Sexually Transmitted Infection (STI) Treatment Service Utilization among Selected HIV at high risk groups in Lagos Nigeria

BY

Nwafor Samuel Uchenna.

Matric Number- 173619

DEPARTMENT OF EPIDEMIOLOGY AND MEDICAL STATISTICS

FACULTY OF PUBLIC HEALTH,

COLLEGE OF MEDICINE,

UNIVERSITY OF IBADAN.

DECLARATION

I hereby declare that this study is original. It has neither been presented in any other faculty for the purpose of the award of a Master's degree nor has it been submitted elsewhere for publication.

CERTIFICATION

We certify that this work was carried out in the Department of Epidemiology and Medical Statistics, Faculty of Public Health, University of Ibadan under my supervision

---

Dr. Olufunmilayo J. FAWOLE

M.B.B.S, (ib), M.Sc (S.Africa), F.M.C.P.H. (Nig), F.W.A.C.P, Clin. Epid.(S.Africa); FMedtdn(SA)

Department of Epidemiology and Medical Statistics, Faculty of Public Health,

University of Ibadan

Dr. Bidemi O. Yusuf

Department of Epidemiology and Medical Statistics, Faculty of Public Health,

University of Ibadan

DEDICATION

This work is dedicated to God Almighty for his unending love, my beautiful wife Mrs. Godsgift Nwafor, my parents and my wonderful friends.

TABLE OF CONTENTS

List of Tables

Acronyms

AIDS	Acquired Immune deficiency Syndrome
ART	Anti Retroviral Therapy
BBFSW	Brothel Based Female Sex Workers
BBPWID	Bunk based people who inject drugs
DU	Drug Users
FMOH	Federal Ministry of Health
FSW	Female Sex Workers
HCG	Health Care Givers
HF	Health Facilities
HIV	Human Immunodeficiency Virus
HTC	HIV Testing and Counseling
IBBSS	Integrated Biological and Behavioral Surveillance Survey
IDU	Injecting Drug Users
LGA	Local Government Area
MARPS	Most at risk population
MDG	Millennium Development Goal

MIRF	MARPS Intervention Registration Form
MSM	Men Who Have Sex with Men
MSW	Male Sex Workers
NBBFSW	Non Brothel based female sex workers
NGO	Non Governmental Organization
NIDU	Non Injecting Drug Users
OR	Odds Ratio
PLWHA	People Living with HIV and Aids
PWID	People Who Inject Drugs
RDS	Respondent Driven Sampling
SHiPS	Strengthening HIV Prevention Services
SPSS	Statistical Package for the Social Sciences
STI	Sexually Transmitted Infections
TB	Tuberculosis
UNAIDS	United Nations Program on Aids
USAID	United States Agency for International Development
W.H.O	World Health Organization

ACKNOWLEGDEMENT

My profound gratitude to the Almighty God for his loving kindness and peace at all times.

My sincere gratitude to my supervisors Dr. Mrs Fawole and Dr. Bidemi Yusuf for their immense efforts, and guidance towards the successful completion of this project.

My appreciation also goes to Lagos Aids Control Agency: Center for the Right to Health. The USAID funded SHiPS for MARPS project and Society for Family Health for their support during the data collection process. Martins Imahansoleva also added great value to this work.

ABSTRACT

Background: HIV high risk population including Inject Drug Users (IDUs) and Men who have Sex with Men (MSM) do not appear to access Sexually Transmitted Infection (STI) treatment services as often as would be desirable. This situation is worsened by social discrimination, anti-gay laws and drug abuse related laws recently enacted in many developing countries, including Nigeria. This has led to an increasing prevalence of both STI and among this HIV most at risk population.

Objective: To describe the burden of STIs and identify the key factors associated with STI treatment services uptake among selected HIV high risk groups in Lagos State. Nigeria

Methodology: Respondent driven sampling (RDS) technique was used to recruit 195 MSM respondents, while a multistage stratified random sampling method was used to recruit 125 IDU respondents in five selected Local Government Areas (LGAs) of Lagos State. Information on socio-demographic characteristics, self reported STI symptoms and access to health care services was collected using a semi-structured questionnaire. Description analysis was done for categorical variables to identify prevalence while chi square tests were used to test for association between variables. A binary logistic regression analysis was also done to identify factors associated with uptake of STI treatment services.

Results: The IDUs included 96.8% males and 3.2% Females. with mean age of 46.65 $\pm$8.182 years, while mean age of the MSM was 24.94 $\pm$ 4.7 years old. The proportion of BBPWID and MSM who reported Symptoms of STI was 55.2% and 25.4% respectively, while 68.4% of BBPWID and 49.2% of MSM received treatment for STI in the last six months. Most of the respondents with self reported STI symptoms obtained treatment from unqualified sources including self medication (45.6% of BBPWID and 27.5% of MSM), Patent/Road side Stores

(16.0% of BBPWID and 20.6% of MSM), with only a few visits to treatment centers/public hospitals (23.3%-BBPWID, 16.9%-MSM) and others (14.4%-BBPWID, 34.4%). Only 40.4% of the MSM and 36.8% BBPWID who received STI treatment reported being satisfied with the services/treatment accessed while 32.1% MSM and 40.0% BBPWID believed that the services of Health Facility was friendly. MSM who have lived in a location between 7 to 12 months are 0.253 times more likely to access quality treatment for STI than MSM who lives less than 7 months while BBPWID who are self employed are 0.029 times less likely to access STI treatment more than those that are employed.

Conclusion: MSM and BBPWID access STI treatment care from a wide range of available health facilities and the barriers to accessing treatment of STI by this key population should be taken into consideration while planning for strengthening the HIV prevention services.

Key words: MSM, HIV, IDUs, BBPWID, Access to STI treatment, RDS

Word count: 431

CHAPTERONE

Introduction

1.1 BACKGROUND

Injecting Drugs Users (IDUs) and Men who have Sex with other Men (MSM) are found in every race. culture. religion. community and profession (Mathers et al., 2010).In sub Saharan African. IDUs/MSM have only recently been recognized within the context of HIV/AIDS even though there is historical evidence to show that same sex practices and injecting drug use have always been present in Africa countries(IBBSS 2007).

IDUs and MSM globally,are discriminated against on the grounds of their sexual orientation and injecting drug practice. This manifests assexual abuse and violent attacks,increasingly exposing them to risks of mental illnesses such as trauma, depression, and anxiety. Studies have also shown that these populations usually have limited or poor access to health care servicesespecially in Sub-Saharan African region [Lung. (2009);Palmateer et al., (2010);Adebajo et al (2012); Desmond (2013)].

IDUs and MSM are regarded as STI/HIV high risk group due to elevated biological risk of STI/HIV transmission through unprotected anal sex, multiple sex partnerships. and the potential for riskier sexual behavior due to the stigma and discrimination attached to male-to-male sex among others and injection practices associated with IDUs like unprotected virginal sex mostly due to drug influence, needle and syringe sharing (IBBSS 2010). The Joint United Nations Programme on HIV/AIDS have also reported that 10% of new HIV infections are as a result of injection drug use (UNAIDS. 2007).

In Eastern European countries and in some parts of Southern and Southeast Asia, the proportion of new STI/HIV infections resulting from IDUs is estimated to be as high as between 75%-80% (France de Bravo et al., 2008). Thus apart fromSub-Saharan African countries, IDU/MSM accounts for as much as 30% of new HIV infections worldwide (Mathers et al., 2008).

In Sub Saharan Africa, report indicates that the population of both IDUs and MSM are increasing (Mathers et al., 2008). Such increase has the potential for driving the HIV epidemic within countries in the region. Djomand*et al*(2010) has reported that the prevalence of HIV varied from 4.2% in Nigeria to 15.9% in the Gambia among IDUs, whereas it ranged from 9.8% in the Gambia to 17.2% in Nigeria for MSM.

In Nigeria, the HIV Sero-prevalence among MSM and IDUs are 17.2% and 4.2% respectively compared to 3.4% for the general population (IBBSS, 2010). In Lagos for example, the recent Integrated Biological and Behavioural Surveillance Survey (IBBSS, 2010), reported HIVSero-prevalence of 15.8% and 3.0% for MSM and IDU respectively. These estimates were still higher than 2.2% reported for the general Lagos population by NARHS 2012. Moreover, the prevalence of self reported STI symptoms (unusual genital discharge, anal discharge and genital ulcer/sore)has been reported as8.3%, 5.4% and 3.3%respectively among MSM and 12.6%, 4.3%, 4.2% respectively among IDUs(IBBSS, 2010).

Although the population of MSM and IDUs is estimated to be small, they often serve as a bridge to the general population and are thus responsible for over 25% cases of new STI infection nationally (IBBSS 2010). For example, while about 50.8% of MSMs and 61.0% IDUs in Nigeria have an average of two female girl friends, 10.6% of MSM and 31.8% of IDUsalso maintain a minimum of three female commercial sex partners (IBBSS 2010). Similarly, most male and female IDUs have also been reported to engage in transactional sex to purchase their drugs, while 35.9% of MSM have engaged in anal sex for financial returns – Male sex workers (IBBSS 2010).

The high prevalence of STI/HIV among IDUs and MSM have been linked not only to risky sexual behaviourand injection practice among this group but also to poor access to health care services and lack of knowledge of the associated risk factors (Reid, 2009. IBBSS, 2007). STI/HIV services are always the first point of entry for any HIV prevention intervention and this group is not accessing it as will be desirable. This is unfortunate given that the prevalence of HIV and other STIs are highest among this group compared to the general population and is contributing to the burden of STI/HIV in the general population.

1.2 PROBLEM STATEMENT

The existing information shows that IDU and MSM do not use health services as often as would be desirable because of stigmatization by health workers and effect of existing policies/laws (Onoride et al 2013). There is also little or no reported literature that has focused on MSMand bunk based IDUs. While most MSM have more than one male sex partnerin addition to having girl friends, bunk based IDUs are exposed to injecting and sexual risk, through casual sharing of syringe and group injection compared to other IDUs who visit the bunk only during drug injection (MOT, 2012).

Access to health care service by these high risk groups is of Public health importance. since there is a connection between them to the general population with respect to spread of STIs/HIV infections. Studies have shown that the STI access rates amongst MSM and BBPWID is very low, the only report available for Lagos, shows that only 20.0% of IDU seeks treatment while none was reported for MSM (IBBSS 2010). Therefore, many STI positive MSM and Bunk based IDUsdo not know their status and are thus vulnerable to HIV.

A few studies evaluating access to STI services among MSM and IDU populations have documented limited access due to unavailability of services and other structural barriers such as widespread stigma, discrimination and poverty (Moreau et al. 2007;Onyango-Ouma et al. 2005). Although,barriers on access to STI treatment serviceshavenot been documented for a typology of bunk based IDUs. This study therefore aimed at determining the prevalence of STI among MSM and BBPWID and common barriers to accessing quality STI treatment services.

1.3 JUSTIFICATION OF STUDY

Despite the limitations noted in studies on MSM/IDU in Africa, the current body of evidence across the content clearly establishes that there is widespread existence of MSM and IDU groups, and that they are at high risk of acquiring HIV due to behavioral, social, cultural, and structural factors (Desmond et al 2013).

To date, there is limited information available on the effectiveness of interventions aiming to reduce STI risk behaviors among African MSM. In Senegal, a pre-post intervention study—using snowball recruitment methods—reported increases in STI/HIV testing and consistent condom use after implementation of MSM peer education programs (Moreau et al. 2007). A similar study in Mombasa used a more rigorous time-venue sampling of male sex workers to measure the impact of peer education. While the Mombasa study found statistically significant improvements in consistent condom use, use of water-based lubricants, and HIV knowledge; the interventions had limited reach among the total estimated population of male sex workers. The authors thus suggested that more comprehensive interventions are likely needed to effectively reduce incidence among male sex workers and also increase demand for treatment assess in Mombasa (Geibel, King'ola, Temmerman & Luchters 2012).

There have been very few studies that have reported on service coverage and efficacy of interventions targeting MSM in Africa. This gap is related to general lack of health programs targeting MSM due to lack of prioritization and the challenging social, political and legal environments. In addition, even when countries are willing to develop programs for MSM and IDUs, policy makers may not be certain of the appropriate evidence-based package of interventions leading to procrastination in programming. Overall, the few studies that have evaluated access to HIV services among MSM and IDU populations have generally documented limited access due to unavailability of services and other structural barriers such as widespread stigma and discrimination that prevent this group assessing health services especialy STI treatment (Moreau et al. 2007; Onyango-Ouma et al. 2005).

There have been very few studies that have reported on service coverage and efficacy of interventions targeting MSM and IDU in Africa. This gap is related to general lack of health programs targeting MSM due to lack of prioritization and the challenging social, political and legal environments. In addition, even when countries are willing to develop programs for MSM, policy makers may not be certain of the appropriate evidence-based package of interventions leading to procrastination in programming. Overall, the few studies that have evaluated access to HIV services among MSM and IDU populations have generally documented limited access due to unavailability of services and other structural barriers such as widespread stigma and discrimination that prevent this group assessing health services especialy STI treatment (Moreau et al. 2007; Onyango-Ouma et al. 2005).

Currently, this trend seems likely to improve with increasing recognition of the need to better understand the local diversity of STI burden and transmission dynamics in countries. Specifically, UNAIDS has advocated for use of new epidemiological tools such as the epidemiological modes of

transmission model to help countries get better insight on sources of new infections and the role of various subgroups in HIV transmission even in generalized epidemics (Gouws.White,Stover&Brown2006). Subsequently, a number of STI programs have reviewed their national responses to include strategies targeting MSM after realization of the epidemiologic importance of these groups and the inadequacy of the current responses (Geibel et al. 2010).

There is paucity of information on the level of access and quality of STI services available to MARPs in Nigeria. With growing evidence of the epidemiologic importance of MSM/IDUs in the Sub Saharan African region, particularly in Nigeria,it is therefore important for these HIV high risk groups to know their STI/HIV status, while facilitating access to care, support, and treatment.

This study therefore sought to provide insight into the level of knowledge and access of STI services among bunk based IDUs and MSM. It is hope that findings will be useful in planning. monitoring and evaluating the success of the intervention programs targeting these groups in Lagos State.

1.4 RESEARCH QUESTIONS

1. What are the burdens of STI among bunk based IDUs and MSM?
2. What is the level of access to health care services by IDUs and MSM?
3. What are the barriers toaccessing STI treatment for HIV high risk groups?
4. What are the factors that motivate HIV high risk groups to seek STI treatment?
5. What is the perceived quality of STI treatment available to HIV high risk groups?

1.5 OBJECTIVES

Broad Objective:

This study aimed at describing the burden of STIs and identifying key factors associated with STI treatment services uptake among HIV high risk groups in Lagos State, Nigeria.

Specific Objectives:

1. To identifycommon STI symptoms among Bunk based IDUs and MSM
2. To determine the knowledge of STI prevention strategies among to HIV high risk group.
3. To describe STI health seeking behaviour among IDUs and MSMin Lagos State.
4. To identify the factors associated with STI treatment services uptake among HIV risk groups in Lagos State

CHAPTER TWO

LITERATURE REVIEW

Health-seeking behavior is a highly complex and poorly understood subject, particularly in developing countries, where competing systems of traditional, informal and Western medicine co-exist.Evidence from some developing countries suggests that the majority of adolescents high risk population who have tested positive for STIs or reported STI symptoms first try to treat their infections themselves or seek treatment from non-professional providers (e.g., traditional healers, patent medicine sellers), and only turn to public health clinics or formal health care providers as a last resort.For example, according to a study in Ibadan and Lagos, adult MSM with self-reported STIs preferred to seek treatment from a pharmacy, followed by a local healer (Adebajo et tal 2012). Also in Zambia, male and female PWID went to clinics only after failing to get traditional medicine from a traditional or spiritual healer or other private practitioner, or if traditional treatments did not work(Muraguri et tal 2012).

There are specific reasons why it may be difficult for high risk group to seek treatment for STIs, particularly in formal health care settings. First and foremost, many adolescents lack knowledge and information about infections especially STI which is more prevalent among high risk group. According to the 2003 Nigerian Demographic and Health Survey, more than 70% of 15–19-year-PWIDs and 54% of same-aged MSM had no or poor knowledge of any STI.

In other African settings, high risk population were especially uninformed about STIs, and had difficulty distinguishing between normal and abnormal vaginal/anal discharge.In addition to these knowledge and information barriers, many adolescents simply prefer not to get treatment from formal health care providers. According to several studies, high risk group often feel unwelcome, perceive health care providers as being rude, or are refused services.Adolescents report other

barriers to seeking care at public health facilities, including cost, the fear that services are not going to be confidential and the fear of meeting their parents or other adults they know at the health care facility.

In Senegal, a pre-post intervention study—using snowball recruitment methods—reported increases in HIV testing and consistent condom use after implementation of MSM peer education programs (Moreau et al. 2007). A similar study in Mombasa used a more rigorous time-venue sampling of male sex workers to measure the impact of peer education. While the Mombasa study found statistically significant improvements in consistent condom use, use of water-based lubricants, and HIV knowledge; the interventions had limited reach among the total estimated population of male sex workers. The authors thus suggested that more comprehensive interventions were likely needed to effectively reduce incidence of STI among male sex workers in Mombasa by increasing assess to treatment for STI and other opportunistic infection (Geibel, King'ola, Temmerman&Luchters 2012).

Study, describing data from the 1999 Population-based youth high risk behavior survey, showed results with only 33.5% of sexually active male high risk group reported being counseled on pregnancy, STI and HIV prevention during their last anal examination. This is in contrast to 61.4% of sexually active general population reporting having received the same services from health facility. These studies assessed service delivery to young high risk men prior to or concurrent with the release of guidelines promoting adolescent clinical preventive services and male reproductive health.

2.1 Health Service utilization by Injecting Drug Users (IDUs)

It has been reported that 10% of new HIV infections in Nigeria is as a result of injection drug use (UNAIDS, 2007). In Eastern European countries and in some parts of Southern and Southeast Asia,

the proportion of new STI/HIV infections resulting from IDUs is estimated to be as high as 75%-80% (France de Bravo et al., 2008). Excluding sub-Saharan African countries. IDU accounts for as much as 30% of new STI infections including HIV worldwide (Mathers et al., 2008). Although IDU is widely implicated in STI/HIV transmission, little research in sub-Saharan Africa has focused on this issue. More so, bunk based IDUs (injection drug live in bunks, away from their homes) are further exposed to risk and no study have captured this group which make up almost 75% of drug user community. Bunk based drug users indulge is several social vises to meet up their drug needs like stealing, commercial sex workers, street begging, pick-pocket, "area boy", armed robbery etc. Most of them have been neglected by their families; those with wives and children have lost them to drug. Despite this unfortunate situation, reports indicate that IDUs are increasing in the region by the day (Mathers et al., 2008), thereby expanding the brigde to the general population linking people who inject drugs (PWID) to the well-established HIV epidemic in Africa.

Although most STI/HIV infections in the region occur as a result of unprotected heterosexual sex and mother-to-child transmission, current high-risk trends in IDU and few services targeted to IDU especially BBPWID position this mode of transmission to become a significant threat in a region that is over burdened by HIV (FMOH Nig. 2008). While data available on IDU are sparse, evidence has suggested that PWID engage in high-risk injection and sexual exposures, and have high rates of STI/HIV infection (Reid, 2009). Low STI testing uptake and lack of knowledge of the risks associated with injecting drugs may also contribute to the emerging problem. We present a review of IDU in Nigeria as well as a discussion of STI risk, and STI/HIV treatment uptake by this population that solely dwell in the drug bunk.

IDU is a significant contributing factor to new STI infections in many parts of the world, including Eastern Europe, South America, and East and Southeast Asia (Mathers et al., 2008; Williams et al.,

2007). and has been dramatically rising in sub-Saharan Africa in the past 10–15 years (Affinnih, 2002). Trends in IDU in recent years in Africa suggest that by 2015, 0.08% of the East African population, 0.19% of the East-Central African, and 0.24% of the Southern African populations will inject heroin. This nears, and may surpass, rates found in the United States, where heroin use appears to have stabilized at around 0.2% (United Nations Office for Drug Control and Crime Prevention [UNODCP], 2011). By comparison, the prevalence of opiate injection use in Eastern Europe, the highest in the world, is estimated to be between 0.8% and 1.0% (UNODCP, 2011).

Despite the rapid rise in IDU, targeted prevention and care services have not grown in proportion (Mathers et al., 2010). In the United States, more than 13,000 specialized drug treatment centers provide services to PWID in addition to other forms of inpatient and outpatient treatment programs, but in sub-Saharan Africa, less than 1% of drug users have access to treatment services (Mathers et al., 2010).

The World Health Organization (WHO), UNODCP, and UNAIDS (2008) have recommended a comprehensive package of nine interventions to decrease HIV risks to PWID:

I. Syringe Exchange Programs (SEPs);

II. Opioid substitution therapy and other drug treatment;

III. STI testing, Counseling and Treatment;

IV. Provision of antiretroviral therapy (ART) for people living with HIV (PLWH);

V. Prevention and treatment of sexually transmitted infections;

VI. Condom programs for PWID and their sexual partners;

VII Targeted information, education, and communication for PWID and their sexual partners;

VIII. Vaccination, diagnosis, and treatment of viral hepatitis;

IX. Prevention, diagnosis, and treatment of tuberculosis.

However, the region continues to be unprepared to address STI/HIV risks related to IDU while IDU dwelling in the bunk are completely neglected. Lack of knowledge about the risks related to drug injection, lack of targeted STI/HIV prevention messaging, and stigmatization contribute to preventable risks taken by PWID (Needle, Kroeger, Belani, & Hegle, 2006). Moreover, lack of access to sterile injecting equipment makes HIV prevention difficult, even when PWID have proper knowledge of transmission prevention (Beckerleg, Telfer, & Sadiq, 2006; Reid, 2009).

Risks encountered by PWID are compounded by a lack of HIV testing uptake. HIV testing not only informs serostatus, letting individuals make conscious choices to protect themselves, their partners, and their children, pre- and post-test counseling also provide HIV education and individualized risk reduction counseling, even for people who are not infected with HIV (Hendriksen et al., 2009). In addition, HIV testing helps engage HIV-infected people in early care and treatment, which can reduce HIV-related morbidity and mortality and reduce transmission and incidence (Montaner et al., 2010). This is especially true when counseling is a part of the testing process, providing the patient with education about transmission and prevention in addition to giving information about HIV status (Meiberg, Bos, Onya, & Schaalma, 2008). Unfortunately, STI/HIV testing and treatment is not a common practice for PWID in sub-Saharan Africa (McCurdy, Ross, Kilonzo, Leshabari, & Williams, 2006; Meiberg et al., 2008; Williams et al., 2007; Williams et al., 2009). Although it is difficult to quantify the proportion of PWID who are tested for STI/HIV throughout the world, countries in Western Europe report the highest proportion of PWID with HIV on ART (89% coverage of PWID who need ART; Mathers et al., 2010). Countries in Eastern Europe report the lowest ART coverage, with less than 1% of PWID with HIV accessing necessary medications

(Mathers et al., 2010). Testing identifies infection and is a first step to engaging patients in HIV care and the associated counseling that can decrease transmission risk.

In 2011 IBBSS, the highest HIV prevalence among IDU was found in FCT (9.3%) and Kaduna (5.8%) closely followed by Oyo (5.1%) while Lagos is 3.0%. A total of 20% of IDUs surveyed in Lagos had sex with FSWs, and they also reported low condom use while no specific study have focused on drug injectors that dwell in the bunk.

2.2 Access to STI Treatment by PWID

SEPs reduce HIV transmission and are linked to reductions in self-reported injecting risk behavior (Palmateer et al., 2010). Despite this, sub-Saharan Africa has the lowest rate of clean syringe distribution in the world, with an estimated 0.1 clean syringes distributed per injector per year (Mathers et al., 2010). Mauritius is the only country in the region that has a government-sanctioned SEP program (Reid, 2009). Pharmacy syringe sales can also have positive impacts on injecting risk behavior (Palmateer et al., 2010) and are legal throughout sub-Saharan African nations. Nevertheless, PWID in Tanzania and South Africa have reported being denied syringe access at pharmacies (Pluddeman et al., 2008; Reid, 2009). Most countries in sub-Saharan Africa focus on harsh legal penalties for drug use (Affinnih, 2002). The consequences of these policies not only increase the stigma associated with drug use, further marginalizing this population, but also restrict access to drug treatment and services (Affinnih, 2002).

While harm-reduction policies can potentially reduce risks related to STI/HIV transmission for PWID, the most effective prevention is cessation of injecting and its associated blood exposures (UNAIDS, 2007). Drug treatment programs, however, are scarce and costly in sub-Saharan Africa (Stimson et al., 2006; Wechsberg et al., 2009). For example, in 2007 there were five drug treatment

programs in Kenya, which mostly relied on inconsistent volunteer workers and provided no services for women (Sullivan, Levine, Charwarski, Schottenfeld, & Fiellin, 2007). In South Africa, in a study of 506 female drug users, less than 20% reported any awareness of drug treatment programs. Many PWID who were aware of drug treatment services reported that access to publicly funded treatment was difficult and lengthy, while private drug treatment programs were unaffordable (Parry, Petersen, Carney, & Needle, 2010). Effective opiate substitution therapies, such as methadone and buprenorphine, have been virtually unavailable in the region (Mathers et al., 2010; Parry et al., 2010). The only countries in sub-Saharan Africa that offered some type of opioid substitution program were Kenya, Mauritius, Senegal, and South Africa (Mathers et al., 2010). The limited services in the region, coupled with the criminalization of drug use, do little to reduce HIV risks faced by PWID in sub-Saharan Africa and do not meet the global recommendations of the WHO, UNODCP, and UNAIDS (2008). The most effective programs aimed at reducing HIV risks for PWID co-locate HIV prevention services with other services for drug users (WHO, 2006).

2.3 STI Prevalence, Knowledge, Stigma, and Testing/treatment Uptake by PWID

Relatively little is known about HIV prevalence in PWID in sub-Saharan Africa. South Africa is one of the only countries with systematic surveillance of IDU and HIV infection (Mathers et al., 2008; Needle et al., 2006). Data from other countries are limited by lack of systematic sampling, small sample sizes, and self-reported HIV infection. HIV testing is often refused and, as a result, few studies have reliable HIV data and none have reported HIV incidence in the region (Mathers et al., 2008).

Despite this, evidence indicates a potential HIV epidemic in PWID in sub-Saharan Africa. The extremely high proportions of PWID who are infected with HIV range from 5% in Nigeria

(Adelekan & Lawal, 2006) to near 50% in Tanzania (Williams et al., 2009). For comparison, in Russia, approximately 40% of PWID are infected with HIV (Mathers et al., 2008).

In sub-Saharan Africa, the high proportion of PWID who are also PLWH is coupled with a lack of knowledge about the risks associated with drug use. In a sample of 508 drug users (38.9% self-reported PWID), Dahoma and colleagues (2006) showed that fewer than 50% of subjects in Zanzibar could relate any negative health consequences to drug use. In Nigeria, only 25% of IDU reported an understanding of the HIV risks related to use (Adelekan & Lawal, 2006). In addition to lack of knowledge about risks associated with IDU, fear of getting tested and receiving a diagnosis of HIV impacted rates of testing (Hendriksen et al., 2009; Matovu & Makumbi, 2007; Meiberg et al., 2008).

Stigma, a complex process of negatively labeling people who are "different," resulting in devaluation and discrimination, has been widely implicated in reluctance to get tested for HIV (Hendriksen et al., 2009;Matovu & Makumbi, 2007; Meiberg et al., 2008). Lack of knowledge about HIV transmission, belief that an HIV diagnosis meant immediate death, and the fear of results not being confidential, all contributed to low rates of HIV testing (Meiberg et al., 2008). Fears of the impact an HIV diagnosis might have on family and community also contributed to a lack of testing uptake (Hendriksen et al., 2009). There is a great deal of stigma related to being a PWID, and the fear of adding the burden of HIV-related stigma could also be a restrictive factor for PWID to seek HIV testing (Parry et al., 2010). Female PWID, in large part due to HIV testing in antenatal clinics, are far more likely to have been tested for HIV and have more knowledge about HIV risk than men (Hendriksen et al., 2009). However, as males account for 66%–93% of all PWID in sub-Saharan Africa, the vast majority of PWID in the region are not receiving education about risks or individualized counseling, nor are they learning their HIV status (Accijas et al., 2006). This

significant gap can have devastating consequences, as has been witnessed in other parts of the world. Ignoring the needs of PWID in sub-Saharan Africa may decimate the gains that have been made in the fight against HIV.

A study in Nigeria shows that one third of female IDU reported selling sex. Female IDU sell sex to obtain money to purchase drugs. Careful attention need to be paid to sexual transmission among both male and female groups, as many have links with the wider population. In particular, female IDU should be targeted with innovative HIV prevention messaging. IDU had low level of knowledge of HIV prevention transmission due to high level of misconceptions about HIV transmission. however high proportion of them (82.6%) used sterile injecting equipments. Condom use at last commercial sex was high compared to last sex with girlfriend though only a fifth of them considered themselves at risk of HIV.(IBBSS 2011)

2.4 Health service peculiar to Male who have Sex with Men

2.4.1 STI testing and treatment

STI treatment and access to services like HIV testing and counseling (HTC) is an entry point to STI/HIV prevention, care, and treatment and forms one of the key interventions provided as part of package by most national HIV programs. Although HIV testing services were designed for heterosexual populations, there are now limited government and non-governmental specialized STI and opportunistic treatment programs available to MSM in some locations including Kenya and South Africa and Nigeria (National AIDS Control Council of Kenya & Population Council 2009). Various studies have shown that the STI/HIV testing and treatment rates amongst MSM is very low, resulting in many cases of STI and HIV positive MSM not knowing their status. For example, one recent study found that the number of HIV positive MSM who knew their HIV status was only

4.7% in Malawi, 17.4% in Botswana, 59.2% in Namibia and 19.3% in Nigeria (Baral et al. 2009). The low testing and treatment assesment rates among MSM are partly due to general lack of targeted services and other barriers created by unfavorable social, political and legal environments. Many men need access to effective testing for STIs (including HIV/AIDS) and treatment. In Benin, Ethiopia. Gabon, Malawi, Uganda and Zimbabwe, more than two-thirds of all men 15–19 (and similar proportions of teenage women) who have never been tested for HIV say they would like to be, and very small proportions of men 15–19 have ever been tested for HIV—only 1% in Ethiopia, 3–4% in Benin, Uganda and Zimbabwe, and 7–9% in Malawi and Gabon. Some MSM who become infected with STIs try to treat themselves (Baral, S., 2012). Some buy the correct drugs but take them in an incorrect manner, which is dangerous because leaving STIs partially untreated can lead to serious complications. Others seek care from pharmacists; patent medicine dealers, some of whom sell useless remedies; herbalists; and providers of traditional health care, who have had no formal training. Some MSM in developing countries say they prefer these sources because they are affordable. In small scale studies conducted in Tanzania, Kenya, Nigeria and Zambia, men have claimed that traditional healers are more respectful and less judgmental than private doctors or health care workers in primary health clinics (Baylies, C. 2002)).

MSM need and often want a wide range of sexual and reproductive health support, information and services at different stages of their lives.

2.4.2 Behavior Change Interventions

To date, there is limited information available on the effectiveness of interventions aiming to reduce STI risk behaviors among African MSM. In Senegal, a pre-post intervention study—using snowball recruitment methods—reported increases in STI/HIV testing and consistent condom use after implementation of MSM peer education programs (Moreau et al. 2007). A similar study in

Mombasa used a more rigorous time-venue sampling of male sex workers to measure the impact of peer education. While the Mombasa study found statistically significant improvements in consistent condom use, use of water-based lubricants, and HIV knowledge; the interventions had limited reach among the total estimated population of male sex workers. The authors thus suggested that more comprehensive interventions are likely needed to effectively reduce incidence of STI among male sex workers and also increase demand for treatment assess in Mombasa (Geibel, King'ola, Temmerman & Luchters 2012).

More is now known about MSM in Nigeria since the 2007 IBBSS. In 2007 the highest prevalence of HIV in Lagos is (25.4%), followed by Kano (11.7%) (FMOH, 2007). In 2011 MSM in FCT had the highest HIV prevalence (37.6%) followed by those in Kaduna (16.2%) while Lagos is 15.8%. Although MSM showed adequate levels of HIV prevention knowledge, consistent use of condoms, multiple sexual partnering, unprotected anal sex was low. Risk of STI infection and transmission is high among MSM, as condom use is generally low and the majority of MSM surveyed in the 2011 IBBSS reported having also had sex with female partners in the 12 months prior to the survey.

2.5 Risky Behaviour Among MSM in Nigeria

According to IBBSS 2011 study done in Nigeria reported highly risky sexual behaviour among MSM, as condom use in anal sex was low; relatively the same for both paying and non-paying partners, and over one third of the respondents had sold sex in the past six months. Half of MSM surveyed had sexual relationship with at least one female partner in 12 months preceding the survey, suggesting significant bridging with female populations including girlfriends and casual partners and another tenth that patronised FSW. Consistent condom use was generally low. Of those MSM that sold sex, only about a third used condom consistently in the last 12 months preceding the survey.

MSM who had two or more sexual partners in a recent one-year period and who did not use a condom at last intercourse can be considered to have an unmet need for STI prevention. The proportion of all MSM 15–54 with this type of unmet need is higher in Latin America and the Caribbean (11–18%) than in Sub-Saharan Africa (4–10%). In five of the nine focus countries, MSM who have an unmet need for condoms for STI protection are more likely to be single than married, especially in the Dominican Republic—14% vs. 4% (Auvert, B., Taljaard, D., 2012). In Zimbabwe and Ethiopia, those in need are more likely to be married than single, and in Nigeria, they are equally likely to be unmarried as they are married. Men in the United States also have considerable levels of unmet need for STI treatment and prevention: Of all MSM aged 18–54, 8% are in need and unmarried and 4% are in need and married. In some respects, this measure of unmet need is a minimal one (Auvert, B., Taljaard, D., 2012).: It does not take into consideration the possibility that some of the MSM with multiple partners who used a condom at last intercourse did not use it consistently throughout the year or did not always use it correctly.

Furthermore, some MSM may have only one partner, but that partner may not be monogamous. In other respects—if all the partners of a man with multiple partners are uninfected, or if men selectively use the condom with highrisk partners (but not with their spouse or trusted male partner)—this measure will overstate unmet need for STI prevention/treatment. (Begay, O., Jean-Pierre 2011)

MSM Needs are being recognized, but are not being met despite widespread recognition that men need better information and health services if they are to lead healthier sexual and reproductive lives. there has been little effort to provide or develop such information and services

2.6 Obstacles in addressing MSM needs in Lagos

1. First, the political will to translate advocacy into action has so far been seriously absent. There has been very little effort to identify and implement practical ways of helping MSM understand that safer sex is in their own best interests. Although a number of pilot programs for men have been tried, most have not been rigorously evaluated, and few have been expanded to reach a wider typologies of MSM client base.(Adebanjo et al 2012)

2. Second, while there has been strong rhetoric at international conferences and in policy discussions urging countries to pay more attention to men's needs, the allocation of funding and the training of health care providers and educators have not followed.

3. The existing same sex marriage law in Nigeria have further made MSM to go underground and more difficult to access health services as it increased stigmatization by health givers to this group.

4. Specific logistic challenges face countries that want to move from rhetoric and broad recommendations to specific programs, and from pilot projects to services available at the national level: These multi-facet challanges had raised the following question which is yet to be addressed.

- Who are the health care providers and educators who could be tapped to offer the services that MSM need?
- Are these professionals sufficient in number, and are they properly trained to undertake necessary activities? If not, how can this training be funded and implemented?
- What other institutions—nursing and medical schools, regular schools and colleges, private companies, nongovernmental organizations, religious groups—can be enlisted in activities that would lead to increased training in MSM service provision?

Moreover, creating more open societies in which MSM can naturally and comfortably manage their own sexual and reproductive health represents a complex cultural challenge in many parts of the world. Thus, improved sexual and reproductive knowledge and health services for MSM have the potential to create such wide beneficial ripple effects for their families and communities that the wisdom and cost-effectiveness of helping MSM can scarcely be in doubt. (Begay, O., Jean-Pierre 2011)

2.7 Health services to MSM and the Millenium Development Goals MDGs

The Millennium Development Goals do not specifically mention Men in the eight Millennium Development Goals (MDGs), spelled out at the Millennium Summit of the United Nations in September 2002, and are highly relevant as determinants of policy and funding for all aspects of socioeconomic development, particularly in the developing world. The MDGs are therefore also pertinent to the prospects of improving attention to men's sexual and reproductive health. The MDGs are very broad-reaching and important: to eradicate extreme poverty and hunger; to achieve universal primary education; to promote gender equality and empower women; to reduce child mortality; to improve maternal health; to combat HIV/AIDS, malaria and other diseases; to ensure environmental sustainability; and to build a global partnership for development).Yet, it is striking that the MDGs do not mention the need for attention to other STIs other than HIV/AIDS particulary affecting MSM (WHO, 2012). This omission should be rectified, given the known links between STIs and spread of HIV and other opportunistic infection. Additionally, family planning should surely receive greater prominence, given the importance of the prevention of unplanned pregnancies to the health and well-being of women and children, and to the economic well-being of men and their families. Men receive no special mention in any of the MDGs. For example, the third

goal states the need to increase the proportion of women employed in the nonagricultural labor sector, but there is no reference to efforts to reduce male unemployment in any part of the world. This omission needs to be addressed, given the links revealed by research in both developing and industrialized countries between men's uncertain and often bleak economic status and their likelihood of engaging in unsafe behaviors—from drug and alcohol misuse to weapon carrying, fighting and unprotected sex (anal and virginal). In future years, the MDGs and donor contributions to the Global Fund to Fight AIDS, Tuberculosis & Malaria are likely to increase support for HIV/AIDS programs (UNAIDS, 2002). However, funds for family planning and other areas of reproductive health may decline. Because sexual and reproductive health services, including HIV/AIDS programs, are so highly interrelated, it is difficult to account separately for donor assistance directed to any single component of services. As a consequence, family planning and reproductive health programs, including services specifically for men, may be obliged to work much more closely with STI services than they ever have before.

Much More Research Is Needed By making evident the gaps in information about MSM sexual and reproductive health needs, this report highlights the need for further work. Information is particularly lacking on MSM attitudes toward sex, marriage and reproduction, as well as their motives for some behaviors—for example, frequenting sex workers without using condoms in settings where STIs (including HIV/AIDS) are prevalent. In Nigeria we still know very little about MSM sexual and reproductive behavior, health needs and specific intervention needs. Given what we have learned about the links between men's education and their sexual and reproductive behavior, there is a great need for more research into the cultural, social and economic factors associated with MSM sexual and reproductive behaviors, in all parts of Nigeria.

Services targeted at reducing the spread of STIs among high risk group depend on the following features:

1. Well-functioning primary health care structure;
2. Reliable drug supply;
3. Clinics for diagnosis and treatment;
4. Methods of notifying sexual partners of STI patients, so that they, too, can be tested and treated;
5. Counseling to help infected people understand their illness, take medication correctly and prevent future infections;
6. Training for health care practitioners involved in STI services and counseling;
7. Readily and cheaply available condom supplies;
8. Mass media communications about STIs to encourage infected people to seek treatment, to promote the use of condoms and to support mutual monogamy; and
9. Surveillance systems to identify the most prevalent STIs and to track the effectiveness of antibiotics used to treat them.

2.8 Current burden of STI/HIVamong MSM in Lagos Nigeria

Nigeria with an estimated population of over 167 million people in 2011 has the second highest burden of HIV and AIDS in sub-Saharan Africa. The modes of HIV transmission study undertaken in Nigeria attributed 23% of new infections to three most-at risk populations (comprising men who have sex with men (MSM), injecting drug users (IDUs) and female sex workers (FSW's) with MSM alone contributing about 10% (IBBSS, 2010). HIV prevalence among MSM is the second highest in Nigeria (4) after female sex workers, yet funding and policies for HIV prevention

interventions, care and treatment are severely inadequate in quantity and quality (IBBSS 2010). Without adequate and appropriate interventions, MSM will continue to be at risk for HIV transmission and infection. MSM in Nigeria continue to experience extremely high levels of stigma, discrimination and criminalization which result in them becoming highly vulnerable to STI/HIV (Adebajo et al 2012). This situation increased internalized homophobia making MSM more hidden, using more discreet methods to meet and socialize with their peers and thereby becoming harder to reach with appropriate prevention interventions. The literature indicates that MSM report the experience of varying degrees of internalized homophobia, defined here as self-hatred and shame resulting from negative stereotypes, beliefs and prejudice about homosexuality leading to devaluation and internal conflicts. Homophobia towards oneself is found to be inextricably linked with broader social attitudes and norms that stigmatize and discriminate against MSM and homosexuality.

Although in western societies, negative stereotyping against men who have sex with men has reduced significantly, this does not hold true for all countries, which explains the variation of internalized homophobia across societies, cultures and contexts. Hooghe (2011), in his study, found widespread levels of homophobia among Belgian adolescents despite various legal reforms in the country against discrimination of gay women and men. Andersen and Fetner (2008) provided a macro view to tolerance and acceptance of MSM. They proposed that as national income inequality increases, tolerance to homosexuality declines. They also provided evidence to show that as economic development increases, tolerance increases. This may explain why the professional and managerial classes are generally more tolerant to homosexuals than the working class.

Internalized homophobia has been reported to be associated with relationship satisfaction, extent of attraction to men and women, membership and length of social time spent with gay groups,

disclosure of HIV status and identity13-15. This indicates the need to design programs that address the issue. In addition, the presence of internalized homophobia has been found to be negatively linked to level of awareness of available HIV prevention services in the community, a change in perceptions of condom use self-efficacy and the extent to which people feel similar to and relate with other members of their community. Unusual genital discharge was the most common STI symptom reported by MSM (8.3%) in the last 12 months preceding the survey, with genital ulcer/sore being the least reported (3.2%), Unusual genital discharge for IDU-12.8% (Adebanjo et al 2012)

CHAPTER THREE

METHODOLOGY

3.1 Study Area

The study was conducted in five Local Government Area in Lagos Nigeria. It has a population of over 17.5 million and remains the commercial and industrial hub of Nigeria, attracting large numbers of both domestic and international migrants. It is situated close to major sea ports and from natural resources of oil, natural gas, coal, fuel wood and water which attracts western social life. There are good number of MSM and IDU in Lagos but data have not been gotten of the estimate of the population size. Recent survey by World Bank funded Local Epidemiological Appraisal 2013 shows that IDU and MSM are found in major drug bunks and hot spot respectively. Risky activities of this group are promoted by presence of hotels (brothels and Motels), social amenities. clubs, availability of steady drug supply etc. The first HIV and AIDS case in Lagos State general population was recorded in 1986, and since then there has been a gradual but steady increase in the number of people testing positive for HIV and other STI. This could be attributed to the high prevalence of HIV among MSM and IDU who tend to be a bridge to the general population. The ANC survey of 2008 puts the HIV prevalence rate in the state at 5.1% but among MSM is 25% and among IDU is 4%.

3.2 Study Design

This study was a cross-sectional drug bunk/hot spot based study.We enrolled consenting adult drug users and adult men who are currently practicing anal sex of age range in a bunk/hot spot based survey.

3.3 Study Population

3.3.1 Men who have Sex with Men (MSM)

MSM were defined as any man 15 years and above who had engaged in oral or anal sex with another man in the last 12 months preceding the study. This target group is considered to be at a higher risk of contracting and transmitting STI/HIV because of the elevated biological risk of STI/HIV transmission through unprotected anal sex, multiple partnerships, and the potential for riskier sexual behaviour due to the stigma and discrimination attached to male-to-male sex.

3.3.2 People who *inject Drug* –Bunk Based (BBPWID)

BBPWID is defined as any person 18 years and above who has injected drugs recreationally at least once in the past 12 month and are currently dwelling inside or around the drug injecting bunk. This group is considered at higher risk of contracting and spreading STI and other opportunistic infections primarily through the sharing of needles and syringes, as well as probably practicing unsafe sex.

3.4 Sample Size Calculations

3.4.1 MSM

Given the lack of data on assessment of STI and other opportunistic infection among MSM in Nigeria, the HIV prevalence was used to estimate the required sample size. HIV has been linked with other STIs. Estimated HIV prevalence of 5-15.8% was used to calculate the minimum sample size required to estimate the prevalence of HIV with a precision of 5%, and 10% non-response rate. A total of 195 sample size was determined.

$$n = \frac{(Z\alpha/_2)^2 \times pq}{d^2}$$

n= sample size,

p= prevalence =15% ,

d (precision level) =5%,

q= 1-p = 85%,

Z (standard normal deviate) =1.96

$$n = \frac{1.96^2 \times 15(100-15)}{5^2}$$

= 195

N = 195

3.4.2 BBPWID

Sample size was calculated using the formula for estimating sample size for one-sample proportion with a prior prevalence (p) of 3% (IDU) (IBBSS 2010), and precision level (d) of 3%at 95% level of confidence.

$$n = \frac{(Z\alpha/_2)^2 \times pq}{d^2}$$

$$n = \frac{1.96^2 \times 0.03(100-0.03)}{0.03^2}$$

$= 124.2$

N = 124

Assume 10% of non response rate. 1-10/100 = 0.9

124/0.9 = 137.7 ≈ 138

The eventual sample size of 138 for BBPWID was used for the study..

3.5 Sampling Technique

This study was done in five selected LGA in Lagos: Mushin (BBPWID & MSM), Alimosho (MSM), Lagos Island (MSM), Agege (BBPWID), Shomolu (MSM) and Lagos Mainland (MSM)

3.5.1 MSM

MSM are a hidden population for which no sampling frame exists, thus respondent driven sampling (RDS) was employed to recruit respondents. Unlike convenience sampling techniques, the respondent driven mechanism has been widely reported to provide diverse samples of MSM and population based estimates of a specific trait that are asymptotically unbiased (Heckathorn, 1997). It involves the use of peers and compensation for participating and recruiting peers. Efforts were made to diversify the seeds (initial recruits that started the referral system) in the RDS.

Eight seeds were selected. Each seed was given three uniquely coded referral coupons to refer eligible respondent to participate in the study. Each recruit was in turn given three coupons to refer three peers and this continued until the desired sample size was reached. Coupons were limited to three to prevent an over representation of particular traits in the sample, as recommended by

Heckathorn, 1997. Due to the sensitive nature of the study, extra precautions were taken to protect the safety and confidentiality of participants.

3.5.2 BBPWID

The Time and Location Sampling (TLS) procedure was adopted among BBPWID. The TLS is a form of cluster sampling that contains both time and location dimensions.TLS clusters were chosen using a two-stage cluster sampling procedure.

Stage 1: In collaboration with the bunk owners and NGOs that have worked with PWID, a sample frame containing all major drug bunks was compiled. The list contained information on the high- and low-peak day and time-periods, and the estimated number of BBPWID onsite during each period. TLS clusters were defined as the location where BBPWID congregate, the day(s) of the week that constitute peak times, and the number of BBPWID present at each four hour interval. A total of 10 major clusters were selected to reach the sample size.

Stage 2:Individual participants were selected from the total number of BBPWID on the bunk on the day and specified time period through a simple randomization exercise. A total of 125 BBPWID were recruited for the study.

3.6 Study Instrument

A structured questionnaire modified from the MARPs Intervention Registration Form (MIRF) was used to collect information on Socio-demographic characteristics, sexual/injecting risk exposures, health seeking behaviours history, reason for non uptake of STI treatment option available, types of

drug injected, sexual identity, sexual preferences and behaviors, partner characteristics self reported symptoms for STI and opportunistic infections, preferred treatment option and knowlegde of STI/HIV prevention.

The modified MIRF questionnaire was developed as a surveillance tool for monitoring of Behaviour Change Intervention among most at risk populations (MARPs) in Nigeria (IBBSS 2007). Coded coupon was used to recruit MSM respondent by RDS. National intervention referral booklet was used to refer respondent with self reported STI symptoms for treatment. Daily summary booklet was used to colate data at the end of each data collection.

3.8 Pilot Study

A pilot test was done in Ibeju Lekki LGA, a LGA not part of the survey. This involved testing the survey process, including the study instrument and data collection process. Members of the trained research assistance, including my class mates participated in the pilot study. A brief meeting was held to discuss improvements to the study process, methodology and instrument based on the outcome of the pilot.

3.9 Data Collection

Data collection was consistent across target populations. The survey was administered for all target groups through one-on-one, face-to-face interviews in private settings that guaranteed the confidentiality of information provided by the respondent.

The MSM and PWID respondents were interviewed at a designated location agreed with research/ community key informants during the pre-assessment study (while BBPWID was interviewed at the drug dealer lounge of each bunk, MSM respondent were interviewed at MSM Safe Home community centers).

3.10 Study Variables

Outcome Variables:STI service utilization (ever received STItreatment).

Explanatory Variables: Age, gender, level of education, duration of stay in community, type of drug use, sexual partnership,Duration of anal sex and injecting drug use,providers of STI treatment services, motivation for STI treatment uptake, knowledge of comprehensive STI preventive measures, reason for non accessment of available STI treatment services. health providers attitude towards MARPS, Self-reported STI symptoms and drug use history of BBPWID.

3.5 Data Managment and Analysis

Data management plan involved data entry and protection, data cleaning, and data back-up to an external hard-drive.

All analyses were performed using Statistical Package for the Social Sciences (SPSS) version 16 to achieve summary and inferential statistics. Descriptive analyses were conducted for demographic variables including age, marital status, employment, average monthly income and highest educational attainment. Individualized weights based on the outcome variable (STI treatment uptake) and SPSS software for regression analyses (bivariate and multivariate)were generated and interpreted. Results was interpreted as statistically significant at 5% level or less ($p \leq 0.05$).

3.11 Ethical Considerations

Ethical approval for study was obtained from the Ministry of Health Ethical Review Committee. Lagos State.

Informed Consent: Written informed consent was obtained from all participants by research assistants.

Confidentiality: All participants' information was kept confidential by adopting a de-identified approach to data handling, with the use of unique identifiers for study participants.

Beneficence/Non-maleficence: All participants received HIV/STI counseling and recieve free referral to health facilities for uptake of HCT, STI syndromic/treatment. Each participant was given a token gift of an IEC material and condom/lubrica in appreciation of their participation.

Voluntariness: Participation in this research was entirely voluntary. Eligible individuals were assured of their choice to participate in the study or to withdraw at any time.

CHAPTER FOUR

RESULTS

4.1: Socio demographic characteristics of MSM and BBPWID participants

This study enrolled a total number of 195 MSM and 125 BBPWID.

Table 4.1.1 shows the socio demographic characteristics of MSM who participated in the study. The overall mean age of the MSM was 24.94 ± 4.7 years old. There were more MSM aged between 14-30 years than those higher in age, with mean monthly income of 14,843 ± 17,828 naira. About 84.5% of MSM respondent were not married, while 30.1% were self-employed. About 52.8% of MSM respondent had secondary school certificate while 39.4% are graduates.

Table 4.1.2 shows the socio demographic characteristics of BBPWID who participated in the study. The BBPWID respondents included 96.8% males and 3.2% Females, with mean age of 46.65 ±8.182 years.Theaverage monthly income was 30292.45±21454.03 naira, while 64.8% of the respondent were self-employed.

Table 4.1.1: Socio demographic characteristics of MSM

	Frequency (N = 195)	Percent (%)
Mean age ± SD	24.94 ± 4.7 years	
Mean Monthly income	14,843 ± 17,828	
Mean duration of practice	2.5 ± 0.78 years	
Agegroup		
14 - 30 yrs	61	31.6
above 30 yrs	17	8.8
Level of education		
Nil	5	2.6
No formal Education	6	3.1
Primary	4	2.1
Secondary	102	52.8
Tertiary	76	39.4
Marital status		
Married	7	3.6
Cohabit	17	8.8
Never married	163	84.5
Separated	5	2.6
Current employment		
Employed	33	17.1
Self employed	58	30.1
Not employed	44	22.8
Student	56	29.0

Table 4.1.2: Socio demographic characteristics of BBPWID participants

	Frequency (N = 125)	Percent (%)
Mean age ± SD	46.65 ±8.182 years	
Mean Monthly income	30292.45±1454.03	
Mean duration of drug use	2.87± 0.44 years	
Sex		
Male	121	96.8
Female	4	3.2
AGE GP		
14 - 30 yrs	3	2.4
above 30 yrs	121	96.8
Average monthly income		
less than/equal to N20,000	44	35.2
greater than N20,000	62	49.6
Level of education		
Nil	9	7.2
No formal education	27	21.6
Primary	69	55.2
Secondary	20	16.0
Tertiary	9	7.2
Marital status		
Married	79	63.2
Cohabit	2	1.6
Never married	35	28.0
Separated	9	7.2
current employment status		
Employed	27	21.6
Self employed	81	64.8
Not employed	17	13.6

4.2. Characteristics of MSM

Table 4.2 shows the profile of MSM study participants. Result showed thatmore than half of the respondents (57.0 %) reported having their first anal sex before age 18 years, while (51.8%)said they currently have other female sex partners.Majority (73.1%)said they meet male sex partners in other locations aside their location.

Table 4.2: Profile of MSM

	Frequency (N = 193)	Percent (%)
Age at first anal sex		
less 18 yrs	110	57.0
18 - 30 yrs	76	39.4
above 30 yrs	2	1.0
Do you meet male partners in other locations		
Yes	141	73.1
No	48	24.9
Having sex with other female sex partners		
Yes	100	51.8
No	78	40.4

4.3. Pattern of Drug use by BBPWIDs

Results showed the pattern of drug use by the BBPWIDS.The entire participants live in or around the drug bunk community asmajority (92.0%) said they have lived in the community for more than twelve (12) months. Majority (92.4%) of study participant also said they 'hustle' (including street begging, pick-pocket, touting, stealing and thugery) to get money daily for drug purchase, while only a few were engaged in meaningful employment(4.0%) or did businesses (3.2%). The frequency of drug injections showed that majority (88.8%), injected drugs daily, while 7.2% said they injectedonly once weekly. Participants' pattern of drug use includedheroin (38.8%), cocaine (37.8%), Crack (4.8%), Amphetamine (1.4%) and Fortwin (1.0%). (Table 4.3)

Table 4.3 – Distribution of Drug use by BBPWID

	Frequency (N=125)	Percentage %
Duration in the community		
1 - 6 months	5	4.0
7 months – 12 months	5	4.0
greater than 12 months	115	92.0
Frequency of drug injection		
Daily	111	88.8
once weekly	9	7.2
twice monthly	5	4.0
Means of obtaining hard drugs		
At work	5	4.0
Business Transaction	4	3.2
Hustle(pick-pocket, telling lies, begging, stealing, medial jobs, garage tax force)	116	92.8
Type of drug usage		
Heroin	113	38.8
Cocaine	110	37.8
Crack	14	4.8
Amphetamine	4	1.4
Fortwin	3	1.0
Others	47	16.2

4.4. Common STIs and other ailment among MSM

Table 4.4 shows the distribution of self reported STI symptoms among MSM within the last six months. Results showed that 25.4% of the participants reported having any STI symptoms.while lower abdominal pain (26.7%) and anal itching (26.7%) were the most common STI among this group, this was followed by anal pain (16.0%) and genital pain on urination (15.0%). Other reported ailment included general body weakness (36.8%) and TB (19.2%).

Table 4.4: Common STI symptoms among MSM

	Frequency (N = 193)	Percentage (%)
Ever had any STI Symptoms in last 6 months		
Yes	49	25.4
No	67	34.7
Common STI Symptoms among those who have had any symptom		
Lower abdominal pain	50	26.7
Genital pain on urination	28	15.0
Anal pain	30	16.0
Anal itching	50	26.7
Rash around anus	21	11.2
Smelly discharge from anus or penis	8	4.3
General body weakness symptoms		
Yes	71	36.8
No	47	24.4
Any TB symptom (severe cough, night sweat for more than two weeks)		
Yes	37	19.2
No	79	40.9

4.5.Common STIs among Bunk Based People Who Injects Drugss

Table 4.5 shows the common STI and other ailment reported by BBPWID in the last six months.Study participants who reported having any STI symptom was 55.2%, with majority of them (68.9%) reporting lower abdominal pain as the most common STI. Majority of BBPWID respondents (74.4%) also reported having general body weakness; while only a few (35.2%) reported any sign of TB.

Table 4.5: Common STI symptoms among BBPWIDs

Variable	Frequency (N = 125)	Percentage (%)
Ever had any STI symptoms in last 6 months		
Yes	69	55.2
No	55	44.0
Common STI Symptoms among those who have had any symptom		
Lower abdominal pain	62	68.9
Genital pain on urination	6	6.7
Anal pain	3	3.3
Anal itching	6	6.7
Rash around anus	5	5.6
Smelly discharge	8	8.9
General body weakness symptoms		
Yes	93	74.4
No	32	25.6
TB symptom severe cough		
Yes	44	35.2
No	81	64.8

4.6. STI health seeking Behaviour among MSM

The prevalence of those who received any form of STI treatment among MSM reporting STI symptom was 49.2%.

About 17.0% of MSM sought medical treatment for STIin designated public or private health services providers while others got treatment from either pharmacy/chemistpatent store(20.6%)or practiced self medication (27.5%). Participants' motivation for visiting health facility were mainly due to sickness (49.2%), to get information (4.7%), because they were given money (4.7%) and friendliness of the health givers at the facility (3.6%). 40.4% of MSM who received STI treatment also reported being satisfied with the services/treatment accessed while 29.0% said they were not satisfied. Distance to health facility and financial constraints were reported as the two most common barriers to assessing treatment from a health facility 39.9% and 22.8% respectively.

Table 4.6: STI health seeking behaviour among MSM

Variable	Frequency (N = 193)	Percentage (%)
Did you receive any STI treatment		
Yes	95	49.2
No	44	22.8
Where did you access treatment		
public hospital/clinic	32	16.9
private hospital/clinic	32	16.9
NGO	20	10.6
pharmacy/chemist	39	20.6
traditional healer	13	6.9
Self medication	53	27.5
Motivation for visiting Health Facility		
when I am sick	95	49.2
when I like	8	4.1
because they give money	9	4.7
to get information	9	4.7
because they are friendly	7	3.6
Does Health facility provide all needed services		
Yes	78	40.4
No	56	29.0
Was service friendly		
Yes	62	32.1
No	27	14.0
Reasons why you don't go to HF to access services		
Distance	77	39.9
Financial constraint	44	22.8
Behaviour of Health care givers	28	14.5
Other reasons	21	10.9

4.7.STI Health Seeking Behaviour among Bunk Based People Who Injects Drugs

BBPWID respondents who reported receiving any form of STI treatment were 66.4%.Self medication (45.6%) was the most practiced method of receiving treatment by respondents; followed by those who received treatment in Public hospitals (23.3%), and then from Pharmacy/chemist stores (16.0%). BBPWIDs mainly visited the health facility when they were sick (40.0%), while others visitedbecause they were given some money (12.8%). Financial constrint (45.6%), distance from place of abode to health facility (28.0%) and behaviour of health care givers (18.4%) were reported as the most common barriers for accessing STI health services.

Table 4.7: STI health seeking behaviour among BBPWIDs

STI health seeking behaviours	Frequency (N = 125)	Percentage (%)
Did you receive any STI treatment		
Yes	83	66.4
No	37	29.6
Where did you access treatment		
Public hospital/clinic	29	23.4
Private hospital/clinic	6	4.8
NGO	10	8.1
Pharmacy/chemist	20	16.1
Traditional healer	2	1.6
Self medication	57	46.0
Motivation to visit Health Facility (HF)		
when I am sick	50	40.0
when I like	3	2.4
because they give money	16	12.8
to get info	3	2.4
because they are friendly	2	1.6
Did HF provide all needed services?		
Yes	46	36.8
No	26	20.8
Is HF closer to bunk/hotspot?		
Yes	36	28.8
No	33	26.4
Reasons why you don't go to HF to access services		
Distance	35	28.0
Financial constraint	57	45.6
Behaviourof Health Care Givers	23	18.4
Others	9	7.2

4.8. Knowledge of STI prevention among MSMs

Knowledge of STI prevention was assessed using the 8 individual components and UNGASS knowledge indicator for most-at-risk populations. Result showed that majority of the MSM respondents had correct knowledge of STI prevention.Table 4.7 shows that majority of the respondents (>75.0%) correctly answered to all questions assessing knowledge of STI prevention.

(Table 4.8)

Table 4.8: Knowledge of HIV and other STIs among MSMs

	Frequency	Percent
Can person get HIV thru mosquito bite?		
Yes	26	13.5
No	166	86.0
Can STI/HIV be transmitted thru sharing toilet?		
Yes	42	21.8
No	149	77.2
Can one avoid HIV by staying faithful?		
Yes	154	79.8
No	36	18.7
Can one avoid HIV by using condom every time?		
Yes	160	82.9
No	30	15.5
Can a healthy person be HIV positive?		
Yes	167	86.5
No	21	10.9
If relative is Positive will you care for her at home?		
Yes	146	75.6
No	43	22.3
Iffemale teacher has HIV should she be allowed to teach?		
Yes	152	78.8
No	40	20.7
If you knew a shopkeeper has HIV will you buy from him/her?		
Yes	145	75.1
No	47	24.4

4.9. Knowledge of STI prevention among BBPWID

Knowledge of STI prevention among BBWIDs followed similar pattern of results obtained for MSM. Results showed that majority of the MSM respondents had correct knowledge of STI prevention. Table 4.8 shows that majority of the respondents (>72.0%) correctly answered to all questions assessing knowledge of STI prevention, except 68.8% who said they would care for a relative at home if she were Positive and 52.8% who agreed that a healthy person can be HIV positive. A few respondents (40.0%)said that a female teacher with HIV should be allowed to teach while 31.2% said they would still buy from a seller if they knew she was HIV positive.

Table 4.9: Knowledge of HIV and other STIs among BBPWID

	Frequency	Percent
Can person get HIV thru mosquito bite?		
Yes	13	10.4
No	112	89.6
Can STI/HIV be transmitted through sharing toilet?		
Yes	12	9.6
No	113	90.4
Can one avoid HIV by staying faithful?		
Yes	35	28.0
No	90	72.0
Can one avoid HIV by using condom every time?		
Yes	34	27.2
No	91	72.8
Can a healthy person be HIV positive?		
Yes	66	52.8
No	59	47.2
If relative is Positive will you care for her at home?		
Yes	86	68.8
No	39	31.2
If female teacher has HIV should she be allowed to teach?		
Yes	50	40.0
No	75	60.0
If you knew a shopkeeper has HIV will you buy from him/her?		
Yes	39	31.2

No	86	68.8

Bivariate analysis

Bivariate analysis was done using chi square test of association was to investigate the association between STI service utilization and several factors. All tests were reported at 5% level of significance.

4.10. Association between STI service utilization and Socio Demographic characteristics of MSM

Table 4.10 shows the bivariate analysis between STI service utilization (defined as ever received STI treatment) among MSM and socio demographic variables. STI service utilization was only significantly associated with how long respondent has lived in the community as those who accessed STI treatment was higher among those who have lived in a community for more than twelve months (78.7%) compared tothose who have lived in the community for less than six months (38.1%).Although, results showed that STI service uptake was higher among MSM who has a secondary education (72.5%), married men (75.0%), students (78.6%), and who have practiced anal sex for a duration of one year or more (74.0%); the association was however not statistically significant.

Table 4.10: Association between STI service utilization and socio demographic factors for MSM

	Ever received treatment		P-value
	Yes (N = 95)	No (N = 44)	
Level of education			
Nil	2 (40.0)	3 (60.0)	0.129
Primary	4 (44.5.0)	5 (55.5)	
Secondary	50 (72.5)	19 (27.5)	
Tertiary	39 (69.6)	17 (30.4)	
Marital status			
Married	3 (75.0)	1 (25.5)	0.855
Cohabit	10 (71.4)	4 (28.6)	
Never married	80 (69.0)	36 (31.0)	
Separated	2 (50.0)	2 (50.0)	
Currently employment			
Employed	17 (68.0)	8 (32.0)	0.346
Self employed	22 (64.7)	33 (35.3)	
not employed	23 (60.5)	27 (39.5)	
Student	33 (78.6)	9 (21.4)	
how long have you been living in community			
1 - 6 months	8 (38.1)	13 (61.9)	0.001
7 - 12months	13 (59.1)	9 (40.9)	
>=12months	74 (78.7)	20 (21.3)	
duration of practicing Anal sex			
1 - 6 months	8 (47.1)	9 (52.9)	0.078
7- 12 months	14 (70.0)	6 (30.0)	
>= 1 2	72 (74.2)	40 (29.9)	
Ave Monthly INCOME			
<= N20,000	34 (77.3)	10 (22.7)	1.000
>=N20,000	4 (80.0)	1 (20.0)	

4.11. Association between STI service utilization and socio demographics of BBPWID

Table 4.11 shows the association between STI service utilization and STI symptoms. Results showedthat there was a statistically significant association between STI service utilization and age, educational level, marital status and current employment status. STI treatment utilization wassignificantly higher among BBPWIDsaged above 30 years (69.2%) compared to those less than 30 years (50.0%); also, with secondary education (77.3%) utilized STI services more than those with either tertiary education (44.4%) or none (44.4%).

BBPWIDs who received STI treatment were significantly higher among those who were employed(84.0%) compared to those who were not (29.4%). STI treatment uptake was higher among BBPWID (75.8%) who reported never married compared to those who were either cohabit (50.0%) or were separated (22.2%). There was no the statistically significant association between STI service utilization and sex, income, duration stayed in the community, or duration of drug use.

Table 4.11: Association between STI service utilization and socio demographics of BBPWID

	Received treatment		P value
	Yes (N = 83)	No (N = 37)	
Sex			
Male	79 (68.1)	37 (31.9)	0.174
Female	4 (100)	0 (0.0)	
AGE			
14 - 30 yrs	1 (50.0)	1 (50.0)	0.001
above 30 yrs	81 (69.2)	36 (30.8)	
Education level			
Nil	4 (44.4)	5 (55.6)	0.013
Vocational	0 (.0)	1 (100.0)	
Pry	20 (76.9)	6 (23.1)	
Secondary	51 (77.3)	15 (22.7)	
Tertiary	8 (44.4)	10 (55.6)	
Marital status			
Married	55 (72.4)	21 (27.6)	0.014
Cohabit	1 (50.0)	1 (50.0)	
never married	25 (75.8)	8 (24.2)	
Separated	2 (22.2)	7 (77.8)	
Currently employment			
Employed	21 (84.0)	4 (16.0)	<0.001
self employed	57 (73.1)	21 (26.9)	
not employed	5 (29.4)	12 (70.6)	
How long living in community			
1 - 6 months	3 (60.0)	2 (40.0)	0.622
7 months - 12 months	2 (50.0)	2 (50.0)	
greater than 12 months	78 (70.3)	33 (29.7)	
duration of practicing drug use			
1 - 6 months	4 (80.0%)	1 (20.0%)	0.790

7 months - 12 months	3 (60.0%)	2 (40.0%)	
greater than 12 months	76 (69.1%)	34 (30.9%)	
Average monthly income			
less than/equal to N20,000	28 (68.3%)	13 (31.7%)	0.460
greater than N20,000	45 (75.0%)	15 (25.0%)	

4.12. Association between STI treatment uptake and sexual behaviour of MSM

Table 4.12 below shows the association between STI treatment uptake and special characteristics of sexual behaviour among MSM. Results showed that having a female sex partner was significantly associated with STI treatment uptake among MSM.

STI treatment uptake was significantly higher among those who had no female sex partner (79.6%) compared to those who had other female sex partners (61.3%).

There was no statistically significant association between meeting male partners in other locations and age at first anal sex.

Table 4.12: Association between STI treatment uptake and special characteristics of sexual behaviour among MSM

	Received treatment		P value
	Yes (N = 95)	No (N = 44)	
Meet male partners in other locations			
Yes	70 (68.6)	32 (31.4)	0.915
No	23 (67.6)	11 (32.4)	
Have female partners			
Yes	46 (61.3)	29 (38.7)	0.027
No	43 (79.6)	11 (20.4)	
Age at first anal sex			
less 18 yrs	51 (63.8)	29 (36.2)	0.213
18 - 30 yrs	41 (77.4)	12 (22.6)	
above 30 yrs	1 (50.0)	1 (50.0)	

4.13: Association between STI treatment uptake and history/patternof drug use among BBPWID

Table 4.12 below shows the association between STI treatment uptake and history and pattern of drug use among BBPWIDs. STI treatment uptake was significantly higher among respondents who inject drug daily (72.6%),compared to those who either injected drugs once weekly (33.3%) or twice monthly (60.0%). Also, taking crack and other forms of drugs were significantly associated with utilizing treatment services.

Table 4.13: Association between STI treatment uptake and history/patternof drug use among BBPWID

	Received treatment		P Value
	Yes (N = 83)	No (N = 37)	
How often do you inject drugs			
Daily	77 (72.6)	29 (27.4)	0.045
once weekly	3 (33.3)	6 (66.7)	
twice monthly	3 (60.0)	2 (40.0)	
How do you obtain drugs			
at work	3 (60.0)	2 (40.0)	0.877
Transaction	3 (75.0)	1 (25.0)	
Hustling	77 (69.4)	34 (30.6)	
Type of drugs			
Heroin			
No	5 (50.0)	5 (50.0)	0.170
Yes	78 (70.9)	32 (29.1)	
Cocaine			
No	9 (60.0)	6 (40.0)	0.411
Yes	74 (70.5)	31 (29.5)	
Crack			
No	80 (75.5)	26 (24.5)	0.000
Yes	3 (21.4)	11 (78.6)	
Amphetamine			
No	82 (70.7)	34 (29.3)	0.052
Yes	1 (25.0)	3 (75.0)	
Fortwin			
No	82 (70.1)	35 (29.9)	0.173
Yes	1 (33.3)	2 (66.7)	
Others			
No	67 (90.5)	7 (9.5)	< 0.000

Yes	16 (34.8)	30 (65.2)

4.14. Association between STI service utilization and STI symptoms among MSM

Table 4.14 below shows the association between STI treatment uptake and self reported STI symptoms by MSM. Results showed that having any STI symptom and general body weakness in the last six months; and having some form of motivation for visiting the health facility were significantly associated with STI treatment uptake among MSM.

STI treatment uptake was significantly higher among those who reported any STI symptoms of any sort or general body weakness within the last six months 75.0%and 80.6% respectively compared to those who didn't. Also, STI treatment uptake was significantly higher among respondents who were motivated to go to the health facility because they were sick (89.1%) compared to others.

There was no statistically significant association between uptake of STI treatment and presence of TB symptoms.

Table 4.14: Association between STI service utilization and STI symptomsamong MSM

	Ever received treatment?		
	Yes (N = 95)	No (N = 44)	P Value
STI Symptoms			
Had some symptoms	33(75.0)	11 (25.0)	0.004
Had no symptoms	25 (46.3)	29 (53.7)	
General Body Weakness			
Yes	50 (80.6)	12 (19.4)	< 0.001
No	8 (22.9)	27 (77.1)	
TB symptoms			
Yes	17 (56.7)	13 (43.3)	0.759
No	39 (60.0)	26 (40.0)	
Motivation for visiting Health facility			
When I'm sick	57 (89.1)	7 (10.9)	< 0.001
When I like	3 (60.0)	2 (40.0)	
Because I'm given money	2 (20.0)	3 (60.0)	
To get information	2 (28.6)	5 (71.4)	
Because they are friendly	3 (60.0)	2 (40.0)	

4.15: Association between STI treatment uptake and STI symptoms among BBPWID

Table 4.15 below shows the association between STI treatment uptake and self reported STI symptoms by BBPWID. Respondents who utilized STI treatment services were significantly higher among respondents who reported STI symptoms of any sort (85.5%)or general body weakness (84.9%) within the last six months compared to others who didn't. There was no significant association between receiving STI treatment and other factors like having TB symptoms orhaving a motivation for visiting the health facility.

Table 4.15: Association between STI treatment uptake and STI symptoms/drug history among BBPWID

	Received treatment		P Value
	Yes (N = 83)	No (N = 37)	
STI symptoms			
had some symptoms	59 (85.5)	10 (14.5)	<0.001
had no symptom	23 (46.0)	27 (54.0)	
TB symptoms			
Yes	34 (77.3)	10 (22.7)	0.143
No	49 (64.5)	27 (35.5)	
General body weakness symptoms			
Yes	79 (84.9)	14 (15.1)	<0.001
No	4 (14.8)	23 (85.2)	
Motivation for visiting Health facility			
When I'm sick	47 (94.0)	3 (6.0)	0.837
When I like	3 (100.0)	0 (0.0)	
Because I'm given money	16 (100.0)	0 (0.0)	
To get information	2 (100.0)	0 (0.0)	
Because they are friendly	2 (100.0)	0 (0.0)	

4.16: Association between STI treatment uptakeand knowledge of STIs/HIV among MSM

Table 4.16below shows the association between the level of knowledge of STI/HIV among MSM and utilization of STI services. Results showed that there was no statistically significant association between knowledge of STI/HIV and utilization o STI services ($P > 0.05$).

Table 4.16: Association between receiving treatment and knowledge of STI prevention among MSM

Knowledge of STI/HIV	Ever received treatment		P Value
	Yes (N = 95)	No (N = 44)	
If relative is positive, will you care for him/her at home?			
Yes	71 (65.1)	38 (34.9)	0.102
No	22 (81.5)	5 (18.5)	
Can STI/HIV be transmitted thru sharing toilet?			
Yes	13 (56.5)	10 (43.5)	0.191
No	81 (70.4)	34 (29.6)	
Can one avoid HIV by staying faithful?			
Yes	78 (67.2)	38 (32.8)	0.808
No	14 (70.0)	6 (30.0)	
Can one prevent STI by using condom correctly and consistently?			
Yes	80 (66.1)	41 (33.9)	0.278
No	12 (80.0)	3 (20.0)	
Can a healthy person be HIV positive?			0.160
Yes	87 (68.5)	40 (31.5)	
No	3 (42.9)	4 (57.1)	
If female teacher has HIV, will she			

be allowed to teach your son?			
Yes	73 (65.2)	39 (34.8)	0.124
No	21 (80.8)	5 (19.2)	
If you knew a shopkeeper with HIV, will you buy from him?			
Yes	69 (65.7)	36 (34.3)	0.280
No	25 (75.8)	8 (24.2)	

4.17: Association between STI treatment uptake and knowledge of STI prevention among BBPWID.

Table 4.17belowshows the association between knowledge of STI?HIV prevention and STI service utilization. Results showed thatsome questions about knowledge of STI/HIV prevention strategies were significantly associated with uptake of STI service. A higher STI treatment uptake was observed among respondents who disagreed that STI can be prevented by being faithful with only one negative sex partner(79.8%).those who disagreed that STI could be prevented through consistent and correct use of condom during anal or vaginal sex (78.9%), and those who said that a healthy looking person cannot have STI (83.1%). (P <0.05).

Table 4.17 Association between receiving treatment and knowledge of STI prevention of BBPWID

	Received treatment		P Value
	Yes (N = 83)	No (N = 37)	
Can person get any STI thru mosquito bite?			
Yes	10 (76.9)	3 (23.1)	0.521
No	73 (68.2)	34 (31.8)	
Can STI/HIV be transmitted through sharing toilet?			
Yes	8 (66.7)	4 (33.3)	0.843
No	75 (69.4)	33(30.6)	
Can one avoid HIV by staying faithful?			
Yes	12 (38.7)	19(61.3)	<0.001
No	71 (79.8)	18(20.2)	
Can one prevent STI by using condom correctly and consistently?			
yes	12 (40.0)	18(60.0)	<0.001
no	71 (78.9)	19(21.1)	
Can a healthy person be HIV positive?			
yes	34 (55.7)	27(44.3)	0.001
No	49 (83.1)	10(16.9)	
If relative is Positive will you care for her at home?			
Yes	53 (64.6)	29(35.4)	0.114
no	30 (78.9)	8 (21.1)	
If female teacher has HIV should she be allowed to teach?			
Yes	19 (41.3)	27(58.7)	< 0.001
No	64 (86.5)	10(13.5)	
If you knew a shopkeeper has HIV will you buy from him/her?			
Yes	14 (40.0)	21(60.0)	<0.001
No	69 (81.2)	16(18.8)	

4.18Logistic Regressions output showing factors associated with STI treatment service reception by MSM

Table 4.18 shows the binary logistic regression between STI service utilization and several factors. Results showed that MSMwho had any STI symptom in the last six months were about 4 times more likely to have assessed treatment for STI compared to those without any symptom(OR: 3.531, 95% CI: 0.327 - 38.087). MSM who also had female sex partners were also about 6 times more likely to have assessed treatment for STI compared to who didn't have, while the odds for STI service utilization was about 2.311 among those whose who sought to get information compared to those with other reasons. We however found no statistically significant association between all risk factors explored ($p > 0.05$).

Table 4.18. Binary Logistic regression showing risk factors associated with treatment service reception by MSM

	OR	95% CI	P Value
How long living in community			
1 - 6 months	Ref		0.633
7 months - 12months	0.25	0.01 - 4.98	0.366
greater than 12 months	0.57	0.05 - 7.25	0.666
Presence of any STI Symptoms	3.53	0.33 - 38.09	0.299
Presence of General Body weakness	0.01	0.00 - 0.20	0.002
Have other female sex partners	5.62	0.55 - 57.19	0.145
Motivation for visiting Health Facility			
When I'm sick	Ref		0.056
When I like	0.04	0.00 - 0.38	0.005
Because I'm given money	-		0.999
To get information	2.31	0.05 - 113.12	0.673
Because they are friendly	0.18	0.01 - 5.68	0.332
Other reasons	-		0.999
Health care Facility closer to bunk/hotspot	0.44	0.04 - 4.64	0.492

4.19 Logistic regression showing risk factors associated with STI treatment service reception by BBPWID

After adjusting for other variables, BBPWID who had secondary education; who had both STI symptoms and general body weakness in the last six months; and who took other types of drugs apart from injected drugs were predictors of STI service utilization (Table 4.18).

Table 4.19: Binary Logistic regression showing risk factors associated with treatment service reception by BBPWID

	OR	95.0% (C.I.)	P value
Edu level			
Nill	Ref		
Vocational	0.03	0.00 – 2.45	1.00
Primary	0.01	0.00 - 2.08	0.09
Secondary	0.01	0.00 - 0.34	0.02
Tertiary	0.04	0.00 - 0.35	0.18
Marital Status			
Married	Ref		
Cohabit	0.06	0.00 - 104.13	0.46
Never married	30.71	0.92 – 103.8	0.06
Separated	1.01	2.52 - 4.01	0.03
Current employment			
Employed	Ref		
Self employed	0.02	0.00 - 11.38	0.25
Unemployed	0.16	0.01 - 5.12	0.30
How often do you inject drugs			
Twice monthly	Ref		
Daily	0.25	0.00 - 15.33	0.51
Once Monthly	1.38	0.01 - 31.22	0.91
Type of drugs			
Crack	0.35	0.06 - 21.84	0.62
Other drugs	2.24	1.99 - 3.51	0.01
STI Symptoms	0.01	0.00 - 0.56	0.03
General Body weakness	0.00	0.00 -0.04	0.01

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMENDATION

This study shows that the STI service utilization was generally higher among MSM compared to BBPWIDs. The proportion of high risk groups (MSM&BBPWID only) in Lagos who received treatment upon manifestation of STI symptoms was estimated to be 49.2% for MSM and 66.4% for BBPWIDs. This value was above higher than findings reported by IBBSS (2010) which reported very low access to STI treatment by these groups. Although, other typologies of high risk group was not captured in this study like Brothel Based Female Sex worker (BBFSW), Non brothel based female sex workers (NBBFSW), Non Bunk based People Who Inject drug (NBBPWID), Drug users (DUs), female drug users (FDUs), Male Sex Workers (MSW), Orphan and Vulnerable Children (OVCs), IBBSS reported overall prevalence of STI treatment uptake among all HIV high risk group.

The higher rates of STI treatment uptake among MSM and BBPWID observed from this studycould be attributed tothe current efforts by PEPFAR, Department of Defense. World Bank and WHO to strengthen STI/HIV intervention through funding, and provision of friendlier STI testing and treatment centers for MSM and BBPWID which is accessible through referrals in Lagos. This study reported STI treatment uptake among BBPWID to be 66.4%. this is also higher than findings by IBBSS 2010 for Lagos, who reported that only 20.0% of IDU seeks treatment while none was reported for MSM.

While IBBSS 2010 reported only facility based STI treatment access. improvement found by this study could also be attributed to inclusion of several STI treatment option reported by respondent which like self medication, treatment by traditional healer and treatment by road side patent medicine store. Adult Female Injecting drug users were very difficult to recruit during the study (only 3.2%

participated) thereby having lower proportion of those who participated in the study which is in agreement with IBBSS 2010 study were only 5% of the IDU study participants were female.

However another study also reported that males account for 66%–93% of all PWID in sub-Saharan Africa (Aceijas*et al*., 2006), the reason for low participation of female IDU in study and intervention in Nigeria have not be documented. No study has focused on Bunk based PWID in Nigeria as several studies reviewed in this study focused on general PWID and MSM without capturing specific typologies (IBBSS 2010). The results obtained especially for MSM where relatively consistent with other related studies done in urban cities in and outside Nigeria.

5.1 Characteristics of MSM and BBPWID who accessed STI treatment services

About 51.8% of MSM study participants reported having female sex partners while 73.1% often meet male sex partners in other location aside their location. this is in agreement with findings by Adebajo*et al* (2012) who reported that 30.8% MSM had other female partners and 55% regarded themselves as bisexual in Lagos and Ibadan and in total agreement with other study (IBBSS 2010) that reported that MSM are highly mobile thus had multiple male partners in locations other than where they currently live. More so 25.4% of respondent reported having STI symptoms (LAP-Lower Abdominal Pain) in the last 6 months preceding the study which was the highest STI symptom prevalentsymptoms among MSM. This is slightly in disagreement with IBBSS 2010 study where common self reported STI symptom reported by majority of MSM was smelly discharge (8.3%) in the last 12 months preceding the survey, with genital ulcer/sore being the least reported (3.2%). This could be because since 2010 report by IBBSS, focus have been shifted to treatment for smelly discharge by STI treatment centers with total negligence of other symptoms like LAP which was reported low. Over time, there was tendency that other symptoms could emerge. More over, this study was only done in urban city of Lagos, education level is high and access to information is also high, therefore

participants are more probably prone to giving out correct and accurate information than those in rural areas. About 49.2% of MSM seek medical treatment for illness (STI, TB, weakness, fever etc) in designated health services providers as 20.6%; obtained treatment from chemist/patent store. No study have reported this in sub Saharan African region for MSM but study on youth access to STI by (Baral et al. 2009) reported low STI treatment uptake by MSM . About half of MSM (49.2% and BBPWID (89.1%) were motivated to visit health facility when they are sick while few (3.6%) are motivated by the friendliness of the health givers in the treatment facility. This could be as a result of strong social stigmatization against this group which makes even the care givers not to be friendly and professional when attending to MSM and BBPWID. Accessing treatment only when you one gets very sick is of public health concern especially with HIV high risk group as untreated STI could promote HIV infection, sickness proved that immunity is low. Treatment should be done upon reported symptoms (Heckathorn, 1997). About 40.4% of the MSM and 36.8 BBPWID who received STI treatment reported being satisfied with the services/treatment accessed while 32.1% MSM and 40.0% believed that the services of health care givers was friendly; This report was basically for MSM and BBPWID who accessed treatment in chemist store, traditional herbal centers and self medication not public clinics or private/pharmacist clinics. Study by Onorideettal 2013 shows agreement with the above as 38.3% MSM and 29.3% PWID in Lagos agreed that STI treatment providers are MARPS friendly.

About 55.2% of BBPWID reported having any of the STI symptoms in the last six months preceding the study while 66.4% of people with symptoms received treatment in different health service providers including self-medication (45.6%), Pharmacy store-16.0%, public hospital-23.3% while 40.0% reported that the service received was friendly and 36.8% confirmed that the health facility provided them with services needed. This is slightly not consistent with a recent study (IBBSS 2010) in Nigeria were the commonest STI symptom reported by IDU was smelly discharge 12.6%

The disparity could be attributed to the fact that IBBSS 2010 reported National prevalence of all typologies of drug users, while this study is specific to one typology of IDU in only 5 LGA in Lagos. Level of STI awareness intervention is also high in the study site thereby more BBPWID had informed decision to report symptoms during data collection.

5.2 Knowledge of STI prevention among MSM and BBPWID

The knowledge of STI prevention was reported to be high among MSM and low among BBPWID and has implication in the level of access to STI treatment. About 70.4% of MSM who received STI treatment answered correctly the question "can one get STI/HIV through sharing toilet? While MSM who fail the question and received STI treatment was only 56.5%.However, about 79.8% of BBPWID who get correctly the question "can HIV/STI be gotten by being faithful to one negative partner received STI treatment compared to about 38.7% of BBPWID who received STI treatment but failed the question. This result is in agreement with study by Desmond et tal 2013 on the pattern of drug use and its effect on treatment access among PWID who found that drug users who inject heroin and cocaine daily was 0.0234 more likely to loss memory than other drug user. More so, the finding in this study is also in agreement with IBBSS 2010 report that MSM reported high knowledge of STI/HIV prevention but did not show its association with receiving STI treatment. However, this study showed that there is significant increase in knowledge of STI/HIV prevention among BBPWID compared to IBBSS study in 2010 which reported that only 29.5% of IDU in Lagos were aware of the risk of HIV/STI and how to prevent it. This could be linked to several STI interventions among MARPS group in Lagos and also that BBPWID is just a sub-set of IDU which IBBSS reported.

5.3 Association between STI treatment uptake and socio demographic characteristic of MSM and BBPWID

This study did not record any significant association between education level, marital status and age with STI treatment uptake among MSM and BBPWID. This is also in agreement with recent publication by Lung *et al* (2013) on the sexual risk behavior among men who have sex with men: evidence from a cross-sectional survey for the need for innovative approaches to STI prevention which reported that there is not association between sexual risk and HIV testing uptake. This is a strong indication that more targeted and innovative approached for STI prevention especially STI self testing should be adopted in other to create demand for STI treatment uptake by this HIV high risk group.

More so, a greater proportion of MSM who reported to have lived in the community for more than one year received treatment more compared to MSM who have just lived less than six months. This does not agree with to any study as none have actually been published on the association between duration of stay to STI treatment uptake. However it is assumed based on this study that MSM who have stayed longer in a community is to have good knowledge of the environment and could be able to identify where cheaper health services will be accessed. Ironically some unpublished report have ascertained that due to social stigma attached to MSM, most MSM do not readily uptake STI/HIV services in the area where they are well known.

5.4 STI treatment uptake determining factoramong MSM and BBPWID

The significant motivation for accessing STI treatment by BBPWID and MSMwas when they are very sick and discouraging factor is lack of money (45.6%) to pay for treatment. This is in agreement with IBBSS 2007 report that poverty account for low treatment access hy IDU. Poor access to treatment also increases the vulnerability of this group to HIV/STI. About half of MSM (49.2%) are motivated to visit

health facility when they are sick while few (3.6%) are motivated by the friendliness of the health givers in the facility. This very important issue to tackle as more strategies should be targeted to improve uptake of treatment which include: mobile STI testing and treatment at the bunk and hot spot during peak period. This will reduce significantly the rampant self medication practice among BBPWID and MSM. More health care givers should be trained on providing STI treatment that is MARPS friendly, this will go a long way to provide STI treatment with social stigmatization.

5.5 Factors associated with treatment service reception by MSM and BBPWID who reported STI symptoms.

MSMwho had any STI symptom in the last six months were about 4 times more likely to have assessed treatment for STI compared to those without any symptom. MSM who also had female sex partners were also about 6 times more likely to have assessed treatment for STI compared to who didn't have. This is in agreement with IBBSS 2010 report which reported that MSM who engage in multiple sex partnering have more risk of contracting STI and this will increase the number of them that go for STI treatment. It is also consistent with study by Adebajo et al 2012 on Prevalence of Internalized Homophobia and HIV Associated Risks among Men who have Sex with Men in Nigeria. reported thatMSM with symptom of STI always go for information on treatment that those who do not show symptom. Thi scan also be related to the risk associated with anal sex engaged by MSM especially male sex workers who will always look for treatment for any STI as non treatment of STI could reduce the number of clients.

5.6 Study Limitation

The data for this study relied partly on the information received from the respondents and so there may be overestimations or underestimations. Men in the sample were well-educated in urban areas-these characteristics do not reflect the reality for a significant proportion of the Nigerian population Given

the secrecy surrounding same-sex sexuality behavior and drug injection in Nigeria. recruitment of men for the research activities described here was facilitated largely throughpersonal networks. Self-selection may have limited the diversity of men who have sex with men represented. The study does not bring insight in other typologies of drug users especially female drug users and injecting drug users who do not dwell in the drug bunk but visit the bunk from their house. The study does not show the impact of prohibiting law against same sex marriage and substance abuse in Nigeria to the STI treatment service utilization

5.7 CONCLUSION AND RECOMMENDATION

More MSM and BBPWID friendly STI treatment centers should be established near the drug bunk and MSM hot spots as interventions among these groups are required to promote demand creation for STI treatment. More so, MSM/BBPWID friendly skill acquisition centers should be established to improve income generation among these groups. More research should be focused on BBPWID and MSM to document life in the bunk/hotspot and how BBPWID sustain drug purchase even in the bunk and the public health implication of this risky lifestyle.

To improve linkages between health facilities and improve access to comprehensive STI care and treatment services, Lagos need to developedmore evidenced based integrated health clusters services across the country that will provide standard STI treatment services to this group.However, services in the integrated health clusters should follow a standard directive which will be based on evidence from the insight in this group based on the STI treatment needs, barriers and motivators to treatment access and these data are not available for use.

There is therefore need for continued support for expansion of studies, dynamic health service provision and packaging the results for policy advocacy and for informing program and service

development for MSM/IDU. Furthermore, there is urgent need to not only support development of appropriate interventions for MSM in Africa but also to invest in addressing the structural barriers that may impede access to services in the future.

There is need for more innovative MARPS targeted intervention that should be implemented among MSM and BBPWID to address the gaps in accessing STI treatment. Providing STI mobile counseling and testing to the drug injection bunk and MSM hot spots at peak period and training of health personnel on providing friendly services to HIV high risk group which will be void of stigmatization is major steps to increase STI services uptake by this group. Also Providing comprehensive STI prevention knowlagde to this group in local language and skill acquisation empowerment should be to this group will raise their income, this will hopefully empower then to pay for any treatment services. More advocacy at the National level to make free STI treatment services available to this HIV high risk group at any time. More so, study should be done among MSM and IDU to identify risk perculiar to each typology like BBPWID-Bunk Based People Who inject drugs, FDU-Female drug Users. MSW-Male Sex Workers, SMSWM-Straight Men who have sex with men. Structured surveillance system should be put in place to report new case of STI among MSM and BBPWID so as to reduce co-infection.

REFERRENCE

Adebajo. S, George E., Jean N., Ayodeji O., Babatunde A (2012).: Prevalence of Internalized Homophobia and HIV Associated Risks among Men who have Sex with Men in Nigeria: African Journal of Reproductive Health December 2012; 16(4): 21

Adeyi, O.,Kanki, P.J., Odutolu, O. and Idoko, J.A. (eds.) (2006) AIDS in Nigeria: A Nation on theThreshold. Cambridge, MA: Harvard University Press.

AGI, In Their Own Right: Addressing the Sexual and Reproductive Health Needs of American Men, New York: AGI, 2002,.

Akpa, O.M., Adeolu-Olaiya, V., Olusegun-Odebiri, A.C. and Aganaba, D. (2011) 'HIV/AIDS-related Stigma and Access to HIV Treatment by People Living with HIV/AIDS: A Case Study of Selected States in North-West Nigeria'. HIV & AIDS Review 10(1): 19-25.

Allman, D., Adebajo, S., Myers, T., Odumuye, O., & Ogunsola, S. (2007). Challenges for the sexual health and social acceptance of men who have sex with men in Nigeria. Culture, Health & Sexuality, 9(2), 153–168.

Allman, D., Adebajo, S., Myers, T., Odumuye, O., & Ogunsola, S. (2007). Challenges for the sexual health and social acceptance of men who have sex with men in Nigeria. Culture, Health & Sexuality, 9(2), 153–168.

Amanyeiwe, U., Laurel, H., Aneesa, A., et al. (2008) Nigeria HIV/AIDS Service Provision Assessment. Bethesda, MD: Health Systems 20/20 Project, Abt Associates Inc.

American Medical Association, Guidelines for Adolescent Preventive Services Recommendations, 2000, <http://www.ama-assn.org/ama/pub/category/ 2279.html>, accessed Feb. 2, 2001;

Auvert, B., Taljaard, D., Lagarde, E., Sobngwi-Tambekou, J., Sitta, R. and Puren, A. (2005) 'Randomized, Controlled Intervention Trial of Male Circumcision for Reduction of HIV Infection Risk: The ANRS 1265 Trial'. PLoS Med 2: 298.

Baral, S. (2011), Social and structural factors associated with HIV risk among female sex workers (FSW) and men who have sex with men (MSM) in Swaziland, 2011. Swaziland BSS Phase II MOH Dissemination, May 28.

Baral, S. (2011), Social and structural factors associated with HIV risk among female sex workers (FSW) and men who have sex with men (MSM) in Swaziland, 2011. Swaziland BSS Phase II MOH Dissemination, May 28.

Baral, S., Burrell, E., Scheibe, A., Brown, B., Beyrer, C., & Bekker, L.G. (2011).HIV risk and associations of HIV infection among men who have sex with men in peri-urban Cape Town. South Africa. BMC Public Health, Pg 11, 766.

Baral, S., Burrell, E., Scheibe, A., Brown, B., Beyrer, C., & Bekker, L.G. (2011). HIV risk and associations of HIV infection among men who have sex with men in peri-urban Cape Town. South Africa. BMC Public Health, 11, 766.

Baral, S., Scheibe, A., Sullivan, P., Trapence, G., Lambert, A., Bekker, L.G., et al. (2012). Assessing priorities for combination HIV prevention research for men who have sex with men (MSM) in Africa. AIDS and Behavior, May

Baral, S., Scheibe, A., Sullivan, P., Trapence, G., Lambert, A., Bekker, L.G., et al. (2012). Assessing priorities for combination HIV prevention research for men who have sex with men (MSM) in Africa. AIDS and Behavior, May 19.

Baral, S., Sifakis, F., Cleghorn, F., & Beyrer, C. (2007). Elevated risk for HIV infection among men who have sex with men in low- and middle-income countries 2000-2006: a systematic review. PLoS Medicine, 4(12), e339.

Baral, S., Sifakis, F., Cleghorn, F., & Beyrer, C. (2007). Elevated risk for HIV infection among men who have sex with men in lovv- and middle-income countries 2000-2006: a systematic review. PLoS Medicine, 4(12), e339.

Baral, S., Trapence, G., Motimedi, F., Umar, E., Lipinge, S., Dausab, F., et al. (2009). HIV prevalence, risks for HIV infection, and human rights among men who have sex with men (MSM) in Malawi, Namibia, and Botswana. PLoS One, 4(3), e4997.

Baral,S.,Adams, D.,Lebona,J.,Kaibe, B.,Letsie, P.,Tshehlo, R.,etal. (2011). A cross-sectional assessment of population demographics, HIV risks and human rights contexts among men who have sex with men in Lesotho. Journal of the International AIDS Society, 14, 36.

Barnett, T. and Whiteside, A. (2006) AIDS in the Twenty-first Century: Disease and Globalisation. Basingstoke: Palgrave Macmillan.

Bautista CT, Sanchez JL, Montano SM, Laguna-Torres VA, Lama JR (2004): Sero prevalence of and risk factos for HIV-I infection among South American men who have sex with men. Sex Transm Infect 80: 498-504.

Baylies, C. (2002) 'The Impact of AIDS on Rural Households in Africa'.Development and Change 33(4): 611-632.

Begay, O., Jean-Pierre, N., Abraham, C., Chudolij, A., Seidor, S., Rodriguez, A., etal.(2011).Identificationofpersonallubricantsthatcancauserectalepithelial cell damage and enhance HIV-1 replication in vitro. AIDS Research and Human Retroviruses, 27(9), 1019–1024.

Begay, O., Jean-Pierre, N., Abraham, C., Chudolij, A., Seidor, S., Rodriguez, A., etal.(2011). Identification of personal lubricants that can cause rectal epithelial cell damage and enhance HIV-1 replication in vitro. AIDS Research and Human Retroviruses, 27(9), 1019–1024.

Beyrer, C., Baral, S.D., Walker, D., Wirtz, A.L., Johns, B., & Sifakis, F. (2010). The expanding epidemics of HIV type 1 among men who have sex with men in low- and middle-income countries: diversity and consistency. Epidemiology Reviews, 32(1), 137–151.

Beyrer, C., Trapence, G., Motimedi, F., Umar, E., Iipinge, S., Dausab, F., et al. (2010). Bisexual concurrency, bisexual partnerships, and HIVamong Southern African men who have sex with men. Sexually Transmitted Infections, 86(4), 323–327.

Binagwaho, A., Chapman, J., Koleros, A., Utazirubanda, Y., & Pegurri, E. (2009). Exploring HIV Risk among MSM in Kigali, Rwanda. Chapel Hill, NC, MEASURE Evaluation.

Chandra, P.S., Krishna, V.A., Benegal, V. and Ramakrishna, J. (2003) 'High-risk Sexual Behaviour and Sensation Seeking among Heavy Alcohol Users'.Indian Journal of Medical Research 117: 88-92.

Desmond A., Ibrahim S., Otibho O., Sylvia A., George E., Jean N., Ayodeji O.,&Babatunde A. (2013) : Patterns of Drug Use among People Who Inject Drugs(PWID) and their Implications for Sexually Transmitted Infections in Northern Nigeria; Population Council, HIV/AIDS. Abuja. Nigeria.

Dougan S. Elford J, Rice B, Brown AE, Sinka K (2005): Epidemiology of HIV among black and minority ethnic men who have sex with men in England and Wales. Sex Transm Infec 81 : 345-350.

EuroHIV (2006) HIV/AIDS Surveillance in Europe: Mid-year report 2005. European Commission Saint-Maurice, France. Report 72. pp. 21–35. Available: http://www.eurohiv.org/reports/index_reports_eng.htm. Accessed 10 August 2007

Federal Ministry of Health (2007) 2008 National HIV sero-prevalence sentinel survey. Federal ministry of Health National AIDS/STI Control Programme.

Federal Ministry of Health (2008) 2007 National HIV and AIDS and Reproductive Health Survey Plus. Federal ministry of Health National AIDS/STI Control Programme.

Federal Ministry of Health Nigeria (2003). National HIV and AIDS and Reproductive Health Survey. 2003. Federal Ministry of Health, Abuja.

Federal Ministry of Health Nigeria (2005). National HIV and AIDS and Reproductive Health Survey. 2005. Federal Ministry of Health, Abuja.

Joint United Nations Programme on HIV/AIDS (UNAIDS), AIDS Epidemic Update, 2002. <http://www.unaids.org/worldaidsday/2002/press/ Epiupdate.html>, accessed Jan. 16, 2003. 4.

Nicholas M. ,Marleen T.& Scott G. (2012) A decade of research involving menwho have sex with men in sub-Saharan Africa: Current knowledge and future directions. SAHARA-J: Journal of Social Aspects of HIV/AIDS: An Open Access Journal. 9:3. 137-147. DOI:10.1080/17290376.2012.744176

UNAIDS. 2002. op. cit. (see reference 3). 7. Ibid. 8. Calculated from Appendix Table 5, col. 2. 9. Appendix Table 5, col. 5. 10.

UNAIDS, HIV/AIDS: China's Titanic Peril: 2001 Update of the AIDS Situation and Needs Assessment Report. 2002. <http://www.unaids.org/ whatsnew/newadds/AIDSchina2001update.pdf>. accessed Jan. 14, 2003.

WHO. Global Prevalence and Incidence of Selected Curable Sexually Transmitted Infections. 1999. <http://www.who.int/docstore/hiv/GRSTI/002. htm>. accessed July 7. 2002.

World Health Organization (WHO), World Health Report 2001, Geneva: WHO. 2001.

Informed Consent Form

Sexually Transmitted Infection (STI) Treatment Service Utilization by HIV high risk groups in Lagos Nigeria

Introduction and informed consent process

Hello, my name is_____. I work forNwafor Samuel Uchenna, a Student of University of Ibadan who is currently working to improve the health of HIV vulnerable populations in Lagos by conducting his Masters of Public Health Research in Lagos. The student (Nwafor Samuel),in collaboration with the Department of Epidemiology and Medical Biostatistics, is conductinga research to determine Sexually Transmitted Infection (STI) treatment service utilization by HIV high risk groups (Men who have sex with Men –MSM and Bunk Based People who inject drugs-BBPWID) in Lagos. The results of this study will be used to improve HIV prevention services for MSM and BBPWID in Lagos. Your participation is voluntary. If you choose to participate, we will ask you a few questions, taking you approximately 10 minutes. Your personal information [name, phone number, address, sexual orientation, injecting drug habit] will be collected and will be handled confidentially. Your participation is important and will help us better understand the Sexually Transmitted Infection (STI) treatment service utilization level by MSM and BBPWID in Lagos.

If you have questions about the study, you may speak to Nwafor Samuel Uchennaat +234 8035177903

If you have any concerns regarding your rights as a participant, you can contact the academic supervisor on email ofawole@gmail.com or uche.samuel01@gmail.com

Are you willing to participate in this study?

_____

Respondents Signature and Date

Sexually Transmitted Infection (STI) Treatment Service Utilization by HIV high risk groups in Lagos Nigeria.

INSTRUCTIONS: CIRCLE AND WRITE IN FULL AS APPROPRIATE.

DATE:	UID NO:	LGA:	HOTSPOT:	
NAME:		TARGET GROUP: 1. MSM 2. BBPWID		

Interview completed by: Self; Others Specify (.....)

A	Background Characteristics	
Q1	Sex of respondent	Female.....1 Male.....2
Q2	Date of Birth (DD/MM/YYYY)	(DD...../MM...../YYYY.....)
Q3	How old are you? (in years)	___ ___
Q4	Education attainment	No education.....1 Vocational.....2 Qur'anic only.....3 Primary.....4 Secondary .....5 Higher 6
Q5	Marital status	Married .....1 Co-habiting.....2 Never married .....3 Formerly married.....4
Q6	Are you currently employed?	Employed.....1 Self employed.....2 Not employed.....3 Student.....4
Q7	How much did you make last week? (Average Income) **(MULTIPLY AVERAGE WEEKLY INCOME BY 4)**	Average Monthly income: ₦: .....
Q8	How long have you been living continuously in this community?	1-6 months.....1 7 months – 1 year.....2 >1 year.....3
Q8b	How long have you been practicing this anal sex/injecting behaviour?	1-6 months.....1 6months – 1 year.....2 >1 year.....3
B	**Access of services by MARPS**	Group
Q9	Have you had any of the following symptoms over the last 6 months? **(USE LOCAL WORDS TO EXPLAIN THE SYMPTOMS)**	

	Yes	No
Lower abdominal pain		
Genital Pain on urination		
Anal pain on defecation		
Anal itching		

		Rash around the anus				
		Smelly discharge				
		General fever				
		Severe cough				
		Body weakness/vomiting				
Q10	IF YES TO ANY OF THE OPTIONS IN Q9 ASK: Did you receive treatment?	Yes.....1 No.....2				
Q11	IF YES TO Q10 ASK: Where? If NO ask Q16		Yes	No		
		Public Hospital/ clinic				
		Private hospital/clinic				
		NGO				
		Pharmacy/Chemist				
		Traditional healer				
		Self medication				
Q12	Was their service friendly?	Yes.....1 No.....2 Don't no.....3 No response 4				
Q13	What motivate you to visit HF?	When I am sick----------1 When I feel Like----------2 Because they give money----------3 To get information----------4 Because they are friendly----------5 Others----------6				
Q14	Does the health facility provide you with all services you needed?	Yes.....1 No.....2				
Q15	Is the HF closer to the Bunk/hotspot?	Yes----------1 No----------2 Don't know----------3				
Q16	What are the reason why you don't go to HF often to access services.	Distance of HF----------1 No money----------2 Behaviour of HCG----------3 Others----------4				
C	BBPWID					
Q17	Do you take Psychoactive drugs (Drugs that make a person feel high)	Yes.....1 No.....2				
Q18	Do you currently live in the bunk and inject drugs?	Yes.....1 No.....2				
Q19	IF YES TO Q18 ASK: How long have you dwell in the bunk					
Q20	How frequently do you inject drugs?	None.....1 Daily.....2 Once a week.....3 Twice a month.....4				

Q21	How do you obtain your drugs? (Prompt respondents)	At work.....1 Sexual Partner buys drug.....2 Transactional means.....3 I hustle to get money for the drug------4 Others.....5
Q22	What type of drugs do you inject? **(Multiple options possible)**	Heroin.....1 Cocaine.....2 Crack.....3 Amphetamine.....4 Fortwin.....5 Others.....6
D	MSM	
Q23	What age did you start having anal sex with men?	1.....Less than 18 2.....18-30yrs 3.....31 and Above
Q24	Do you meet male partners in any other location other than this location?	Yes..... 1 No..... 2
Q25	Do you have other female sex partners?	Yes..... 1 No..... 2
E	**Knowledge, opinion &attitudes towards STI**	**Knowledge, opinion &attitudes towards HIV and AIDS**
Q26	Can a person get HIV through mosquito bite?	Yes..... 1 No..... 2
Q27	Can STI/HIV be transmitted through sharing of toilet with an HIV infected person?	Yes..... 1 No..... 2
Q28	Can one avoid getting HIV by staying faithful to an uninfected partner?	Yes..... 1 No..... 2
Q29	Can one avoid getting STI/HIV by using condom evety time?	Yes..... 1 No..... 2
Q30	Can a healthy looking person be STI/HIV positive?	Yes..... 1 No..... 2
Q32	If a female relative of yours becomes ill with AIDS, would you be willing to care for her in your household?	Yes..... 1 No..... 2
Q33	If a female teacher has HIV but is not sick, should she be allowed to continue teaching in school?	Yes..... 1 No..... 2
Q34	If you knew a shopkeeper or food seller who has HIV, would you buy food from him/her?	Yes..... 1 No..... 2

Thank you for participating in the research.....

Study Referral Coupon

Facility/Center:.....

Contact Person:.....

Contac t Phone:.....TG.....

Address of Interview site:.....

Person Reffering/Location:.....Code: .....

New Code/No:1.....2.....3.....

Sexually Transmitted Infection (STI) Treatment Service Utilization by HIV high risk groups in Lagos Nigeria. S/No. Date:

If this card is presented at your interview site, please extend the full extent of the services offered by this study at your interview site to the request of the participant. At the end of each day, we will come to retrieve the vouchers and register the respondents. Thank you for your cooperation.

Call helpline: 08035177903