odds ratio	95% CI or	P-value
Educational level			
Secondary and less	0.392	0.201-0.767	0.006
Tertiary	1.000		
Age			
<20	0.507	0.149-1.729	0.278
20-29	0.696	0.273-1.776	0.448
30-39	1.100	0.381-3.177	0.860
40+			
Condom use in the last six months			
Every time	2.002	0.900-4.454	0.089
sometime	1.367	0.628-2.979	0.431
never	1.000		
Know a facility to get a HIV/AIDS test			
Yes	4.202	1.556-11.349	0.005
No	1.000		

CHAPTER FIVE

5.1 DISCUSSION

This study shows there are reasons why youths, particularly athletes have varying knowledge on HIV/AIDS and also shows the demographic and behavioural factors that affect the uptake of HIV testing among them. Most of the athletes had a basic knowledge of HIV/AIDS and the various modes of transmission and prevention. However, their overall knowledge on prevention and transmission was a little above average.

Mean age at sexual debut was 19.9 years this may be higher than the age of sexual debut in youths generally because athletes are engaged in sports and therefore channel excess energy to use compared to youths who may use sexual relationships as an avenue to use up unspent energy. This is in line with reports by the 2010 REACH interim report which states that sexual debut is occurring earlier than generally believed among both boys and girls in Nigeria: for girls it can be as early as 10-12 years; and for boys 15 years. Also, the 2008 NDHS reports which reported that overall, more than half of women age 25--49 and one quarter of men age 25--49 were sexually active by age 18. One in five women was sexually active by age 15.

The mean knowledge score among the respondents was a little above average; this may be because majority of the athletes spend time outside their bases and are on the move due to the nature of sports. This may isolate them from the general public and youths within their age group and lead to the athletes consulting from their peers on issues relating to sexual health, HIV/AIDS inclusive. This finding is in contrast to a study by Bimbola et al which found that youths have a very high knowledge of key basic concepts on HIV/AIDS (Bimbola Kemi Odu et al, 2008) Christians had a higher mean knowledge score compared to Muslims. Also, athletes who resided in urban central areas had a higher knowledge of HIV/AIDS prevention and transmission compared to those in semi urban and rural areas. This may be the case because residents of urban areas are more likely to come across electronic and print media that convey messages on HIV/AIDS prevention and transmission. This is in line with a study

that showed an increase in knowledge of HIV/AIDS transmission modes as well as protective measures especially in the urban areas (Okunna and Dunnu, 2006),

Prevalence of HIV testing among the athletes was above average with females having a slightly higher prevalence than the male athletes. This contrasts previous studies in which more men knew a facility where to get a HIV test (NSCHIV_AIDS, 2010).This may be because females are more likely to conceive which would lead to compulsory HIV testing in recent years. Majority of the athletes knew a facility where they could get a HIV test; however, just a little above half of them had ever had a HIV test. This may be as a result of the athletes perceiving themselves not to be at risk of contracting the HIV virus. It may also be as a result of fear of knowing ones HIV status.

Although not significant the study found that younger athletes were less likely to have had a HIV test. This is probably due to an increase in self perceived risk with age or an increase in knowledge on HIV/AIDS. Findings on the association between age and HIV testing are mixed. This is in contrast with studies by Auburn et al, (2011) which showed a negative relationship between age and HIV testing, it showed that younger individuals are more likely to be tested. A study in Ethiopia also showed the age group of 15-19 years to be the most receptive group to HIV testing services compared with the other age groups. (Mengasha et al, 2006). Studies in Kenya also show that age is initially positively associated with use of HIV testing services to a maximum age of 34 after which the association is negative, though not significant (Namazzi, 2009).

The study showed that athletes with secondary levels of education or less were less likely to have had a HIV test compared to those with tertiary education. This may be as a result of those with higher levels of education having a better knowledge of HIV/AIDS prevention and transmission and the benefits of knowing ones status. Several studies suggest higher levels of education correspond with higher levels of testing. (Iliyasu et al, 2006. Pickering et al 1993. Simbayi et al, 2004; Brouwer et al, 2000.) These findings are also corroborated by recent studies which found that individuals with more years of formal schooling were more likely to have had a HIV test than those with less years of education (Auburn, 2011). A recent study also showed that education is positively associated with using VCT services (Namazzi, 2009). Studies in china show that migrants who were more educated, employed as construction

workers, more knowledgeable about HIV/AIDS, aware of HIV risks and who engaged in a multiple sex partnership were more likely to have ever heard of VCT for HIV. (Na He et al, 2009) and those with ≥9 years of schooling. The study also showed that there was an association between HIV testing and consistent condom use. Although not significant on the logistic regression, athletes who used condoms every time during each sexual act were more likely to have had a HIV test compared to those who never used a condom. This may probably be due to the consistent condom users been more conscious of the importance to protect themselves from the HIV virus or prevent the spread of the virus if they are HIV positive. This is in contrast to a population-based study in adults aged 15-59 years in Uganda which found only a small portion of the participants used condoms after receiving VCT (Lutalo et al ., 2000).

5.2 CONCLUSION AND RECOMMENDATION

The study shows that HIV/AIDS knowledge among athletes is not adequate and is affected mainly by their level of education. This suggests that athletes' knowledge on HIV/AIDS is associated and mainly influenced by the demographic factors that surround their upbringing. It also identified some factors that prevent HIV testing among athletes. They include having a higher level of education and knowledge of a facility that provides HIV testing services.

In view of these findings, strategies should be put in place that incorporate training of athletes in sexual and reproductive health with special regards to HIV/AIDS. Also, HIV testing services should be made readily available to the athletes. This can be achieved by:

A. Organizing seminars for athletes on HIV/AIDS when they are in camp or training especially among athletes that are muslims, from the rural areas and those with lower levels of education.
B. Providing HIV testing services free or at a subsidized rate to the athletes.

5.3 LIMITATIONS

Stigma and discrimination often associated with HIV/AIDS makes it difficult for people to participate in studies that are linked to HIV/AIDS. This is because in many parts of sub-Saharan Africa, it is not common practice to talk about your sex life freely irrespective of the circumstances that surround the need to divulge such information. Also, refusal bias and inadequate sample size may have affected validity of result.

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QUESTIONAIRE TO DETERMINE HIV/AIDS KNOWLEDGE, ATTITUDES AND PRACTICES OF NIGERIAN ATHLETES ATTENDING THE 17TH EDITION OF THE NIGERIAN NATIONAL SPORTS FESTIVAL IN PORT HARCOURT

Instructions: Please read carefully and tick 'x' / inside the box of any option(s) you may have chosen. You may also mark more than one option to some questions.

CONSENT:

My name is Dr. Onuoha, Nnamdi, Lucky, an MSc. Student of the Faculty of public Health, University of Ibadan. I am conducting a research on knowledge and attitudes about HIV/AIDS and other selected issues related to HIV. Some of the questions are very personal but your responses will be treated with utmost confidentiality. Your name or other details will not appear on the questionnaire and the responses you give cannot be traced back to you. You have a right to withdraw consent or refuse to participate in the study but I implore you to participate and give your honest responses as they will assist in planning HIV/AIDS related programmes for Nigerian youths and improving the health status of sportsmen and women.

Thank you in anticipation of your cooperation.

A SOCIO- DEMOGRAPHIC INFORMATION

1. Serial No.....
2. Your Sport.....
3. Sex: 1. Male ☐ 2. Female ☐
4. Age last birthday (yrs) .....
5. Marital status: 1. Married ☐ 2. Single ☐ 3. Separated ☐
   4. Divorced ☐ 5. Widowed ☐ 6. Others specify ☐
6. Your Religion: 1. Christianity ☐ 2. Islam ☐ 3. Traditional ☐
   4. Specify others ☐ 5. No response.....
7. Your level of Education: 1. No formal education ☐ 2. Primary ☐ 3. Quoranic ☐
   4. Secondary ☐ 5. Tertiary. ☐
8. Do you have any other occupation or source of income? 1. Yes ☐ 2. No. ☐
9. If "Yes" to question No. 8 what is the occupation?.....
10. How would you rate your monthly income? 1.<N20,000 ☐ 2. N21,000-30,000 ☐
    3. N31,000-40,000 ☐ 4. N41,000 - 50,000 ☐ 5. N51,000 - 60,000 ☐ 6. N61,000 ☐
11. What type of home are you from? 1. monogamous ☐ 2. Polygamous ☐ 3. Others specify.....
12. Where do you reside (live) in? 1. Rural, Village ☐ 2. Semi, urban ☐ 3. Urban, Central ☐
13. Have you been living continuously in the above city/town/village? 1. Yes ☐ 2. No. ☐
14. In the last 12 months have you been away from your home for more than one month altogether?
    1. Yes ☐ 2. No. ☐

B HIV/AIDS KNOWLEDGE

15. Have you ever heard of AIDS or HIV (the virus that causes AIDS)? 1. Yes ☐ 2. No. ☐
16. Does AIDS have a cure? 1. Yes ☐ 2. No. ☐ 8. Don't Know ☐

17. Is it possible that a healthy- looking person has the virus that causes Aids?

1. Yes ☐ 2. No. ☐ 8. Don't Know ☐

18 How can a person get the virus that causes AIDS? (Multiple answers allowed).

		1 Yes	2 No	8 Don't Know
A.	Sexual Intercourse	☐	☐	☐
B.	Blood transfusion	☐	☐	☐
C.	Mother to unborn child	☐	☐	☐
D.	Sharing toilets	☐	☐	☐
E.	Sharing sharp objects like razors	☐	☐	☐
F.	Sharing needles	☐	☐	☐
G.	Sharing eating utensils	☐	☐	☐
H.	Mosquito bites/bed bugs	☐	☐	☐
I.	Witchcraft	☐	☐	☐
J.	Kissing	☐	☐	☐
K.	Hugging.	☐	☐	☐

19. What can a person do to avoid getting the virus that causes AIDS? (Multiple answers allowed)

		1 Yes	2 No	8 Don't Know
A.	Staying with one faithful uninfected partner	☐	☐	☐
B.	Using condoms every time	☐	☐	☐
C.	Abstaining from sex	☐	☐	☐
D.	Delaying the onset of sexual intercourse	☐	☐	☐
E.	Avoiding sex with Casual Sex Workers (CSWs)	☐	☐	☐
F.	Reducing number of sexual partners	☐	☐	☐
G.	Avoiding sex with people who have many sexual partners	☐	☐	☐
H.	Avoid sharing of sharp objects like needles, razors	☐	☐	☐
I.	Praying to God	☐	☐	☐
J.	Going for checkups	☐	☐	☐
K.	Using antibiotics	☐	☐	☐
L.	Seek protection from a traditional healer	☐	☐	☐
M.	Nothing.	☐	☐	☐

20 Can the virus that causes AIDS be transmitted from a mother to her child?

1. Yes ☐ 2. No ☐ 8. Don't' Know ☐

21. Would you rate your chances of getting Aids (or the Virus that causes Aids) as high, low or no chance at all? 1. High ☐ 2. Low ☐ 3. No risk at all ☐ 8. No response ☐

22 Do you know of a place where you can go to get an HIV (AIDS) test?

1. Yes ☐ 2. No. ☐

23. I don't want to know the result of your test but have you ever tested for the virus that causes Aids?

1. Yes ☐ 2. No ☐

24. If "Yes" to question 23, did you get the result of the test? 1. Yes ☐ 2. No. ☐

25 Would you like to have a test to find out if you have the virus that causes AIDS? 1. Yes ☐ 2. No. ☐

26 What is the main reason why you would like to have a test? 1. To reduce fear and anxiety ☐

2. Required for employment ☐ 3. For marriage purposes ☐ 4. I want to know my HIV status ☐

8. others specify. ☐

27 If your answer in Q25 is NO, What is the MAIN reason you would not have a test?

1. Do not want to know my HIV status ☐ 2. Fear and anxiety ☐

3. I feel it is not necessary ☐ 4. I can not afford it. ☐

C. SEXUAL BEHAVIOUR/CONDOM USE

28. At what age did you first have sexual intercourse, if ever? 1. Age in years ( )

2. Never ☐ 3. Can't remember ☐ 8. No response ☐

29 Have you had more than one sexual partner at a time? 1. Yes ☐ 2. No. ☐

30 Think about the persons you have had sex with in the last 12 months. How many were:

A Your spouse(s) or partners who you were living together with (____/ ____)

B. Boy/Girl friends (____/ ____)

C. Partners with whom you had commercial sex (____/____)

D. Partners you met on a casual basis (____/ ____)

E. No response (____/ ____)

31. In your very last sex act with a sexual partner, was a condom used? 1. Yes ☐ 2. No. ☐

32 What was the MAIN reason why you used a condom that time?

1.To protect from HIV/STIs ☐ 2. To prevent unwanted pregnancy ☐

3. To protect from HIV/STIs and unwanted pregnancy ☐ 4. others specify. ☐

33. If "No" to question 31 what is the MAIN reason you didn't use a condom with your partner that time?

1. Not available ☐ 2. Too expensive ☐ 3. Partner objected ☐

4. Don't like them ☐ 5. Trust my partner ☐ 6 Desired pregnancy. ☐

7. Used other contraception ☐ 8 Didn't think it was necessary ☐ 9. Didn't think of it ☐

10. Don't know condoms ☐ 11. Others specify..... 12 No response ☐

34. During the last six months was a condom used with your sexual partner(s) every time you had sex, sometimes o

never? 1. Every time ☐ 2. Some times ☐ 3. Never ☐ 8 No response. ☐

35 If "Yes" to question 35 what was the MAIN step you took? ☐

1. Seek advice or treatment from a government clinic or hospital ☐

2. Seek advice or treatment from a workplace clinic or hospital. ☐

3. Seek advice or treatment from a Christian/Islamic or Charity-run clinic or hospital ☐

4. Seek advice or treatment from a Private clinic or hospital ☐

5. Seek advice or treatment from a Private pharmacy ☐

6. Seek advice or treatment from a Traditional healer ☐

7. Seek advice or treatment from a patent medicine store ☐

D RISK BEHAVIOURS/PRACTICES TOWARDS HIV INFECTION

37. Which of these apply to you in the last six months?

1. Share unsterilized needles with other peers (athletes or others) ☐
2. use of intravenous drug ☐
3. Have more than one sexual partner ☐
4. Pay commercial sex workers for sex, at least once ☐
5. have casual sex without condom ☐
6. have sex under the influence of alcohol ☐
7. Engage in anal sex ☐
8. Take hard drugs (marigjuana, cocaine, heroin, etc) ☐
9. Leave untreated sexually transmitted diseases ☐
10. Share unclean razor blades, barbing clippers. ☐

E. ATTITUDES TOWARDS HIV/AIDS (Stigma and Discrimination)

38. Would you be willing to eat from the same dish with a person you knew had the virus that causes AIDS?

1. Yes ☐ 2. No. ☐ 8. Don't Know. ☐

39 If a male relative of yours became ill with AIDS, would you be willing to care for him in your household?

1. Yes ☐ 2. No. ☐ 8. Don't Know. ☐

40. If an athlete has the virus that causes AIDS but is not sick, should he or she be allowed to continue competing?

1. Yes. ☐ 2. No ☐ 8. Don't Know ☐

41 If a female relative of yours becomes ill with AIDS , would you be willing to care for her in your household?

1. Yes. ☐ 2. No ☐ 8. Don't Know ☐

42 If a female coach has the virus that causes AIDS but is not sick, should she be allowed to continue coaching?

1. Yes. ☐ 2. No ☐ 8. Don't Know ☐

43 If you knew a shopkeeper or food seller who had the virus that causes AIDS, would you buy food from him/her?

1. Yes. ☐ 2. No ☐ 8. Don't Know ☐

44 If a member of your family became ill with the virus that causes AIDS would you want it to remain a secret or no

1. Yes. ☐ 2. No ☐ 8. Don't Know ☐

45 If a team mate in your team has the virus that causes AIDS but is not sick, should he or she be allowed to compet

with you? 1. Yes. ☐ 2. No ☐ 8. Don't Know ☐

46 If a child has the virus that causes AIDS should he or she be allowed to attend school with other children?

1. Yes. ☐ 2. No ☐ 8. Don't Know ☐

47 Should people who have AIDS (or the virus that causes AIDS) be given more health care, equal health care or les

health care than people with other serious diseases? 1. More health care ☐ 2. Equal health care ☐

3. Less health care ☐ 8. Don't Know. ☐

THANK YOU AND GOD BLESS.