

**FACTORS INFLUENCING UPTAKE AND ADHERENCE OF
MEN WHO HAVE SEX WITH MEN TO ANTI-RETROVIRAL
THERAPY CARE IN NIGERIA**

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FACTORS INFLUENCING UPTAKE AND ADHERENCE OF MEN WHO HAVE SEX WITH MEN TO ANTI-RETROVIRAL THERAPY CARE IN NIGERIA

A thesis submitted in partial fulfilment of the requirement for the degree of Master of Science in Public Health

By

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List of Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
ART	Anti-Retroviral Therapy
ARV	Antiretroviral
CBO	Community Based Organization
CD4	Cluster of Differentiation 4
CDC	Centre for Disease Control
CLAD	Community worker-led Antiretroviral Therapy Delivery
CMOs	Case Management Officers
EHAI	Equitable Health Access Initiative
FCT	Federal Capital Territory
FMoH	Federal Ministry of Health
FMs	Facility Managers
FSW	Female Sex Worker
GBMSM	Gay, Bisexual, and other men who have sex with men
GBV	Gender-Based Violence
GDP	Gross Domestic Product
GF	Global Fund
HAART	Highly Active Antiretroviral therapy
HCT	HIV Counselling and Testing
HIV	Human Immunodeficiency Virus
HIVST	HIV Self Testing
IBM	Information Behaviour and Motivation
IDU	Injecting Drug Users
KIs	Key Informants
KPs	Key Populations
LGA	Local Government Area
LGBT	Lesbian, Gay, Bisexual, and Transgender
MSM	Men who have sex with men
NACA	National Agency for the Control of AIDS
NAIIS	Nigeria National HIV/AIDS Indicator and Impact Survey
NDHS	Nigeria Demographic and Health Survey
OSS	One Stop Shop

OYSACA	Oyo State Agency for the Control of AIDS
PEP	Post Exposure Prophylaxis
PEPFAR	President’s Emergency Plan for AIDS Relief
PLHIV	People living with HIV
SDG	Sustainable Development Goal
SFH	Society for Family Health
SMoH	State Ministry of Health
STI	Sexually Transmitted Infection
TAS	Test and start
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNDP	United Nations Development Programme
USD	United State Dollar
WHO	World Health Organization

Definition of Key Terms

ART Cascade: ART cascade is defined as the stages in the HIV care continuum, which include: diagnosis of HIV infection, linkage to care, retention in ART care, and achievement of viral suppression(1).

Adherence: is the continuous utilization of ART services from the point of enrolment, drug usage and refill and other medical appointments for viral suppression. It is the extent to which a patient follow medical instruction(1)

Attrition: this is a sudden withdrawal from ART. Attrition may occur as a result of loss to follow up, death of the client and defaulting/disengagement from treatment by clients.(2)

Case Management Officers (CMOs): are PLHIV/MSM who were included in the community-based HIV program for accompany referral/tracking of reactive patients and follow up of PLHIV on ART.(3)

Highly active antiretroviral therapy (HAART): HAART is a treatment with a specified drug regimen called antiretroviral drugs (ARV: Dolutegravir and tenofovir based regimen and Lamivudine), found to be active to suppress the growth of HIV, the retrovirus responsible for AIDS. HAART is not a cure for HIV but minimizes the rate of replication of the virus. HAART is often used to describe antiretroviral therapy (ART).(4)

Key Populations (KPs): KPs in Nigeria are often described as Key Affected Populations (KAP), which comprises of the Men who have sex with men (MSM), Sex workers (SW) and Injecting Drug Users (IDUs). These are people whose lifestyle sexual orientation make them vulnerable to HIV.(5)

One-Stop-Shop (OSS): OSS is community-based ART facility supported by internal donor agency for the provision of HAART for MSM, FSW, IDUs and others that identified with the KPs including transgender(6)

Retention in ART Care: retention in ART care means regular engagement of persons living with HIV with medical care at the ART clinic in the health facility after linkage into the system(7).

SDG 3: fighting against leading communicable disease, Indicator 3.3: By 2030, end the epidemic of AIDS, tuberculosis, malaria and tropical diseases. 3.3.1 Number of new HIV infections per 1,000 uninfected population, by sex, age and key populations(8).

UNAID vision 95-95-95: By 2030, 95% of PLHIV should know their status, 95% Linkage of known cases, 95% of Viral suppression achieved among linkage(9).

Men Who Have Sex with Men (MSM) :A man who has sex with other men is defined as any male 15 years and above, resident in the respective state at the time of the survey, who has engaged in oral or anal sexual activities with other men in the 12 months preceding the survey.(10)

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Abstract

Background

Men who have sex with men (MSM) and their partners contribute 10% of new HIV cases in Nigeria. Uptake and Adherence to ART by MSM is very crucial to the achievement of viral suppression, which may have a positive externality on their sexual partners, as virally suppressed HIV positive MSM are less likely to transmit HIV to uninfected partners

Objective

The objective of the study is to investigate the factors influencing uptake and adherence to ART among MSM in Nigeria in order to improve HIV/ART programs for MSM in Nigeria.

Methods

The study adopted the use of literature review and desk study. I also reviewed grey literature and peer reviewed journals that focus on MSM and HIV services primarily in Nigeria and other Sub-Saharan countries for the study. To validate and further inform the findings, semi-structured interview was conducted among five stakeholders in the MSM community.

Findings

The finding revealed the different sociocultural/policy, institutional/community, inter and intra personal factors influencing uptake and adherence of MSM to ART care in Nigeria. MSM criminalization, human right abuse, MSM friendly services and financial constraints are among the barriers and facilitators reported in the study.

Conclusion and Recommendation

The 2014 Same-Sex Act that criminalize MSM and related activities was found to be associated with the increase in HIV prevalence among MSM. The study recommends an investment in more ART facilities to provide MSM friendly services to MSM in Nigeria. This may include funding for MSM HIV programs and human right protection to improve access to comprehensive ART services.

KEYWORDS: Uptake, Adherence, Antiretroviral Therapy, Gay men, Nigeria

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INTRODUCTION

I am a Key Population Specialist with background discipline in social science and a Masters in Health Promotion and Education from a university in Nigeria. I have over 10 years' experience of designing and managing developmental projects for hard to reach and other key populations in Nigeria with support from international donors like Population Council, Elton John Foundation, and Global Fund. I coordinated the activities of the program staff, facilitated meetings, advocacy and provided support and supervision to key population led community-based organizations.

Before coming to The Netherlands in September, 2019, I managed the Global Fund New Funding Model (GF NFM) HIV Project for MSM in South-West, Nigeria (Lagos and Ibadan) and my organization won another grant to include female sex workers and injecting drug users in other parts of Nigeria from the same donor sequel to the success of the GFNFM HIV grants. We provided biomedical, behavioural and structural HIV support to more than 3000 MSM, enrolled over 300 HIV positive MSM to ART care and achieved 95% retention and viral suppression using One Stop Shop (OSS) ART facilities and other private ART treatment centres offering MSM friendly services.

The rising prevalence of HIV (23%) among MSM despite huge investment by the international donors is a concern for all. MSM and their partners contribute more than 10% of New HIV infection in Nigeria. The challenge of working on MSM intervention, especially the current project where adherence and achievement of viral suppression is highly important among MSM and other Key Populations is enormous. It is my intension to explore the factors influencing the uptake and adherence of MSM to ART care in Nigeria.

I hope to identify the various intra-personal, inter-personal, institutional/community, and sociocultural/policy factors influencing the uptake and adherence of MSM to ART care for informed programming in Nigeria.

CHAPTER ONE: BACKGROUND INFORMATION OF NIGERIA

MAP OF NIGERIA



1.1 Demography and Social Economic Status

Nigeria is located in West Africa with a total land area of 923,768 square kilometers, and shares borders with Cameroon, The republic of Benin, Niger, and Chad. Nigeria is the fourth largest country in Africa and Africa's most populous country, with an estimated population of over 200 million people (11). Though, from the last population census conducted in 2006, the aggregate figure from the 36 States and the Federal Capital Territory(FCT) was 140,431,790 people(12). It is a middle income earning country with a GDP of 397.3 USD Billion(11) with a growth rate of 2.6% and a life expectancy of 54.81 years. Nigeria is projected to grow to 392 million in 2050, to become the 4th most populous country(13). Nigeria's fertility rate is 5.1(14) and its poverty rate is estimated to be 52.1% from the 2019 national report on poverty and

inequality, with over 100 million Nigerians living within the poverty clusters of less than 1 dollar a day(15)(16).

Table 1: National profile

Population 200 million people	GNI per capita, PPP 5810 US\$	Health Expenditure (% of GDP 2019) 3.4%
Life expectancy at birth 54.81 years	Health expenditure per capita 118 US\$	Fertility rate (births per woman) 5.1

1.2 Ethnicity, Religion, and Population Distribution

Nigeria is a multiethnic nation with people of different languages spread across the country. United States Embassy in Nigeria identified 250 ethnic groups(17). Dominantly,, Yoruba, Hausa and Igbo are major ethnic groups in Nigeria and the official language in Nigeria is English while other languages spoken by Nigerians include Pidgin English, Yoruba, Hausa and Igbo among several other local languages(18).

Nigerians resides in 774 Local Government Areas (LGAs) in 36 states and the FCT in Abuja which also serve as the seat of National government(12). The 36 states and the FCT are grouped into 6 zones to encourage integration and collaboration among leaders in the federating states (**Check Annex 1** for the Map of Nigeria). Nigeria’s economy is majorly driven by crude oil exporting and agriculture, it also has the largest natural gas reserves in Africa(19).

Nigerians practice Islam, Christianity and traditional religion. The Constitution was designed using the religions and traditional norms as the guiding principle. Sharia Law was included for Muslims and Common Law for other Nigerians(18). Majorly, the Northern Region of Nigeria embrace Islam and Sharia Law is relatively practiced in some parts of the North. Certain restrictions are enforced to prevent activities perceived to be contrary to ethics of the religion. These include restriction on alcohol, sex work, open display of affection among people irrespective of the sexual orientation(20).

Nigeria’s cities are densely populated and people, irrespective of their language and ethnicity, are residing in the six regions. Lagos, Kano and Abuja are major commercial cities which attracts young people from every parts of the country(12). 59.8% of Nigerians reside in the rural areas, while the remaining 40.2% reside in the urban areas. The ratio differs in each state due to the cost of living

1.3 Health System in Nigeria

The Nigeria healthcare system is divided into primary, secondary, and tertiary healthcare sectors. These sectors are managed by the three levels of government in Nigeria. The local government that is not financially autonomous, and least funded is saddled with the responsibility of primary healthcare(21). The federal and state government manage the tertiary and secondary healthcare institutions through the ministry of health. Patients to doctor ratio in Nigeria is 2500 persons to 1 doctor(22). Private sector participation is very significant in every part of Nigeria, with their activities being regulated by the government agencies in the host within the federating states. 40% of the healthcare services are provided by the public sector, while the remaining 60% are rendered by the private sectors(23)(21). Out of pocket spending on health is over 70% of health expenditure(24).

1.4 Major Health Problems in Nigeria

Nigeria is faced with double burden of communicable and non-communicable diseases. Meanwhile, top 3 causes of mortality in the country are malaria, lower respiratory infection and Acquired immune-deficiency syndrome (AIDS)(25)(14). Among other low and middle income countries, Human immune-deficiency virus (HIV) and AIDS is the leading cause of death and disability(14). Nigeria is rated second country with highest HIV burden. With an estimation of over 3.6 million people infected with HIV, Nigeria contributes 10% global new cases and 14% of HIV related deaths in the world in 2013(26).

1.5 Human Right Concerns in Nigeria

Nigeria's constitution has the common laws and sharia laws imbedded in the judicial system. However, there are reported cases of extra-judicial activities by law enforcement agents, religious leaders and community groups. This put lives of minor offenders and others perceived to be acting against religious beliefs and society norms at risk of assaults and lynching in some extreme cases. The 2014 Same-Sex Marriage Act which criminalizes the MSM and other associated activities further contribute to human right abuse for MSM(27)(28)

CHAPTER TWO: PROBLEM STATEMENT, JUSTIFICATION, OBJECTIVE AND METHODOLOGY

2.1 Problem Statement

Human Immuno-deficiency Virus (HIV) is a viral infection that weakens the immune system (CD4/T cells) and makes the infected persons vulnerable to other opportunistic infections that may cause AIDS. The common method of transmission of HIV is unprotected sexual contact with an infected partner (29). Other methods of transmission include; sharing of sharp objects like needles with an infected persons, transfusion of HIV infected blood to an uninfected person, transmission from infected mother to her child during pregnancy(30).

Globally it is estimated that 32 million people have died from AIDS-related illnesses and 37.9 million people are currently living with HIV (PLHIV)(31). About 1.9 million Nigerians are currently living with HIV, with the national HIV prevalence estimated to be 1.5 million as at 2019(32). Between 2010 and 2017, 5% reduction in HIV prevalence was achieved. HIV prevalence also varies by regions in Nigeria. (Check Annex1). However, United Nation says Nigeria has the highest HIV prevalence in the sub-Saharan African(33).

About 24.5 million people were accessing antiretroviral therapy (ART) in the world at the end of June 2019(31), thereby reducing new cases of HIV by 40% since 1997 (1.7 million cases in 2018 compared to 2.9 million in 1997). Over 1 million persons are enrolled on ART in about 1500 treatment sites across Nigeria(34). ART has helped over the years in suppressing HIV infection, restoring immune function, improving health and decreases morbidity and mortality in places where HIV infection is most prevalent(35)(36).

The Key populations (KPs) and their sexual partners account for 54% of the new cases in the world as at 2018(37). Nigeria recorded 130,000 new cases in 2018(33),10% of this new infection was contributed by the men who have sex with men (MSM) and their partners(38). More than 26,000 adult male population are identified to have a sexual relationship with male partners in seven states and Federal capital territory in Nigeria(39).

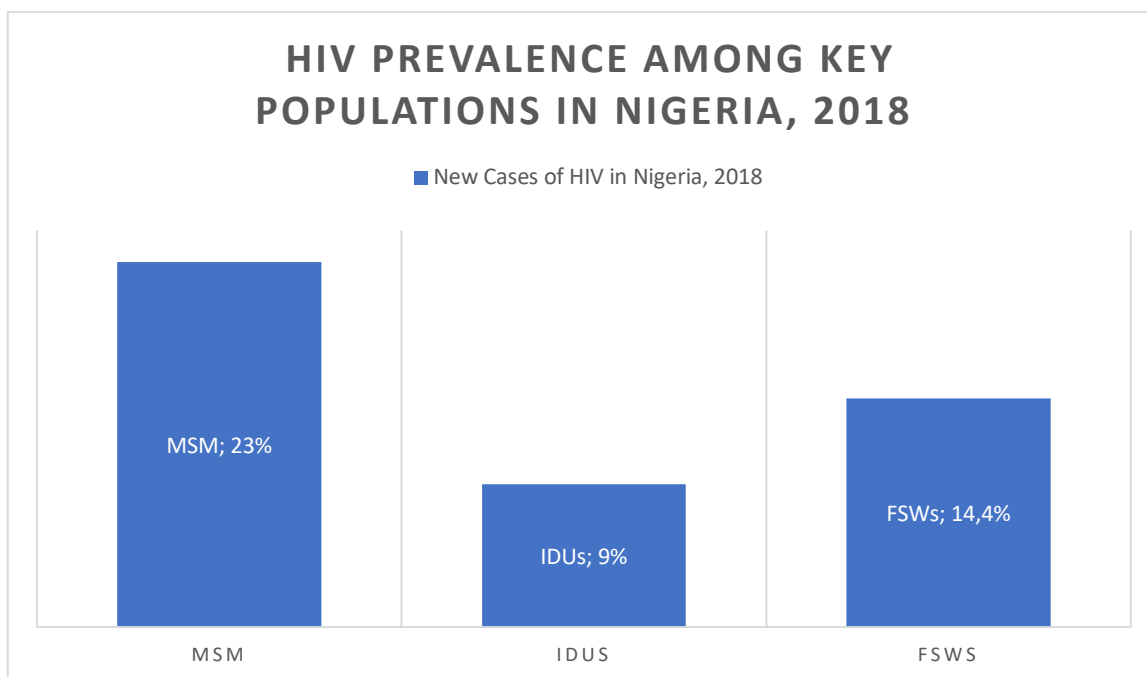
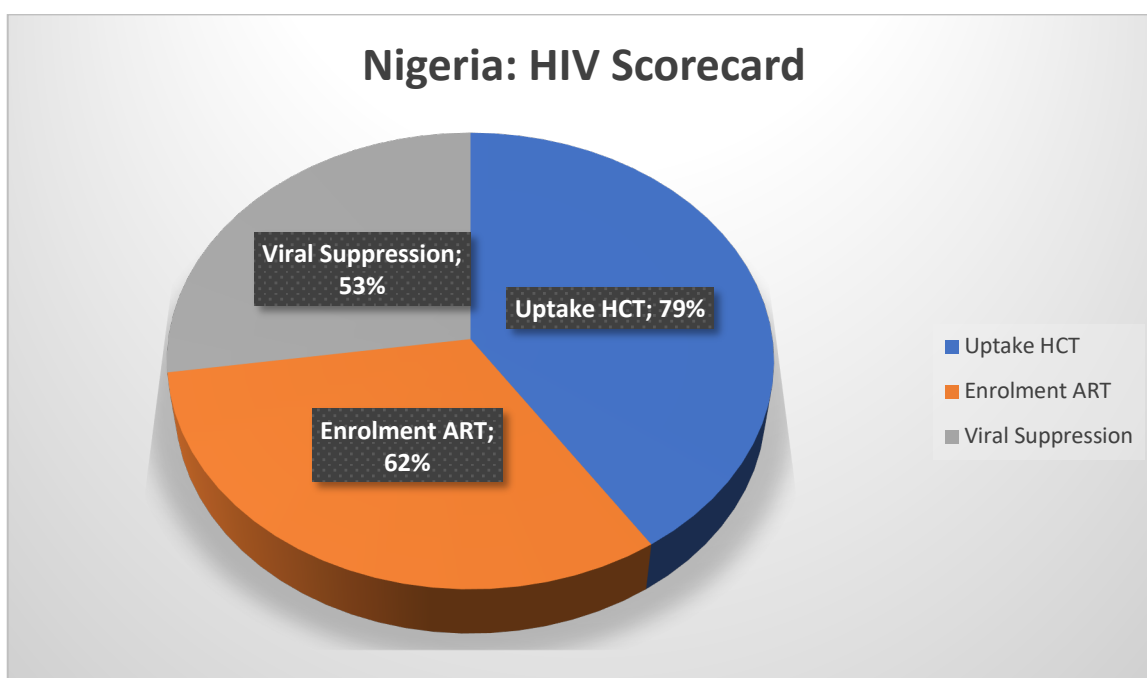


Figure1: HIV Prevalence Among Key Population in Nigeria

Source: UNAIDS (2018)

HIV prevalence among the MSM stood at 23%, significantly more than other high-risk groups. Together with their partners, MSM group is estimated to constitute 1% of the adult population and account for 10% of overall new HIV infections in Nigeria annually(38)(40).



Source: (41)

Figure 2: Nigeria’s Achievement of UNAIDS 90-90-90 vision 2020

The above diagram shows the scorecard of Nigeria and the impact on investment for the achievement of vision 2020. 90% of persons living with HIV are expected to be aware of their status, meanwhile, only 79% are aware, 62% were linked to ART care, and 53% of those enrolled to ART care had viral suppression (see figure 2)(41). MSM are mostly deprived of the ART services due to sociocultural, institutional, interpersonal and intrapersonal factors constituting barriers for them to access HIV services in the health facilities(33)(42).

The MSM are the only group with rising HIV infections since 2017, while prevalence among other key populations (FSWs and IDUs) decreased(33)(43). In a 2015 survey among key populations, 80% of MSM access HCT in Nigeria with support from international development organizations(44). The study by UNAIDS also recorded that 82% of MSM reportedly used condoms at last sex with a male partner(33). Yet, MSM still account for high HIV new infection within the KP community (see figure 1)(33).

A study conducted among MSM in 2018 in Lagos state, Nigeria by Population Council, shows that 83% of registered ART clients were retained in the health facilities. The study identified distance (50%) and full-time job (30%) as major barriers to adherence, while friendly clinic service (43%) was identified as the major facilitator for the adherence to care among MSM(43). Other barriers affecting adherence among MSM identified include: ARV drug side effects, cost of care (including user fee), transportation and client profiling/stigma from some healthcare providers.(7).

2.2 Justification

MSM and their partners contribute 10% of new HIV cases in Nigeria(38)(40). Poor uptake and adherence to ARV increases the chances of transmitting HIV from one infected person to his partner. Adherence to ART by MSM is very crucial to the achievement of viral suppression, which may have a positive externality on their sexual partners, as PLHIV with viral suppression are less likely to transmit HIV(45). Enrolment to care is necessary to ensure ongoing receipt of ART, continuous evaluation of emergence of medication toxicities/ side effects, and to identify the occurrence of treatment failure that requires a switch in ARV regimens(4). It also provides additional benefits like social support, and secondary prevention messages that can help patients navigate a lifelong and complicated infection(46).

Defaulting from ART care increases the danger of drug-resistant HIV, failure in the achievement of viral suppression, increases new infection, and death. Prevalence of HIV is high among MSM hence, adherence to ART is important. The focus of many researchers and available publication has been on the general population and HCT among KPs.

Few studies are available on adherence of MSM to ARV. Hence the aim of this research is to partly fill this knowledge gap by identifying factors influencing adherence to treatment among MSM in the HIV trajectory response toward reducing new cases of HIV in Nigeria and achieving UNAIDS vision 95-95-95(9). It behooves stakeholders in all sectors to ensure the 95% of people living with HIV are aware of their HIV status through HIV counseling and testing. Out of the tested persons, 95% of them should be linked and retained in ART care. And finally ensuring that 95% of these PLHIV achieve viral suppression by 2030(47). For this to be achieved, it is expedient to explore the group which is less than 1% of the nation's population and having the highest prevalence(23%) and contributing 10% of overall new cases of HIV. Hence, the focus of the study is on factors influencing the uptake and adherence to ART among MSM in Nigeria.

2.3 Research Objectives

The objective of the study is to investigate the factors influencing uptake and adherence to ART among MSM in Nigeria. The sub-objectives of the study are the following:

1. To explore the intra-personal and inter-personal factors influencing ART uptake and adherence among MSM in Nigeria
2. To explore the institutional and community factors influencing ART uptake and adherence among MSM in Nigeria
3. To explore sociocultural/policy factors influencing ART uptake and adherence among MSM in Nigeria
4. To analyse effective interventions in Nigeria and other countries to improve ART uptake and adherence among MSM
5. To make recommendation to key stakeholders in their commitment to the achievement of UNAIDS 95-95-95 targets (95% enrolment, 95%retention and 95% viral suppression) by 2030 without leaving MSM behind.

2.4 Methodology

2.4.1 Review of literature

The study adopted the use of literature review and desk study. I also reviewed grey literature (Project reports, health policy, and NDHS) and peer reviewed journals that focus on MSM and HIV services primarily in Nigeria for the study. In addition, materials from other Sub-Saharan countries that share similar characteristics with Nigeria were also reviewed for the research.

With the aid of the conceptual framework, I explored the factors influencing uptake and adherence of ART service from studies carried out by other researchers and organizations whose primary focus is on KPs and MSM in particular. Peer reviewed journals, articles and reports that match the study objectives were included for review. All selected articles were in English Language and only materials published between 2005 and 2020, discussing ART care among MSM/KPs in Nigeria and other countries with similar characteristics in the Sub Saharan were adopted. Unpublished reports from MSM-led organizations currently implementing the Global Fund New Funding Model HIV project for MSM in Nigeria were also used by the researcher for triangulation.

2.4.2 Search Strategy

The researcher searched for related literature by navigating various internet search engines and electronic libraries with the use of keywords. Relevant documents were downloaded from WHO, UNDP, CDC, FMOH Nigeria, UNAIDS and World Bank websites for the study. Google Scholar, Cochrane database, PubMed search and other social science-related database were also used by the researcher. In addition, VU online library was used to access materials with no open access. Articles selected for the study were based on HIV care engagement and ART adherence among MSM, drivers and social determinants of retention and drop out in ART among the MSM population. (See **Annex 2** for keywords combination).

The researcher also makes use of other available information for the study. This information includes findings from ongoing project implementation, activity reports of implementing partners on HIV, and past project publication from their facilities.

2.4.3 Stakeholder Interview

To validate and further inform the findings, semi-structured interview was conducted among five stakeholders in the MSM community on factors influencing uptake and adherence of MSM to ART in Nigeria(See Annex 3 for the Topic Guide). These key informants were selected based on their professional experience in MSM HIV/ART services

Table 2: Profile of Key Informants

S/N	Key Informants	Discipline	State(s) Worked	Years of Experience	Services provided to MSM	Organization
1	Key Informant A	Medicine	Akwa-Ibom and Oyo	6 years	Medical ART care	Global Fund ART Facility
2	Key Informant B	Psychologist	Ekiti Oyo kaduna	5 years	Psychosocial HCT Linkage Human Right	MSM CBO
3	Key Informant C	Biochemist	Akwa Ibom Edo Abia	5 years	HIV Behavioural and biomedical	MSM CBO
4	Key Informant D	Public Administration	Oyo	8 years	HIV programs Behavioural and biomedical	MSM CBO
5	Key Informant E	Physiotherapist	Lagos Oyo	5 years	HIV program Manager	NGO

Each of the interviews was conducted online within the duration of one hour, and consent form was issued to the selected key informants before the interview (See Annex 4 for Consent form). I transcribed the interviews between 24 hours after each interview and organizes the

information collected using Microsoft excel. Data from the manuscripts and the jottings were coded into themes for the validation of the findings from literature.

2.5 Conceptual Framework

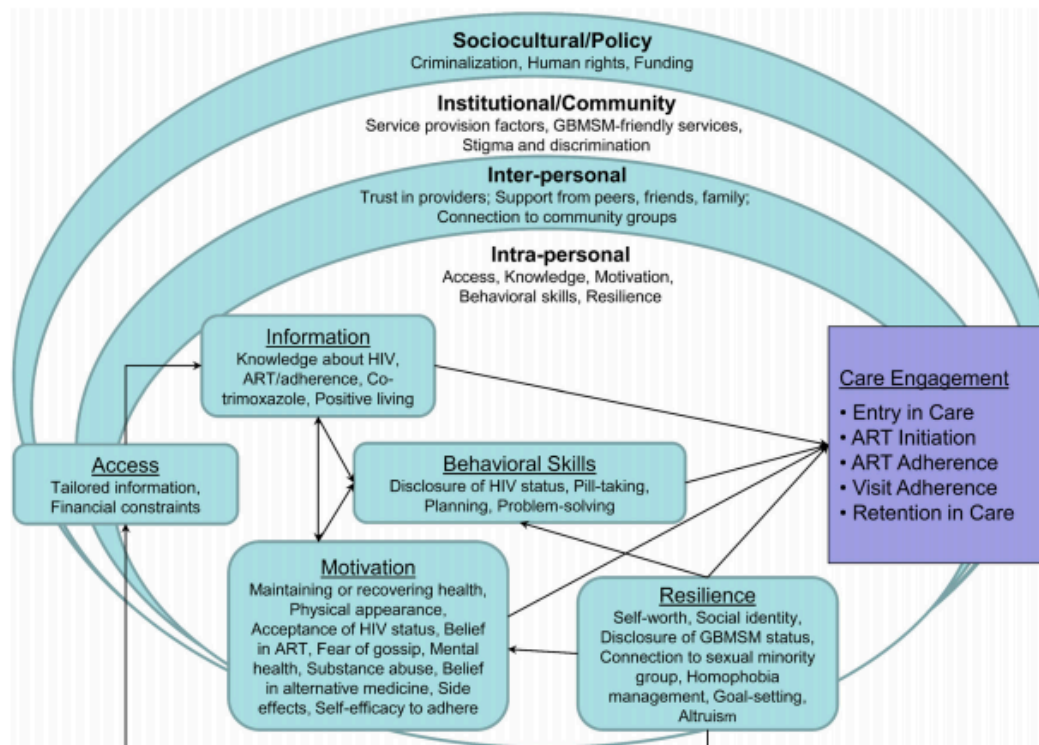


Figure 3: Final situated Access-IMB model(42)

The conceptual framework for the study is the Final situated Access, Information, Motivation and Behavioural Skills Model (Access-IMB). The model is an improvement on the IMB model designed to conceptualize ART adherence among persons living with HIV.

Fisher and Fisher (2006), found adherence-related information, motivation and behavioural skills to be fundamental determinants of ART adherence(48). However, during a study among MSM in Kenya, Graham et al. saw the need for more construct and additional levels to evaluate other determinants of ART uptake and adherence among MSM. These include: Access, Sociocultural/ policy, Institutional/Community and other components attached to the patients and their networks(42). The model provides a comprehensive structure for assessing health and quality of life needs, health promotion and other public health programs design to meet health needs.

The Final situated Access-IMB model was used by researchers for a study on HIV care engagement and ART adherence among Kenyan Gay, Bisexual, and other men who have sex

with men (GBMSM). The model has 4 constructs which include: Sociocultural/Policy, Institutional/Community, Inter-personal and Intra-Personal levels. The stages in the process of treatment engagement are: entry in care, ART initiation, ART adherence, visit adherence and retention in care(42). It is an expanded model adopted by Graham et al. 2018, for study of HIV care engagement and ART adherence (42). It has been successfully used for related studies on ART among MSM in Sub-Sahara Africa. The conceptual framework takes both individual and environmental factors as key constructs that determine human behaviour. Hence, the researcher adopted the conceptual framework.

Ethical Consideration

Ethical clearance to conduct the study was granted by the KIT ethical review committee. A waiver was approved to conduct interview with the key informants on their professional capacity using virtual platforms. Informed consent form was signed by all participants before the interview. **(Check Annex 5 for waiver approval)**

CHAPTER THREE: STUDY RESULTS/FINDINGS

This chapter address the research objectives using the four layers of the conceptual framework. These four layers include;

- i. Sociocultural/Policy factors
- ii. Institutional/Community factors
- iii. Inter-Personal factors
- iv. Intra-Personal factors

According to the theoretical model, the four mentioned layers are responsible for care engagement and viral suppression. These factors are reported in different articles as facilitators and/or barriers faced by MSM in the uptake of ART before enrolment, i.e. from the confirmatory test, to other consultations with health workers with the ART facility. Other factors in the framework represent the experience of MSM outside the ART facility. These include family and other social network whose attitude influences the willingness of MSM to enrol in ART and retained for HIV viral load to be suppressed.

Lastly, I will also be analysing some effective interventions in Nigeria and other countries to improve ART uptake and adherence among MSM. Where possible I presented data on MSM and in the absence and/or paucity of data I presented data from key populations and general population instead. I will be describing the findings from the literature/documents reviewed and complement this with the findings from the stakeholders' interview.

3.1.0 Sociocultural/Policy Factors Influencing Uptake and Adherence to ART among MSM

3.1.1 Criminalization

In 2013, a bill to criminalize all same sex activities became punishable with a penalty of not less than 10 years in prison to persons and organizations identified in the 36 states and Abuja(27). Twelve states in the northern part of Nigeria where sharia law is in practice give maximum penalty of death by stoning to persons identified as MSM(49). As at 2020, report of arrest and men standing trials for identifying with same sex orientation was published by civil rights organizations(50)(51).

The same Sex Marriage Prohibition Act, 2014 states” *Any person who has carnal knowledge of any person against the order of nature...or permits a male person to have carnal knowledge of him or her against the order of nature, is guilty of a felony, and is liable to imprisonment for fourteen years*” (Same Sex Marriage (Prohibition) Act, 2014)”(27)

UNAIDS and Global Fund, a major donor for MSM HIV programs on 24th January, 2014 made a release on Nigeria's same-sex act; their concern was on the atmosphere which may prevent access to essential HIV services to the MSM in Nigeria and equally criminalizes any individuals and/or group of people who support MSM operation, organizations, meetings in Nigeria(52). A national newspaper in 2017 reported the arrest of 42 MSM having a meeting in an hotel in Lagos state, South-West Nigeria(53).

Schwartz et al. (2015), in a cohort study on immediate effect of the same-sex marriage prohibition Act on stigma, discrimination and engagement on HIV prevention and treatment services among MSM in Nigeria (Pre-law n=756, Post-law n=420), the study found that fear of seeking healthcare was significantly higher among selected MSM in post law-visits than in pre-law clinic visitations. 38% of 161 MSM in post-law reported fear of seeking health care compared to 25% of 187 MSM in the pre-law(54). The key informants agreed that the Same-Sex Act of 2014 is responsible for the increase in the prevalence of HIV among MSM in Nigeria. Most of the donor agencies withdrew their support in 2014 and many HIV positive MSM went into hiding to protect themselves from jail term, public flogging in the 12 Nigerian states where Sharia is practiced and possibility of public lynching which was reported in Abuja in the same year. Detailed findings on human rights abuse was reviewed in section 3.1.2.

Despite the introduction of the Same-Sex Act, the Federal Ministry of Health (FMOH), through the National Agency for the Control of AIDS (NACA) included the MSM in the National Strategic Framework on HIV and AIDS;2017-2021, based on the findings from 2014 IBBSS study that indicates high prevalence of HIV among MSM. This policy include the provision of comprehensive HIV services to MSM and other key populations (KP)(55). This policy allows major NGOs and donor agencies to collaborate with the FMOH to design and implement HIV services for MSM in Nigeria.

However, key informants confirm that despite the criminalization, some selected government hospital offers MSM friendly services and policy for free access of MSM and other key populations are included in the National guidelines of the Ministry of Health.

3.1.2 Human Rights

Stromdahl et al. (2019) in an assessment of stigma and human right violation among MSM in Abuja, Northern Nigeria with a focus on association of human right context which increases the risk of HIV acquisition and transmission among 297 MSM , reported that 36% of the sample

have been discriminated against due to sexual orientation and 17% reported being afraid to walk in their community. The study further shows various enacted rights violations, which include: 41% blackmail reports, 36% been beaten and 11% reportedly jailed due to sexual orientation(56). Sekoni et al. (2014) identified other human rights abuse and social oppression reported by MSM which include: aggression, alienation, verbal abuse, physical abuse, rape and psychological abuse(57). More human right abuses are reviewed in section 3.2.1, 3.2.3, and 3.4.5.4.

Makanjuola et al. (2018) in a qualitative study to explore the discrimination, mental health distress and coping among MSM in Nigeria, all the 19 participants believe they are at risk of lynching and other gender-based violence including arrest over sexual orientation disclosure. The MSM interviewed also reported that the criminalization of same-sex activities has created an avenue for law enforcement agents to harass and extort MSM in Nigeria(58).

Stakeholders agreed with the report of extortion by some law enforcement agents. Another twist to the human right abuse is the blackmail which is also perpetrated among MSM network.

3.1.3 Funding

According to Olakunle and Ndukwe (2015), HIV funding in Nigeria is majorly supported by international donors like Global Fund (GF), President's Emergency Plan for AIDS Relief (PEPFAR) and others. Public funding ranges between 17% to 25%, international sources varied between 74% and 82%, while private funding sources was between 0.5% and 1.6% between 2009 and 2012. Nigeria, like other 50 LMICs depends on international sources for over 75% of its HIV-related expenditure(59). Major donors are Global Fund to Fight AIDS, Tuberculosis, and Malaria and the United States President's Emergency Plan for AIDS Relief (PEPFAR)(60). In 2012, GF and Nigeria signed Grants worth \$335 million to fight HIV and Tuberculosis. The target of the grant include MSM and other KPs for increase in the uptake of ART(61). Key informants also confirm the two sources of funding namely: GF and PEPFAR. Apart from regulation and monitoring, no financial contribution is coming from the national and state government. Donor funding for MSM project is limited to the One Stop Shop and few government hospitals selected and supported to provide MSM friendly services. The implication of this is that a large percentage of MSM in Nigeria are yet to be reach with comprehensive ART care due to the limited facilities offering comprehensive MSM friendly services.

3.2.0 Institutional/Community Factors Influencing Uptake and Adherence to ART among MSM

3.2.1 Service Provision Factors

MSM participants (n=181) in a study on retention in ART care in Lagos State South-West Nigeria, identify distance (50%) and full time job (30%) as major barriers to their retention to ART visits which are guided by hospitals' time schedules(62). Breach of privacy and confidentiality by healthcare workers and hospital structures make most ART clinic attendees uncomfortable and fail to adhere to ART care(63).

Waiting time is another service provision factor identified as a barrier to uptake and adherence of MSM to ART. In a study by Olowookere et al., (2012) on reducing waiting time at a Nigerian HIV treatment clinic: opinions from and the satisfaction of general population living with HIV, 70.6% of 400 participants wanted waiting time to see the doctor reduced. Waiting time often discourage PLHIV from keeping ART appointments and can lead to poor adherence to ART(64). In a similar study in South-South Nigeria, Maduka (2019), found waiting time as a result of crowd attending ART clinic as major barrier to ARV drug refill and adherence. ART clients wait up to 3-5 hours for their turn to see ART doctors(65).

ART services are provided to MSM and other KPs using donor supported community-based test and start (TAS) model in seven priority states in Nigeria(66). Community-based TAS involves same day testing, enrolment to care and continuous recipient of comprehensive ART services (6). In a KP study in 2016, Onovo et al., found more MSM enrolled to ART through community-based TAS compare to other ART clinics in Nigeria. Among 17,395 KPs who received HTC in 8 high priority states among MSM in public and OSS ART facilities, 79% were attributed to OSS. Among 601 HIV positive KPs, 412 were linked to ART care in the OSS(67). Findings from OSS and other ART facilities providing MSM friendly services is reviewed in 3.2.2.

However, limited Community-based TAS facilities are available in Nigeria(68). Afe et al. (2019), reported 96% uptake and 95% adherence among 260 positive MSM in 16 LGAs in Lagos state (South-West Nigeria)(69). This was corroborated by a key informant who shared experience of his encounter during a follow up on client. "The ART healthcare worker was using microphone and loud speaker to call names of persons attending ART clinic. I challenged her not to out(expose) people but she said there is no alternative". Most ART clinics/departments in Nigeria are still labelled "Heart2Heart" centre, and MSM profiling was

reported in some facilities. This further discourages MSM attending the ART for enrolment and/or further their treatment.

3.2.2 MSM Friendly Services

In a study on the effect of stigma on access and treatment outcome among MSM living with HIV in Lagos, South-West Nigeria by Ibitoye et al. (2020), MSM friendly community health worker-led ART delivery (CLAD) model has 60% ARV drug refill from 180 MSM compared to 22.4% drug pick from 446 MSM scheduled for appointments. CLAD model enhances ARV adherence through partnership with MSM groups to deliver ARV drug to MSM in their respective congregation. This is an attempt to minimize the logistic cost incurred by MSM to attend regular ART clinics. MSM on ART are allowed to ask a treatment partner and friends to collect ARV drugs refills on their behalf. Among the MSM in the CLAD model, 75% had viral load test and 74% had viral suppression(70). Daniel et al. (2018) also identified friendly clinics as a major facilitator for MSM adherence to ART in a Community Health Centre. 43% of the study participants (181 MSM) reportedly stayed in care because of the friendly services(62). Charurat et al. (2016), also find MSM friendly services to be key factor in uptake and adherence of MSM in ART care in Abuja, North Central Nigeria.

Among 186 HIV positive MSM linked to care in a trusted community centre providing comprehensive ART services, 70.1% disclosed to the health workers, 80% of the MSM linked to care achieved viral suppression in 6 months and 10% fail to follow up(71). Ochonye et al. (2019), found key populations to be more satisfied receiving ART services at peer led facilities than public health facilities, Citing providers patience to listen, confidentiality and privacy as key facilitators for adherence(72). This was also validated by the response from the key informants; “Before now ART uptake was a challenge among MSM, but recently there are MSM friendly facilities run by private organizations and selected government hospitals with trained frontline healthcare workers offering KP friendly services”. Trust in the healthcare workers and the ART facilities influence uptake and adherence of MSM to ART.

In Oyo state with 33 LGAs, OSS and four other ART facilities offering MSM friendly services are located in 5 LGAs. The last MSM estimate in 2018 identified hotspots of MSM in all the LGAs in Oyo. Hence, a good percentage of MSM in 28 LGAs may not have access to comprehensive ART service.

3.2.3 Stigma and Discrimination

Discrimination can be referred to as the act and/or behaviour that has the intention or effect of impairing the enjoyment of the fundamental human rights of others on an equal footing(73). The United Nations General Assembly in 2011, adopted a resolution in political declaration on HIV and AIDS to create enabling legal, social and policy frameworks in each national context to eliminate stigma, discrimination and violence related to HIV(74). As presented in section 3.1.1, the criminalization of MSM and all related activities further empowered the society to discriminate and stigmatize MSM. In a review of population-based articles on HIV stigma in Nigeria by Odimegwu et al. (2017), discrimination and stigma were found to be associated with low uptake of HCT. The authors further investigated three dimensions of perceived stigma (labelling, relationships and status) at individual and community levels. High level of stigma was associated with lower odds of HCT(75).

Adekemi et al. (2016), in the 3,537 responses received from undergraduates of two Nigerian universities, 56.8% of the respondents agreed that doctors and other health workers should be compelled to report MSM who comes for treatment. 23.7% non-medical students and 18% of medical students opposed the provision services to MSM by healthcare providers and MSM should not have access to HIV prevention services. Majority (84.6%) of the students believe MSM is not acceptable to Nigerian culture and not less than 69% of the respondents believe MSM should go to correctional centres for rehabilitation(76).

Stakeholders agree with the findings on stigma and discrimination experienced by MSM they interacted with in their professional capacities. Some MSM are called female names at their places of work and places of residence. In most trainings at the CBO, they are advised not to disclose their identity to the public to avoid being stigmatized and discriminated against.

3.3.0 Inter-Personal Factors Influencing Uptake and Adherence to ART among MSM

3.3.1 Trust in Providers

Balogun et al. (2020) in a study among MSM on ART reveal lack of confidentiality among health workers in the general and some private ART facilities in Abuja, North central Nigeria. The study participants also reported stigmatizing and discriminatory attitudes experienced from health workers during ART visits to Lagos health facilities(68). On the contrary, Maduka (2019) found satisfactory level of confidentiality in the ART clinic in South-South Nigeria(65). Key Informants interviewed also differs in their opinion on MSM trust in the ART providers. While some agree with high professionalism and confidentiality exhibited in the selected ART facilities offering MSM friendly ART services, stakeholders cited increase in cases of anal warts among MSM on ART treatment in some facilities where they could not disclose their MSM status for further examination. At every ART entry for MSM, the standard procedure include screening for STIs after confirmatory test from the laboratory. The doctor examines the genital areas and MSM are expected to disclose if he is a top or bottom (penetrative or anal receptive). Without proper disclosure, doctors may not see the reason to examine the anus for presence of genital warts and/or fungi.

3.3.2 Support from Peers, Friends, Family

Ramadhani et al. (2018), found MSM with support from peers and friends, to be more likely to commence ART treatment than other MSM with no support. The study also found association between MSM with support from their network and viral suppression which is a result of ART adherence(77). This was mentioned earlier in section 3.4.5.3 where connection to social network influence adherence of MSM to ART care.

Through the CLAD initiative, peers are allowed to assist other MSM on ART to pick up drugs. Kasumu and Balogun (2014), reported 82% (n=361) of the participants received encouragement to adhere to treatment from family and community members, 56.6% from their partners(78).

Key informants also validate this finding, stating cases of MSM receiving more information and encouragement from their peers. Mostly through the support group meetings and other meetings within their hotspot, coping skills are taught and experience on ARV side-effect sharing on ART coping strategies.

3.3.3 Connection to Community Groups

Ibitoye et al. (2020), found partnership between health facilities offering MSM friendly services and community groups to be key factors in ARV drug adherence. Connection to MSM-led community-based organizations (CBO) avails MSM the opportunity to utilize some ART services outside the clinic setting. ART services access at the CBO include ARV drug pick-up, counselling on ART, and tailored information. In a systematic review of impact of support groups on HIV clinical outcomes by Bateganya et al. (2016), 90% of the eligible studies (n=20) reported significant association between support groups and ART adherence among general population(79). However, Ndu et al.(2011) found no statistical significance between PLWHA (66.7%) that belong to support group and those who do not belong to support groups (54.3%) (80).

Key informants also validate the findings on effect of community groups and ART uptake and adherence among MSM. Community groups provide accompany referrals for MSM who are not aware of ART facilities offering MSM friendly services. MSM-led CBOs also provide human right support and also operate a “Safe House” for MSM living with HIV who are rejected by their family. This initiative has assisted many MSM to remain in care and achieve viral suppression.

3.4.0 Intra-Personal Factors Influencing Uptake and Adherence to ART among MSM

3.4.1 Access Factors

According to the WHO, there are 3 dimension to be considered for a successful entry and effective utilization of healthcare, these include: physical accessibility, financial affordability and acceptability of health services(81)(82). For successful uptake and adherence of MSM to ART care, ART services are expected to be physically accessible, financially affordable and acceptable to the MSM community. Similarly, the conceptual framework identified two constructs as the access factors responsible for HIV care engagement for MSM. These are: tailored information, and financial constraints.

3.4.1.1 Tailored Information

Balogun et al. (2020) reported that some facilities in Nigeria offering MSM friendly services are tailored towards the need of the men. However, the study was not specific on tailored

information provided to the MSM(68). WHO (2009), on priority interventions for HIV/AIDS prevention, treatment and care in the health sector suggested that intervention including information and education be tailored towards the needs of the affected population(83).

The key informants also agreed that only general information is available on radio and social media until lately when the recent Global Fund New Funding Model HIV project for MSM included MSM online platform on Facebook and other social media as method for interpersonal communication through the MSM-led CBO implementing the project. Tailored information is also provided to MSM during consultation on clinic visits. Although not all facilities in Nigeria provide tailored information to MSM, One Stop Shop (OSS) and some government health facilities offering MSM friendly services provide tailored information on ART, risk reduction, and regular adherence counselling to MSM on ART. During support group meetings, information on positive living and ART adherence is provided in groups and more clarifications are provided by case managers who are MSM living with HIV and enrolled in ART care in the same facility. Tailored information is among other factors that facilitate linkage and retention of MSM receiving treatment at the OSS and few other facilities offering MSM friendly ART services. There is also a concern of low awareness of its existence and limited structures available in few states of Nigeria(68).

3.4.1.2 Financial Constraints

ART uptake and adherence is affected by financial constraint among persons living with HIV and enrolled in ART care. According to Onwujekwe et al. (2016), HIV patient spent US\$2.11 on medical expenses and user fees, US\$3.05 on transportation and US\$0.90 on purchasing food on every HIV clinic visits(84). Health facilities were found to be charging fees for HIV related services. This was corroborated in another study on out-of-pocket expenditure on HIV/AIDS services in Nigeria by Ndukwe et al. (2018). The study calculated the 2011 HIV out-of-pocket expenditure to be US\$528 (85). Dauda et al. (2019) in a policy brief on elimination of all formal and informal user fees in the public sector for the access to all direct HIV services in Nigeria, found high prevalence (27%) of direct user fee for HIV services. This was corroborated by the findings of Ogunbajo et al. (2017), who found financial difficulty as a major barrier among MSM in accessing ART care in Ghana. ART expenses that are not covered by health insurance (medication cost, laboratory test, food and transportation) were mentioned in a study conducted among 30 MSM (75% unemployed) and this negatively affects uptake of ART(86).

More than 50% of the nation's population is in extreme poverty and MSM are likely to be affected. Adeoti et al. (2019), in a study among 400 patients receiving ART care in tertiary health facilities in Ekiti state found poverty to be the major challenge to adherence among PLHIV with 73.3% earning less than 140 dollars monthly(87). In a similar study conducted among 550 ART patients in Ilorin tertiary health facilities, Anyaike et al. (2019), found lack of money for transportation to the hospital (75%) as a major factor affecting adherence to ART(88). Due to financial constraints, Eluwa et al. (2019), in a study among 879, 1545 and 3611 MSM recruited in 2007, 2010 and 2014 respectively identified one-third of the participants in 2007 and 2014 had engaged in transactional sex. This was also associated to increase in HIV prevalence from 14% in 2007 to 23% in 2014(89).

Key informants validate financial burden incurred by MSM in ART treatment at both OSS and other facilities. Most MSM prefer to enrol in the ART clinics far from their residence to avoid meeting neighbours in the hospital. The cost of transportation is constraints to regular ART visit and adherence to treatment. The location of most ART clinics in Nigeria are far from residential areas. Apart from Lagos state, where a level of proximity with health centres and hotspots is seen. Other parts of Nigeria have their healthcare facilities centralized and a bit of a distance to MSM hotspots and residence. Key informants also cited cases of "Back hand" payment requested by frontline health workers (Record Officers) in some government health facilities offering ART services to MSM.

3.4.2 Information

3.4.2.1 Knowledge about HIV

In the report by the 2014 IBBSS, 64.9% of MSM have knowledge of HIV and correct prevention method. The indicators include: knowing that a healthy looking person can have HIV, staying faithful with one uninfected partner and using condoms consistently can protect against HIV(90). Sources of information include, radio, social media, peer education and others (90). Olowookere et al. (2012) identified gaps in the knowledge about HIV despite good knowledge among study participants (75.8%, n=318), 21.45% believe ART cured AIDS.

Majority of the respondents show lack of understanding of viral load and CD4 lymphocyte count(91). Kasumu and Balogun found a good knowledge among 83.1% of the study participants (n=361). This is also validated by the key informants, knowledge about HIV infection and transmission is very high among MSM in Nigeria. Apart from information provided at the health care facility, social media platforms for MSM like Facebook and

WhatsApp groups are platforms for health promotion and education. Most MSM identified unprotected anal sex put them at risk of HIV infection. However, knowledge of HIV is not associated with ART uptake and adherence.

3.4.2.2 ART Adherence

According to WHO (2018), ART adherence includes taking medication as instructed by healthcare provider in order to sustain viral suppression, reduce risk of drug resistance, improve quality of life and reduce the risk of HIV transmission(92). There is no specific data on ART adherence by MSM. Hence, the researcher reviewed the data from other studies on adherence among PLHIV.

In a study conducted by Heestermans et al. (2016) with average adherence score of 72.9% in 161922 HIV patients, counselling and education were found to be major determinants of adherence to ART care(93). Kasumu and Balogun (2014) found good knowledge of ARV efficacy among 65.9% of 361 patients retained in ART care. 75.6% of this cohort knew that missing ARV can lead to disease progression(78).

Adeoti et al. (2019), found patients suffering from anxiety and/or depressed to be less likely to be adherent to ART care (This will be discussed further under mental health 3.1.3.6), hence, the role of psychosocial support and adherence counselling for patients who enrolled in cares(87). Maduka and Tobin-West (2012), also found adherence counselling and follow up through text messages from the facility as factors facilitating adherence to ART among HIV positive clients in a study conducted at the teaching hospital in Port Harcourt, (South-South Nigeria)(94).

According to the key informants, some MSM contemplate suicide after been tested positive to HIV. Very few newly confirmed HIV positive MSM commence treatment immediately, hence, adherence counselling should be a continuous exercise in ART facilities for newly enrolled MSM. Common side effects and dosage are communicated, while clarifications are provided during the counselling sections. Strategies to monitor adherence to ARV drug like the selection of treatment partners are done to ensure adherence to ART among MSM living with HIV.

3.4.2.3 Co-trimoxazole

The WHO recommended Co-trimoxazole for HIV infected individuals, especially in settings with high infectious disease prevalence(95). The national guideline stated the Co-trimoxazole be given to all persons enrolled on ART(96). According to Suthar et al. (2012), in a study on effect of Co-trimoxazole, found reduced death incidence in ART patients taking it with their

ARV drugs. It is provided to patients on ART care in order to prevent opportunistic infection(97).

Okwera et al. (2015) found low knowledge of the benefit of Co-trimoxazole among ART clients in Uganda. Most of the participants believe ARV drugs and isoniazid preventive therapy for Tuberculosis do the same work(98). An informant validates this in an interview, stating the benefits and positive effect on treatment outcome. However, there are cases of rejection of Co-trimoxazole due to pill burden. MSM are most at risk to opportunistic infection, hence, it is provided along with other ARV drugs. Yet, adherence to Co-trimoxazole is difficult to confirm as well as its association with adherence to ART care.

3.4.2.4 Positive Living

There is paucity of literature related to positive living and ART adherence among MSM. Kasumu and Balogun reported 98.1% of participants(n=361) had positive attitude to ART(78). This was supported by Tumwikirize and Mokoboto-Zwane (2016) in a study on effect of PLHIV participation in support group in Nigeria, found association between support group attendance and positive living. Participants who attend support group meetings were more likely to adhere to ART, enhance self-efficacy to disclose to partners and reduce risky behaviours(99).

Key informants report that positive living includes all the skills learned and strategies adopted to cope with ART care. Through adherence counsellors, support group meetings and psychosocial support from MSM-led CBOs, some MSM living with HIV and enrolled in ART care and others in the state of denial are encouraged to embrace the new status. Positive living behaviour adopted includes prevention of reinfection through the use of condoms and lubricants, regular exercise, improved nutrition, partner reduction, safe sex negotiation, and adherence to treatment.

3.4.3 Motivation

3.4.3.1 Maintain or Recovering Health

Health concern was a major theme emerging from study among 50 HIV positive adults in Southwest Nigeria. Adedimeji et al. (2010), found the need to maintain health as a key motivator for uptake and adherence to ART(100). Okonkwoh (2011), found fear of being very sick again and fear of death as key motivators for enrolment in ART care and adherence among PLHIV in Lagos(101). There is no study on physical appearance and its relationship with uptake and adherence to ART. Nevertheless, 54.6% of respondents (n=361) in a study by Kasumu and Balogun strongly agreed that ART has positive effect on their health(78).

Key informants also agree with the findings, citing MSM concern for recovery from prolonged sickness that led to the discovery of their HIV status. Most MSM discover their HIV status when they visit the hospital to treat illness lasting beyond one week after several self-medication.

3.4.3.2 Physical Appearance

There were concerns on physical health by PLHIV on ART care. However, there is paucity of article on its relationship with ART uptake and adherence. Key informants mentioned good health and maintaining healthy living motivates some MSM to enrol in care and adhere to treatment. Key factor that motivates some MSM in the uptake of ART include skin disease, genital wart and other fungal infection.

3.4.3.3 Acceptance of HIV Status

Olowookere et al. (2012), reported positive attitude among majority of HIV positive participants (n=318), 84.0% believed they can have a better future(91). Maughan-Brown et al. (2020), identified doubt among newly diagnosed HIV positive individuals in South Africa. The study also shows that uptake of ART is less likely among those who doubt their HIV status compared to others who accepted their test result(102). Key informants confirm positive attitude in some MSM to their HIV status. Perhaps they were well prepared during the counselling session before and after the HIV test was conducted.

However, some MSM just take some time to accept the result and enrol in ART care. Most of the MSM do not come back until they are sick and/or have skin disease and anal warts.

3.4.3.4 Belief in ART

In a study among PLHIV enrolled in ART care treatment clinic, 83.6% of 318 participants believed that ART helps to prolong life(91). Adefolalu et al. (2014), also found strong belief in ART care held by participants with a mean score of 4.05 out of 5. This demonstrate that the patients believe in ART care for the management of HIV and equally motivates patients' adherence in the facility (81.5% adherence among 232 ART patients)(103). Key informants agree with the findings. Most MSM they have interacted with also believe in the efficacy of the ARV drugs and its effectiveness on their health.

3.4.3.5 Fear of Gossip

Balogun et al. (2019) in a qualitative study among MSM in Nigeria reported concern for confidentiality in the public health facilities(68). In a study among MSM and transgender women in sub-Sahara Africa, Mbeda et al. (2020), identified 29.2% of the participants have worries people might discover their sexual involvement with men in the health facility and 13.9% heard health workers gossiping about them(104). The fear of been seen in ART clinics is among barriers identified among majority of MSM in a study conducted in Ghana. They were discouraged from engaging in ART care because of been seen in a known health facility filling forms or receiving treatment(86). Lyon et al.(2016), also found related concern among MSM 17.7% (n=128/724) receiving ART care in Senegal(105).

Key informants confirmed that the findings, citing cases in the general hospitals. Some health workers also use the opportunity to preach repentance and religion to MSM. However, with the introduction of OSS and other community-based ART facilities, MSM now have alternatives. The selected general hospital offering MSM friendly services have been trained to maintain confidentiality with MSM clients enrolled in ART.

3.4.3.6 Mental Health

Oginni et al. (2017), found stress factors like perceived stigma and concealment of MSM status makes MSM to be depressed and suicidal compared to heterosexual men in Nigeria(106). HIV positive MSM carry double stigma and social interaction is minimised in few cases when they are exposed in the midst of heterosexual people. Makanjuola et al.(2018), in a qualitative study among 20 young MSM (24 to 30 years) reveals emotional distress experienced by MSM often creates suicidal thoughts and some ART facility do not offer psychosocial support to MSM

enrolled in ART care(107). Rodriguez-Hart et al. (2018), reported suicidal ideation and its association with HIV related stigma among MSM. Emotional distress and suicidal ideation following sexual stigma were also reported as barriers to uptake of HIV services among MSM in Lagos and Abuja. MSM in the study mentioned the need for psychosocial services in the ART facilities because of “a lot of victims of suicide”(108).

This was also confirmed by the key informants, noting poor access to the limited mental health professionals employed in the ART facilities providing MSM friendly services. However, psychologists were recently employed at the OSS to provide psychosocial support to MSM and other KPs with suicidal ideations and other mental health needs.

3.4.3.7 Substance Abuse

According to Tobin-West et al. (2017), 41.6% of MSM (n=101) in the study admitted regular use of alcohol and 19.8% agreed they use Indian hemp(109). In the IBBSS (2014), 15.4% of MSM reportedly use marijuana and few others use cocaine and heroin in the last 12 months before the survey(90). Ochonye et al. (2019), in a study on risk profile of KPs in Nigeria. Among 145 MSM in the study, 23.0% report use of psychoactive drugs and 29.4% injected drugs in the last 30 days of the survey(110). Nduguba et al.(2017) also found alcohol use as factors responsible for poor adherence among PLHIV in Nigeria(111).

In a review by Heestemans et al. (2016), use of alcohol was among the main determinants of non-adherence among PLHIV in sub-Saharan Africa(93). Sekoni et al. (2014) corroborated this findings in a study among 291 MSM. 56.7% confirmed alcohol use, and 11.0% reported the use of hard drugs, which negatively influences adherence to ART(112). This was also mentioned by the key informants stating cases of MSM poor adherence to ARV drugs due to the use of psychoactive substances which make them unconscious for more than 48 hours. This happen occasionally and some MSM do not remember to adhere to their drugs as a result of the lasting effects of the drugs injected.

3.4.3.8 Belief in Alternative Medicine

Awodele et al. (2012), identified the use of traditional herbal remedies among persons enrolled for ART care in Lagos, Nigeria. About 8.2% of the 354 patients used herbal drugs (ginger, jobelyne, garlic and aloe vera) with their ARV drugs for perceived immune booster(113). In another study conducted in Warri, Nigeria (South-South) among 135 ART patients, 37% (50

participants) use one form of alternative medicine. Among this 50 participants, 17 PLHIV (34.0%) used herbal medicine, 8 participants (16.0%) used spirituality, and 25 (50.0%) used nutritional supplements (Ufuoma et al., 2018)(114). This is further corroborated by the key informants stating cases of MSM using herbal products and faith healing. Some MSM disengaged from ART due to perceived miracle healing experienced on the prayer mountain.

3.4.3.9 Side-Effects

Awodele et al. (2012), identified dizziness, fatigue, nausea and vomiting as major adverse effects experienced by patients on ART treatment in Lagos university teaching hospital. Other side effects include: rash, abdominal pain, diarrheal and muscle weakness. Duration of the side effects last between 6 months to a year, depending on the body system(113). Anyaike et al.(2019), found avoidance of side effects (66.7%) as factor for poor adherence to ART among 550 patients receiving ART in tertiary facilities in Nigeria(88). Nduaguba(2017), also identified side effect as one of the factors and significant association with less than 100% adherence in a study among 361 ART patients in Lagos(111). This is also validated by the key informants. From the point of enrolment, ART doctors, adherence counsellors and pharmacists explain drug usage to MSM and common side effect which differs per individuals. While some adhere to the ARV drugs during the period of temporary experience of adverse drug effects, others discontinue due to the magnitude of the effects of the ARV drugs.

3.4.3.10 Self-Efficacy to Adhere

Self-efficacy for ART is the confidence in one's ability for treatment adherence. According to Akinoye et al. (2020) in a study on adherence among PLHIV(n=288) in ART facilities in Oyo state, 57.3% of the respondents have positive perceived self-efficacy to adhere to ART. 34.0% reported that "they felt upset to be seen in ART clinic"(115)

Adefolalu et al. (2014) also found a significant association between self-efficacy of ART patients and ART adherence. Among 232 participants attending ART facility in Pretoria, South Africa, 81.5% were adherent to care (103). Key informants could not ascertain the self-efficacy of MSM to enrol and adhere to treatment, as many MSM are motivated to enrol and remain in ART care when they experience weakness, skin rashes and other diseases associated with HIV. It also takes a lot of resources in counselling and psychosocial support by MSM-led CBOs to link newly positive MSM to ART. A higher level of self-efficacy to adhere is seen in some after a year on treatment and changes are experienced as a result of the ART care.

3.4.4 Behavioural Skills

3.4.4.1 Disclosure of HIV Status

Rodriguez-Hart et al. (2016), in a study among MSM in Lagos and Abuja (n=433) identified low level of HIV status among the participants (17.1% with main partners and 8.1% with casual partners). 69% of the participants reported they are bisexual and 12.7% was married or cohabitated with a woman(116).

Kasumu and Balogun (2014), in a study among 361 people living with HIV in South-west Nigeria found out all the participants disclosed their HIV status to at least one person. Most of them disclosed to their spouses (58%) and equally received support from their partners(78). Key informants differ in their opinion on HIV disclosure among MSM. Most MSM they have attended to at ART disclose their HIV status more to their friends that are also HIV positive and enrolled in the same facility.

3.4.4.2 Pill-Taking

ART pill is a treatment regimen that comprised of a combination of ARV drugs. A combination therapy of stavudine, lamivudine, and nevirapine in different milligram is orally taking along with TB prevention drugs and co-trimoxazole. The pill burden and the drug complexity are factors influencing adherence to treatment. Nduaguba (2017), found 79.5% of ART patients (n=361) reporting 100% adherence to drugs in the ART clinic in Lagos, Nigeria. However, 75 ART non-adherent patients cited forgetting and side-effects as a major reason for not taking pills(111). (Side-effect was reviewed in section 3.4.3.9) Pill overload was also mentioned in a study by Monjok et al. (2010) as a factor influencing adherence to ARV drugs(117). Key informants also validated this finding and added that some MSM have adjusted over time to the number of pills and improved their adherence to the pills. However, other factors influencing pill taking include work and privacy. Some MSM complained that ARV make them feel dizzy during work hours.

3.4.4.3 Planning/Problem-Solving

There is paucity of data on planning/problem-solving as related to uptake and adherence to ART among HIV positive MSM. Stakeholders interviewed reported that over the time through support group meetings and trainings from MSM-led CBOs, MSM acquire skills on planning and problem solving. This include negotiation skills, drug pick up, safe sex and medication adherence.

3.4.5 Resilience

3.4.5.1 Self-Worth/Social Identity

Self-worth and social identity are concerns for some MSM in Nigeria. Adebajo et al. (2012) found 78% of the respondents (n=1125) agreed they were glad to be MSM and 82% agreed their sexual orientation did not make them inferior. However, 40% of the participants agreed they will accept the opportunity to be heterosexual(118). The study did not investigate the relationship with uptake and adherence to ART.

Stakeholders confirm the good level of confidence exhibited by MSM in the clinic and in the midst of their cohorts. However, it is illegal to display MSM identity in public to avoid being the target for police extortion and society stigmatization.

3.4.5.2 Disclosure of MSM Status

Kokogbo et al. (2020), in a study on disclosure of same-sex sexual practices among 2557 MSM and transgender women (TGW), only 15% ever disclosed to a family member, 28.7% to healthcare providers, 7.5% disclosed to both and 63.8% of the participants did not disclose to anyone. It was also discovered from the study, that MSM who disclosed are more likely to experience stigma from healthcare workers/avoidance, blackmail, and other human right abuses as compared to participants who had not disclosed(119). Tobin-West et al. (2017), in a study among 101 MSM also found 33.7% of the participants are yet to disclose their MSM status to anyone and 45.5% had disclosed to friends(109).

Makanjuola et al. (2018), found risk of reprisal because of sexual orientation as reasons for unwillingness of some MSM to disclose sexual orientation (MSM status) to family, friends, and healthcare providers(107). This was further validated by key informants' report on MSM on ART during the interview. Most MSM on ART prefer to disclose their sexual orientation to trusted health workers than their family. "Some MSM were rejected by their family because of their HIV status, full disclosure of sexual orientation will further aggravate the rejection". Young MSM are still very dependent on their family and in the case of rejection, adherence to ART is affected

3.4.5.3 Connection to Sexual Minority Group

According to Ramadhani et al.(2018), larger network size and stronger social network support were positively associated with MSM HIV testing uptake, ART initiation equally increases the odds of achieving viral suppression at six months (77). Key informants also validated the importance of sexual minority groups in the uptake and adherence to ART. The effort of the MSM-led CBO is key to the success of HIV programs. MSM-led CBOs support new HIV positive MSM, and accompanied them to the treatment centres. The CBOs also use their offices for HIV counselling and testing (HCT) and drug pick up to ensure drug refills and drug adherence.

3.4.5.4 Homophobia Management

Okanlawon (2017), reported homophobic experience of students who are MSM in Nigerian universities. Verbal condemnation, labelling, threats, assaults, public ridicule and risk of expulsion from school by the authority. Strategies adopted by Lesbian, Gay, Bisexual and Transgender (LGBT) students in Nigerian universities include studying more for good grades, small scale business for financial empowerment, and denial of LGBT status. Some seek support from other LGBT students and NGOs that are sympathetic to the MSM community like House of Rainbow(120). Makanjuola et al. (2018) also reported concealment of gay status among other strategies adopted to protect themselves from homophobic attacks. Most of the participants reported humiliating experiences from healthcare workers, family, friends, and community members(107). Adebajo et al. (2012), in a study found 73.4% of 1125 MSM agreed that they have to pretend to be heterosexual to be acceptable by their family and friends to deal with homophobic disposition(121). Key informants agree that MSM face challenges in management of homophobic advances from the community who believe HIV is a “gay disease”. This discourages some MSM from the uptake and adherence to ART and utilization of public health facilities. However, many MSM are building their capacity to cope with cases of homophobia through the MSM led community-based organizations and the LGBT associations that coordinate and provide support for all the key populations in Nigeria. Also, MSM status is kept within the network of MSM to avoid rejection from family and community.

3.4.5.5 Goal-Settings

There was also paucity of study on goal-settings and its association with ART uptake and adherence to treatment by MSM in Nigeria. Nevertheless, Afe et al. (2017), found ability to set

realistic goals and objectives for ARV use among PLHIV, but no significant association with ART treatment (P=0.001). Key stakeholders mention goal settings as one of the topics discussed in the support group meetings and the behavioural skill taught in the behavioural intervention program among MSM in Nigeria. MSM over a period have learnt to set achievable short and long-term goals. Some have improved their adherence by setting related goals like achieving viral suppression in 6 months. This has improved the drug pick up and reduces risk among some MSM.

3.4.5.6 Altruism

There was no related study found on altruism and MSM ART uptake and adherence. However, Key informants mentioned lack of altruism in some cases where MSM who are aware of their HIV positive status put their partners at risk by engaging in unprotected anal sexual intercourse despite poor adherence to ART. But some other MSM are also aware the risk of reinfection with another strain of HIV. Hence, the need to protect themselves and also protect their partners by insisting on the use of condom and lubricants.

3.5.0 Effective interventions in Nigeria and other countries to improve ART uptake and adherence among MSM

Popcouncil Nigeria in partnership with the FMOH, PEPFAR, and the United State Agency for International Development (USAID) between 2017 and 2018, implemented HIV program among MSM in Lagos and Benue State using WHO community-based test and start model. A safe culturally sensitive place called One-stop shop where quality care and a non-discriminatory ART services were offered to MSM and other KPs was sited in major hotspots for KPs in order to minimize waiting time and other expenses required to attend government secondary and tertiary health facilities. Services offered to MSM payment include; STI screening and treatment, ART services, free condom and lubricant distribution and HIV outreach for other MSM in their hotspots(122).

Society for family Health (SFH) also adopted the same strategy to reach MSM in seven states in Nigeria with support of Global Fund New Funding Model for key population. Ugbona et al.(2018), in the study to evaluate the ART outcome in among MSM and other KPs enrolled at OSS between 2016 and 2017, found 69.5% of MSM (n=688) were retained in ART. 2.2% died, 4.7% transferred, 0.7% restart, 4.5% stopped and 18.5% lost to follow up(6). The stakeholders validate the effort of Global fund and the implementing partners (SFH, Popcouncil

and others) in providing comprehensive ART services for MSM in high priority states in Nigeria. They also carry out advocacy visits to government agencies to allow MSM to receive ART services without harassment from law enforcement agencies and human rights violation.

CHAPTER 4: DISCUSSION

This section reflects on the findings from the literature reviewed and its validation by the key informants using the conceptual framework as it relates with the objectives of the study. These include the intra-personal, interpersonal, institutional/community, and sociocultural/policy factors influencing MSM uptake and adherence to ART in Nigeria and other sub-Saharan countries. The results from peer-reviewed articles and grey literatures identified various factors facilitating and also constituting barriers to enrolment/linkage of HIV positive MSM to ART care and retention/adherence to treatment at the various ART facilities in Nigeria. Although the focus of the study is on MSM, some of the findings are from studies conducted among general population living with HIV, which may not be a true representation of the MSM. However, findings from the study are related to MSM in different dimension as MSM are the most affected due to the hostile climate created by the Same-Sex prohibition Act of 2014.

The effects of the criminalization include fear of seeking health care by MSM in Nigeria. Some private organizations providing HIV/ART services to MSM were more discreet and their services is only known to the MSM community within their area, there is no identifier for MSM who is not connected to MSM in that constituency to identify the facility. Hence, making uptake of ART difficult for MSM due to poor awareness OSS location. Although a good number of walk in MSM was recorded in some ART facilities, most MSM currently engaged in care at OSS and were referred to MSM friendly or community-based ART facilities through their peers and MSM-led organizations. Most of the MSM that are not connected to any MSM-led CBOs may find it difficult to access MSM friendly facilities.

Studies also found poor adherence among MSM after the law compared to the MSM enrolled in care before the law. The law further increases cases of human right abuse and stigma experienced by MSM in Nigeria. Funding of HIV programs was temporarily withheld between 2014 and 2015 by the donors Global Fund, USAID, PEPFAR and other international organizations. However, due to surge in HIV prevalence among MSM in the survey carried in 2014, these donor agencies returned to Nigeria and developed a partnership with the FMOH to provide MSM HIV services through the NGOs in Nigeria.

The conceptual framework limits Access factors to tailored information and financial constraints for MSM. Regarding the first of these aspects, stakeholders stated that awareness of ART facilities offering MSM friendly services is still very low among MSM in Nigeria. Findings from the studies shows that ART information tailored to suit the needs of the MSM

living with HIV is provided at the OSS and few other selected government and private ART clinics offering MSM friendly services. This tailored information is provided to MSM during personal interaction with frontline health workers which include the case managers, the adherence counsellors, the ART nursing officers and the doctors in charge of the ART facilities. More health education is provided at support group meetings and MSM-led organizations with working relationship with the ART clinics to improve uptake and adherence of MSM to care. This is not the case in other ART facilities where only general information on HIV is provided. As for the financial aspect, transportation cost and distance were identified as major factors influencing ART uptake and adherence. While finding from the study shows distance is both a barrier and facilitator, some MSM prefer to be enrolled in a facility far from their residence. Due to fear of being seen by neighbours and friends, some MSM prefer to travel to another state to enrol and continue ART care to avoid being seen by people they know. The MSM-led organization often accompany some MSM to the ART facilities to be enrolled in care and support MSM in far distance with financial support to attend clinic for viral load test. However, the sustainability of this intervention is not visible because the organizations are solely dependent on international donors.

Disclosure of HIV status among MSM is very selective, as they often keep HIV status as personal secret. Some MSM are connected to sexual minority groups which is a major influencer of linkage to ART care in community-based health facilities and other government hospitals offering MSM friendly HIV services. The conceptual framework did not take the role of MSM-led CBOs into consideration. Although studies show association between connection to community groups and improved uptake of ART among MSM, the role of follow-up services was ignored in the framework.

From the literature reviewed, more MSM are enrolled and retained in ART care in the community-based ART centres and OSS than the government facilities offering general ART services. They trust the health care workers in the former facilities and disclose their MSM status in order to receive thorough examination and care for other HIV related infections (like STIs screening). There were reports of lack of confidentiality among health workers in public and some private ART facilities. Community groups like MSM-led organizations provide safe housing for MSM facing rejection and ejection by family and guardians due to disclosure of HIV status and sexual orientation. They also assist with accompanied referral and a hotspot for drug refill and capacity building to improve self-efficacy to remain in ART care and achievement of viral suppression.

The studies identified numerous services provision factors influencing uptake and adherence of MSM to ART. These include: long distance of the health facilities, breach of confidentiality, long waiting time, and clinic structure discourage MSM from enrolment and adherence to treatment. However, community-based ART clinics and OSS are preferred by MSM because the listed barriers are not there except the fact that OSS is hidden and not easy to locate without the support of other MSM and MSM-led CBOs. MSM friendly services are provided, STI treatments are available and clinic visits is reduced through peer assisted ARV drug pick up. The services are flexible and tailored towards the needs of MSM and other members of the vulnerable groups.

Two relevant ART interventions for MSM were reviewed in the findings section. Major implementing NGOs for MSM in Nigeria include Popcouncil, SFH and EHAI. These NGOs provide HIV services to MSM through the MSM-led CBO, using WHO test and start strategy. Currently, Global Fund is providing support for MSM and KPs in order to build the capacity of the community-based health workers to provide comprehensive ART services to the MSM. In the last three years, test and start (Tas) strategy has increased the uptake of ART and OSS intervention has improved adherence to ART. This shows the link between the service provision factors and the MSM-friendly services towards the improvement of uptake and adherence to ART care.

Findings from this study also shows stigma and discrimination occurs at every layer of the conceptual framework and not only at the institutional/community level. The 2014 Same-Sex Act is discriminatory, MSM and KP HIV program is not institutionalized like Mother-to-child prevention programs, and some cases of MSM profiling was reported in the literature reviewed. MSM experience discrimination in different form among peers, family, community, health care facility and the government level. The government is committed to reducing new cases of HIV by 2030, but MSM HIV program is not funded nor included in the government budget for HIV.

4.1 Strength and Limitation of the Conceptual Framework

From my experience as a Key Population Specialist, the Access-IBM model is similar to the minimum prevention package intervention (MPPI) for MSM in Nigeria, which takes into consideration; the behavioural, the biomedical and structural factors. The conceptual framework was very useful to investigate factors influencing care engagement among MSM. However, there is need for the inclusion of awareness in the Access box. Awareness of safe

health facilities with trained frontline health workers offering MSM friendly services is a key factor in the enrolment in ART care. Other variables like co-trimoxazole does not seem to be associated with uptake and adherence among MSM, it is a drug taken to prevent opportunistic infections. It is also useful to report the overlapping factors in the inter-personal and institutional levels. Having searched and not finding, it is useful to also state that constructs like goal-setting, problem-solving, positive-living, self-efficacy to adhere, and self-worth had limited and/or no related information from literature search.

4.2 Strength and Limitation of the Study

The study explored the factors influencing uptake and adherence of MSM to ART in Nigeria. The research findings are dependent on the works of the selected authors and limited to the results and report from published peer reviewed journals. Many information available on ART uptake and adherence are from the general population, very few are specifically from the MSM. The implication of this on the study is that findings provided more of an indication of what could be the issues rather than provide more robust data. Hence, the need for further research with full involvement of MSM community members for primary data collection on the factors influencing uptake and adherence to ART. Another limitation is that the interview with key informants only is to validate findings from literature.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

This research identified factors influencing uptake and adherence of MSM to ART care in Nigeria using literature review and a semi-structured interview with key informants with working experience in MSM friendly ART services. These factors are inter-related and the layers of the conceptual framework influence ART outcomes among MSM.

The 2014 Same-Sex Act that criminalizes MSM and MSM related activities were found to be associated with the increase in HIV prevalence among MSM as reported by the Federal Ministry of Health in Nigeria. Although HIV intervention was permitted to MSM subsequently after advocacy by WHO and other international agencies, the fear of human rights abuse and other hostile situations being faced by the MSM in the society is a barrier to uptake and adherence to ART. The majority of the MSM receiving treatment in Nigeria are enrolled at OSS and other selected public and private ART facilities offering MSM friendly services. This study shows that the environment is conducive for MSM to disclose their MSM status, the healthcare workers are non-discriminatory and maintained confidentiality. This study further revealed that MSM prefers to receive treatment at OSS compared to the public ART facility.

It is important to note the importance of the MSM-led organization in facilitating uptake and adherence of MSM to ART care, through an accompanied referral of HIV positive MSM to OSS, and influencing adherence through regularly ARV drug pick-up to minimize clinic visits. The MSM-led CBO also provides psychosocial supports to MSM to improve their mental health and safe housing to some MSM facing rejection by family and guardians as a result of disclosure of HIV status and their sexual orientation.

Disclosure of HIV status and sexuality was found to be very selective. However, MSM prefer to disclose their sexual orientation to health workers in a trusted environment like OSS and other ART facility offering MSM friendly services. Findings from this study also show that MSM prefers to disclose to their peers that are also HIV positive and enrolled in the same ART facility. Disclosure to family and partners is very low because of stigma and fear of homophobic attacks. The mental health of MSM is also a very important factor identified in this study. The report of suicidal ideation is higher among newly tested HIV positive MSM than heterosexual men. Regular adherence counselling is very important to maintain retention in ART care and improve MSM self-efficacy to adhere to ART. Key informants confirm the presence of a trained psychologist at the OSS, but not available in other ART facilities.

This study shows that MSM also receives some mental health support from the sexual minority groups like the MSM-led CBO. Connection to sexual minority groups is effective in ART initiation, retention in care and achievement of viral suppression among MSM.

Tailored information is provided in the MSM friendly ART facilities, while general HIV/ART information is available in other ART clinics. ART information that applies to MSM is also shared on the various social media platform of MSM like Facebook and WhatsApp virtual groups. The MSM-led CBOs also provide regular behavioural change communication to MSM during support group meetings for MSM on ART treatment. This has improved the self-efficacy to adhere to treatment and engage in safe sex to avoid getting infected with other STIs. Belief in the efficacy of ART is significantly high among MSM, some were sick before they discovered they are HIV positive. Hence, they are motivated to remain in ART because of their recovery from HIV related sicknesses and their improving physical appearances. The cases of high alcohol consumption and psychoactive substance use were reported as a barrier to adherence. Some MSM forgot to take their ARV drugs and/or miss the pills as a result of alcohol intoxication and substance use.

Two outstanding HIV intervention was reviewed in the result section. These were carried-out by Popcouncil Nigeria and Society for Family Health, using the WHO recommended test and start (Tas) strategy in the community-based ART facilities and OSS. More MSM were enrolled using this strategy in the facility and outreach to MSM hotspots, and a good percentage of MSM linked to ART care achieved viral suppression.

RECOMMENDATIONS

For Nigeria to achieve improved uptake of ART services and required adherence for the achievement of viral suppression among MSM, the following recommendations are presented as informed by the findings from this research;

To the Donor Agencies/Implementing Agencies/Civil society organization/MSM-led Organizations

1. MSM should be given a central role in further research, HIV program design, and implementation by donor agencies and other stakeholders working on ART programs and activities to reduce new cases of HIV among MSM in Nigeria. This will ensure a more representative research findings and active participation in the ART intervention.
2. Financial constraint is a key barrier to uptake and adherence of MSM like other persons living with HIV. However, their sexual orientation reduces their chances of getting support from family members. Therefore, grants may include funds to assist HIV positive MSM for self-reliance training and financial support to remain in ART care.
3. Human rights abuse can be reduced through partnership with law enforcement agencies, the MSM led CBO and other civil society organizations. This will reduce extortions and other homophobic experiences preventing MSM from attending public facilities.
4. Through the MSM groups and their social media platforms (Facebook, WhatsApp, and others), awareness of MSM friendly ART facilities can be improved for better uptake and adherence to ART care.
5. Health promotion to reduce the use of alcohol and other psychoactive substance is needed to improve adherence to ARV medications among MSM on ART. This can be achieved through support-group meetings and follow-up gatherings organised by the MSM-led CBOs

To the Nigerian Government/Ministry of Health/Health Care Workers

6. Trust is required for MSM to disclose their sexuality to receive comprehensive ART services including genital screening. Hence, confidentiality must be maintained at every level of ART care without any form of patient profiling by health care workers, stigmatization, and/or discrimination to encourage disclosure.

7. A partnership can be facilitated between the MSM minority groups and public health facilities through the Ministry of Health in each of the states in Nigeria to increase the number of ART facilities providing comprehensive ART services to MSM. Currently, the relationship between the key population groups and the donors has aided the uptake and adherence of MSM to ART care in OSS and other donor-funded community-based ART facilities which are limited in number. Results from this study on MSM in OSS shows more linkage and retention in ART care. However, more ART facility can be empowered through training of the health care workers and facility support to provide MSM friendly ART services.
8. Mental health services should be improved and incorporated into ART care in public health facilities to provide psychosocial service. Some MSM faces double stigma and depression due to discrimination and lack of support from their relatives and the environment.

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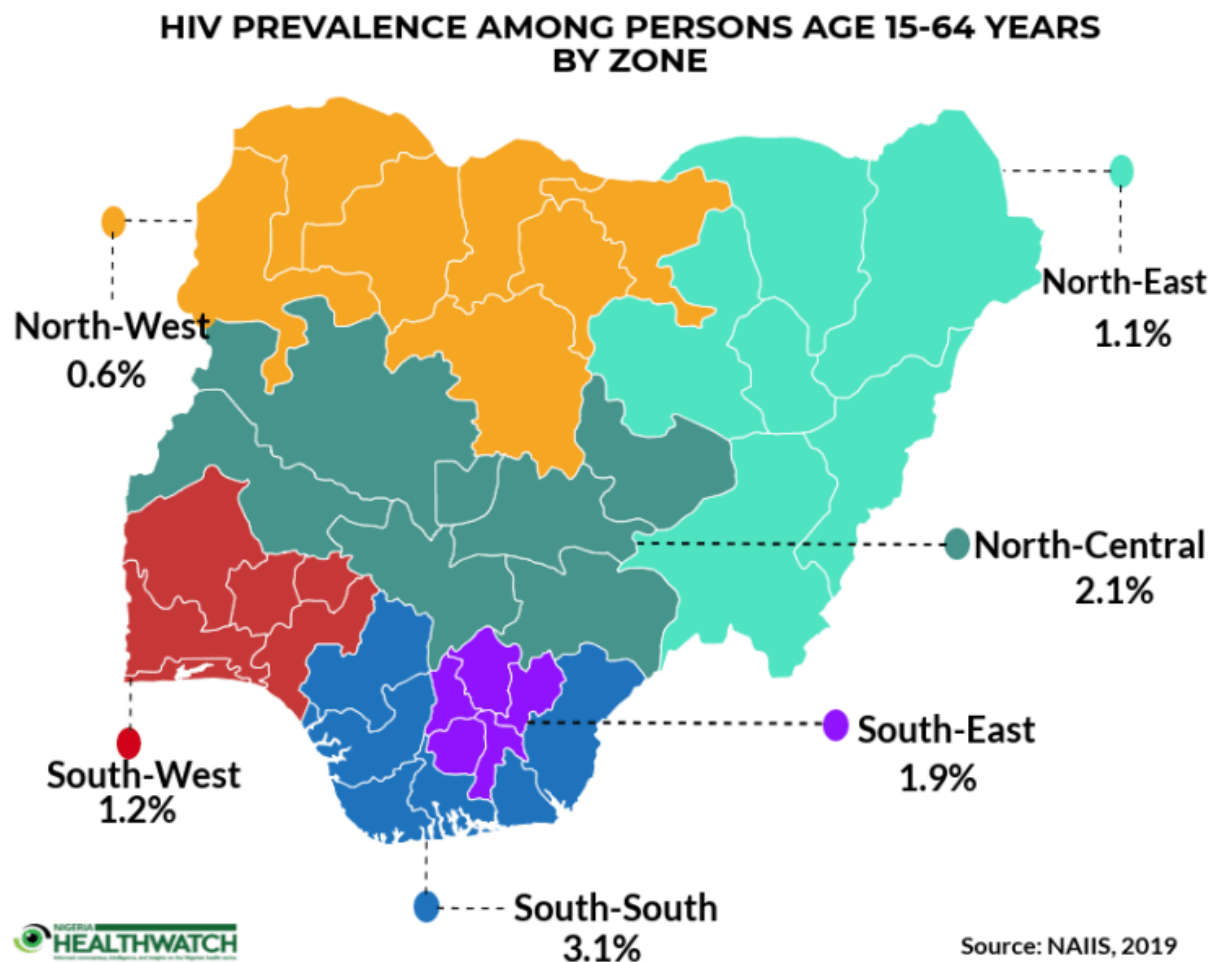
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Annex 1: HIV Prevalence By Zones in Nigeria



Source (123)

Annex 2: Strategy for Searching Relevant Literature

		Variable 1 MSMLHIV	Variable 2 ART Services		Study Area(s)
		AND			
Sub- obj 1: Intra-Personal factors	O R	MSMLHIV	<ul style="list-style-type: none"> • Antiretroviral enrolment • Antiretroviral adherence • ARV pick up/Drug refills • ARV side-effects • Waiting time • ART confidentiality • ART social support/ Support group meetings • ART follow up • Other STI services 	<ul style="list-style-type: none"> • Age • Education level • Socio-economic status • Sexual preferences 	<ul style="list-style-type: none"> • Nigeria • Sub-Saharan Countries
Sub-obj 2: Inter-personal factors	O R	ART Providers	<ul style="list-style-type: none"> • Antiretroviral enrolment • Antiretroviral adherence • ARV drugs • ARV side-effects • Waiting time • ART confidentiality • ART social support/ Support group meeting • ART follow up/ Retention strategy • Other STI services 	<ul style="list-style-type: none"> • Service delivery • Health workers • Referral system, • Cost of services, • Drug Pick-up • Health system • Policy 	<ul style="list-style-type: none"> • Nigeria • Sub-Saharan Countries
Sub-obj 3: Institutional and community factors	O R	MSMLHIV	<ul style="list-style-type: none"> • Adherence to ART • Retention and drop-out 	<ul style="list-style-type: none"> • ART Appointments • Viral suppression 	<ul style="list-style-type: none"> • Nigeria • Sub-Saharan Countries

Sociocultural/ policy factors		MSMLHIV	<ul style="list-style-type: none">• Criminalizati on• Human Rights• Funding		
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Annex 3: Proposed Interview Guide to Explore factors influencing adherence to ART among MSM in Nigeria

CODE:

Ask informed consent from every individual and fill in the personal data sheet for each participant, then gather the group and start the FGD.

DRAFT FOR DATA RECORDING SHEET:

DATE

Time interview started.....

NAME OF MODERATORSign.....

NAME RECORDER.....Sign.....

TRANSCRIBER.....Sign.....

State, Country.....

DURATION.....

General comments:

Interview Guides for MSM Key Informants

PERSONAL DATA PARTICIPANTS:

How old are you? years
Which part of Nigeria have you worked with MSM HIV services?	
How long have you worked with MSM HIV services?	
Are you currently working on MSM HIV service?	Working yes/no If yes, how long have you been working? Years If the answer is no, the interviewer have to end the interview
Where do you provide HIV service?	ART Facility or Community led Organization (MSM led CBO)
What are the services you provide(d)?	Do you provide ART services? Do you provide HCT ?

	<p>Do you provide ARV Refill?</p> <p>Do you provide HIV Nursing Services?</p> <p>Do you provide Adherence counselling and other Psychosocial services?</p> <p>Do you provide STIs Treatment?</p> <p>Do you offer risk reduction/Condom and Lubricant distribution?</p> <p>Do you assist at Support Group meetings?</p> <p>Do you offer Accompany Referral/Follow-up</p> <p>What other HIV services do you provide in the MSM community?</p>
Approximately how many MSM have you and/or your team enrolled/referred for ART care in the last 3 years?	
Among the MSM that were enrolled/referred for ART care in the last 3 years, what is the percentage (approximately) were retained in ART care?	
Do you have any insights what percentage of those who retained in ART care, achieved viral suppression?	
<p>1. To explore the intra-personal factors influencing ART uptake and adherence among MSM in Nigeria</p>	<ul style="list-style-type: none"> • Where does MSM access ART services ? • What information is given to MSM at enrolment to ART care? • What are the healthy living skills learned for adjustment to ART? (Condom and lubricant use, HIV education, exercise, improved feeding) • What is the motivation to remain in ART care?(mental health, belief in ART,

	<p>acceptance, substance abuse, ARV side-effects)</p> <ul style="list-style-type: none"> • How resilient are MSM to adhere to ART? (denial, disclosure, confidence, homophobia management)
<p>2. To explore the inter-personal factors influencing ART uptake and adherence among MSM in Nigeria</p>	<ul style="list-style-type: none"> • Can you describe the disclosure among MSM on ART? • What support is provided to MSM by their network?
<p>3. To explore the institutional and community factors influencing ART uptake and retention among MSM in Nigeria</p>	<ul style="list-style-type: none"> • What are the ART services provided to MSM? • How MSM friendly are the ART clinics? • What are the psychosocial services offered for adherence of MSM to ART?
<p>4. To explore sociocultural/ policy factors influencing ART uptake and adherence among MSM in Nigeria</p>	<ul style="list-style-type: none"> • How has the criminalization of MSM affected uptake and adherence of MSM to ART? • What are the ART clinic policy for MSM profiling?(Protection of MSM against stigma from health workers, clinic labeling, stratification by gender and/or sexual orientation) • What are the effects of human rights (police harassment, gender-based violence and stigmatization) on ART uptake and adherence among MSM? • What are the associated influence of funds to ART uptake and adherence among MSM?

Annex 4: Informed Consent Letter

Informed consent for Key Informants

Hello, My name is Okunola I.O. I am a research student from KIT Royal Tropical Institute. I would like to understand better the factors influencing uptake and adherence of MSM to ART in Nigeria. We understand that you provide HIV services for the Key Populations in Nigeria and would like to learn from your experience.

Procedures including confidentiality.

If you agree I would like to interview you about on ART service delivery to MSM enrolled to ART care, how the experience affects the decision of MSM to remain in ART care, and social factors influencing continuous uptake of treatment among MSM. The interview will take place in a virtual space using skype and/or zoom online social media platform.

To make sure that we do not forget or change what you are saying I will tape record the answers you give, if you permit. Everything that will be said, written down will be kept totally confidential. Your name will not be recorded or written down. Notes, transcript, recordings tapes will be kept in a locked shelf in the office of the researcher. Only the team of researchers will have access to the notes.

In publications, the findings will be attributed to the services in general and not to your particular area so that nobody can recognise the setting. Tape recording will be destroyed 6 months after finishing the study.

Risk, discomforts and right to withdraw

You are free to refuse to answer any question for any reason. Refusing to take part or withdraw during the interview will not in any way affect you or your reputation in any way.

Benefits

This study will not help you directly but the results will help to improve sexual health services.

Sharing the results

After the assessment completed, we will be sharing the results with the community through a stakeholder meeting. In addition, the results will be available in written form. If you would like to participate in the stakeholder meeting or would like to receive a copy of the report, please let us know and I will make this possible for you.

Consent and contact

Do you have any questions that you would like to ask?

Are there any things you would like me to explain again or say more about?

Do you agree to participate in the interview?

DECLARATION: TO BE SIGNED BY THE RESPONDENT

Agreement respondent

The purpose of the interview was explained to me and I agree that
(name of person) is interviewed.

Signed _____ Date _____

WITNESS SIGNATURE

Signed _____ Date _____

If you have any questions or want to file a complaint about the research you may contact:

Contact information organization I.O. Okunola okunolamuyiwa@gmail.com +31687147247	Contact for Ethics Committee
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Annex 5: Waiver Letter



KIT Royal
Tropical
Institute

RESEARCH ETHICS COMMITTEE

Contact: Meta Willems (secretary REC)
Telephone +31 (0)20 568 8514
m.willems@kit.nl

To:

Isaac Olumuyiwa Okunola
By email: okunolamuyiwa@gmail.com

Amsterdam, 26 June 2020

Subject Decision Research Ethics Committee regarding a waiver to “validate the findings from the literature review to explore the individual, institutional, and policy-related factors influencing the uptake and adherence of MSM to ART in Nigeria”

Dear Isaac Olumuyiwa Okunola,

The Research Ethics of the Royal Tropical Institute (REC) has reviewed your application for a waiver to “validate the findings from the literature review to explore the individual, institutional, and policy-related factors influencing the uptake and adherence of MSM to ART in Nigeria” which was submitted on June 18, 2020.

The research which involves literature review and 5 interviews with key with key informants who will selected from ART facility, MSM led Community Based Organization (CBO), MSM/HIV Case Managers, and Program Officers, is exempted from full ethical review based on the following reasons:

- a. the participants will be involved in their professional capacity only; the issues to be covered in the topic list cover information related to the duties of the respondents and information in the public domain; questions related to any personal questions are not included;
- b. the participants will be asked informed consent before the data collection to make sure participation is voluntary and participants are informed that they can decide to decline or withdraw from the interview at any moment without any effect on reputation, or other consequences;
- c. participating in this study does not foresee any physical, psychological and/or socio-economical risk or discomfort;
- d. all information will be derived, processed, stored and published anonymously.

The Committee grants this waiver provided that you inform the KIT GDPR project officer about your research for GDPR monitoring purposes.

The Committee requests you to inform the REC once substantive changes to the protocol are made, important changes to the research team take place or researchers are added to the research team.

The Netherlands
Fax +31 (0)20 568 8444

Moreover, the Committee requests you to send the final report of the research containing

a summary of the study’s findings and conclusions to the Committee, for research monitoring purposes.

Please note that in case the final report is not submitted to the REC, or GDPR measurements are not taken care of sufficiently, this may have consequences for review of your next research proposal.

Wishing you success with the research,

Prisca Zwanikken MD MScCH PhD
Senior member of the KIT REC

