FACTORS THAT INFLUENCE THE USE OF HIV PREVENTION SERVICES AMONG YOUNG ADULTS IN NIGERIA: A LITERATURE REVIEW

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59th Master of Public Health/International Course in Health Development

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

By

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Declaration:

In situations where other authors' work was used, this was carefully acknowledged and referenced in accordance with academic requirements.

The thesis (FACTORS THAT INFLUENCE THE USE OF HIV PREVENTION SERVICES AMONG YOUNG ADULTS IN NIGERIA: a literature review) is my own work.

Signature:

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TABLE OF CONTENTS

Contents

LIST OF ABBREVIATIONS vii

GLOSSARY viii

ACKNOWLEDGEMENTS viii

ABSTRACT ix

INTRODUCTION 1

1.0 CHAPTER ONE: BACKGROUND 1

1.1 COUNTRY OVERVIEW 1

1.2 POPULATION'S HEALTH STATUS AND THE NIGERIAN HEALTH SYSTEM 3

1.3 NIGERIA'S HIV RESPONSE 4

2.0 CHAPTER TWO: PROBLEM STATEMENT, JUSTIFICATION AND METHODOLOGY 5

2.1: PROBLEM STATEMENT IN THE NIGERIAN CONTEXT 5

2.2: JUSTIFICATION 7

2.3: SCOPE 8

2.5 METHODOLOGY 9

2.6: SEARCH STRATEGY 9

2.7: CONCEPTUAL FRAMEWORK 10

2.7.1 APPROACHABILITY 12

2.7.2 ABILITY TO PERCEIVE 12

2.7.3 ACCEPTABILITY 12

2.7.8 ABILITY TO SEEK 13

2.7.10: AVAILABILITY AND ACCOMMODATION 13

2.7.11: ABILITY TO REACH 14

2.7.12: AFFORDABILITY 14

2.7.13: ABILITY TO PAY 14

2.7.14: APPROPRIATENESS 14

2.7.15: ABILITY TO ENGAGE 15

3.0: CHAPTER THREE STUDY RESULTS/ FINDINGS 15

RESULTS 1: FACTORS INFLUENCING ACCESS TO HPS BY YOUNG ADULTS. 15

3.1: ABILITY TO PERCEIVE 15

3.1.1: Health Literacy 15

3.1.2: Health Belief 17
3.1.3: Trust and Expectation 17
3.2: ABILITY TO SEEK 18
3.2.1: Personal and Societal Values 18
3.2.2: CULTURE 19
3.2.3: Gender 19
3.2.4: Autonomy 20
3.3: ABILITY TO REACH 20
3.3.1: Living Environment 20
3.3.2: Transport and Mobility 20
3.3.3: Social Support 21
3.4: ABILITY TO PAY 21
3.4.1: Income, Assets, and Social Capital 21
3.4.2: Health Insurance 21
3.5: ABILITY TO ENGAGE 21
3.5.1: Empowerment 21
3.5.2: Information 22
3.5.3: Adherence 22
3.5.4: Caregiver support 22
RESULTS 2: GAPS IN HPS FOR YOUNG ADULTS 23
3.6: APPROACHABILITY 23
3.6.1: Transparency and Information 23
3.6.2: Outreach and Screening 23
3.7: ACCEPTABILITY 24
3.7.1: Professional Values, Norms, Culture, and Gender 24
3.8: AVAILABILITY AND ACCOMMODATION 24
3.8.1: Geographic location 24
3.8.2: Accommodation 25
3.8.3: Hours of Opening 25
3.8.4: Appointment Mechanism 25
3.9: AFFORDABILITY 25
3.9.1: Direct Cost 25
3.9.2: Indirect Cost 26
3.9.3: Opportunity Cost 26
3.10: APPROPRIATENESS 26
3.10.2: Adequacy 26

3.10.3: Coordination and continuity 26
RESULTS 3: GOOD PRACTICES AND INTERVENTIONS 26
3.11: Youth-friendly services..... 27
3.12: Community engagement 28
3.13: Empowerment Program 29
3.14: Involve men in sexual and reproductive health interventions 29
4.0 DISCUSSION..... 30
4.1 APPROACHABILITY/ ABILITY TO PERCEIVE 31
4.1.1 APPROACHABILITY 31
4.1.2 ABILITY TO PERCEIVE..... 31
4.2 ACCEPTABILITY/ ABILITY TO SEEK 32
4.2.1 ACCEPTABILITY 32
4.2.2 ABILITY TO SEEK 32
4.3 AVAILABILITY AND ACCOMODATION/ ABILITY TO REACH..... 33
4.3.1 AVALABILITY AND ACCOMODATION..... 33
4.3.2 Ability to reach 33
4.4 AFFORDABILITY/ABILITY TO PAY 34
4.4.1 AFFORDABILITY 34
4.4.2 ABILITY TO PAY..... 34
4.5 APPROPRIATENESS/ ABILITY TO ENGAGE 34
4.5.1 APPROPRIATENESS..... 34
4.5.2 ABILITY TO ENGAGE 35
4.6: Study limitation..... 35
5.0 CHAPTER FIVE CONCLUSION AND RECOMMENDATION..... 36
5.1: CONCLUSION..... 36
5.2: RECOMMENDATIONS 36
5.2.1 Recommendations for policy makers (Government, FMOH, NGOs) 36
5.2.2 Recommendation for further study (Academia)..... 37
REFERENCES..... 38

LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
APC	All Progressive Congress
DALYS	Disability Adjusted Life Years
FP	Family Planning
FSW	Female Sex Workers
GDP	Gross Domestic Product
HIV	Human Immunodeficiency Virus
HIVST	Hv Self Testing
HPS	HIV Prevention Services
HTS	HIV Testing Services
IBBSS	Integrated Biological and Behavioral Sentinel Surveys
MSM	Men Who Have Sex with Men
NACA	National Agency for the Control of Aids
NAIIS	Nigeria AIDS Indicator and Impact Survey
NDHS	Nigeria Demographic and Health survey
NGOs	Non-Governmental Organizations
NHIS	National Health Insurance Scheme
NSP	National Strategy Plan
OOP	Out of Pocket Payment
PEP	Post- Exposure Prophylaxis
PEPFAR	President’s Emergency Plan for Aids Relief
PrEP	Pre-Exposure Prophylaxis
PWID	People Who Inject Drugs
SDG	Sustainable Development Goals
SRH	Sexual and Reproductive Health
STI	Sexually Transmitted Infection
UNAIDS	Joint United Nations Program on HIV/AIDS
WHO	World Health Organization

GLOSSARY

HIV

Human immunodeficiency virus (HIV) attacks the body's immune system, weakens people's defenses against many opportunistic infections, and, if not managed properly, can lead to Acquired Immune
Deficiency Syndrome (AIDS) (1).

HIV prevention services

The national HIV prevention efforts are focused on reducing the risk of HIV transmission through unsafe blood and blood products, risky sexual behaviors, sharing of unsterile needles among people who inject drugs (PWID), mother-to-child transmission, encouraging frequent HIV testing, use of condoms and lubricants, use of HIV prevention medicines like Pre-exposure prophylaxis to reduce one’s risk of getting HIV, and post-exposure prophylaxis for people who have been exposed to HIV (2).

Young adults

Young people aged 15 to 24 years (2).

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ABSTRACT

Background: HIV/AIDS in Nigeria is becoming more frequent in 15 to 24-year-old people. In Nigeria, young adults face challenges in accessing sexual and reproductive health services and also HIV prevention services.

Objective: This study seeks to explore the factors that influence the use of HIV prevention services (HPS) by young adults in Nigeria and provide evidence-based recommendations to improve these services usage among these populations.

Method: A literature review and analysis of relevant documents was conducted. The healthcare access framework by Levesque et al (2013) was used to analyze the findings both from the demand side (to explore the barriers and facilitators to accessing HIV prevention services among young adults in Nigeria) and supply side (to identify gaps in HIV prevention services targeting young adults in Nigeria).

Findings: The findings revealed several key factors including the lack of comprehensive sexuality education which hinder young adults use of HPS especially in the rural areas, discriminatory attitudes and stigma among marginalized young adults due to presence of criminalizing laws and this hinders their access to HPS, limited availability of services due to inequalities in distribution of health facilities especially in the rural areas which poses a barrier for young adults to access HPS, lack of youth friendly services which discourages young people from getting personalized care tailored to their needs and preference, and affordability issues which is also a barrier to the use of HPS by young adults.

Conclusion and recommendation: Young adults in Nigeria have limited use of HPS. To address these challenges, recommendations were made to government, ministry of health, non-governmental organizations and public health academia to review policies, mobilize resources and conduct further research to explore the specific barriers and facilitators to accessing HIV prevention services among different subgroups of young adults in Nigeria.

KEYWORDS: young adults, adolescents, youths, Nigeria, subsahara, Africa, approachability, ability to perceive, acceptability, ability to seek, availability,

ability to reach, affordability, ability to pay, appropriateness, ability to engage, norms, social network, HIV prevention services, HIV counselling and testing, sexual and reproductive health, sexually transmitted infections

Word count: 11,089

INTRODUCTION

1.0 CHAPTER ONE: BACKGROUND

1.1 COUNTRY OVERVIEW

Nigeria is a country located in West Africa, bordered to the north by Niger, northeast by Chad, east by Cameron, west by Benin, and the south by the Atlantic Ocean. With a total land area of approximately 923,768 square kilometers, Nigeria is the world's seventh-most populous country in Africa with over 200 million people as shown in fig 1 below (3).

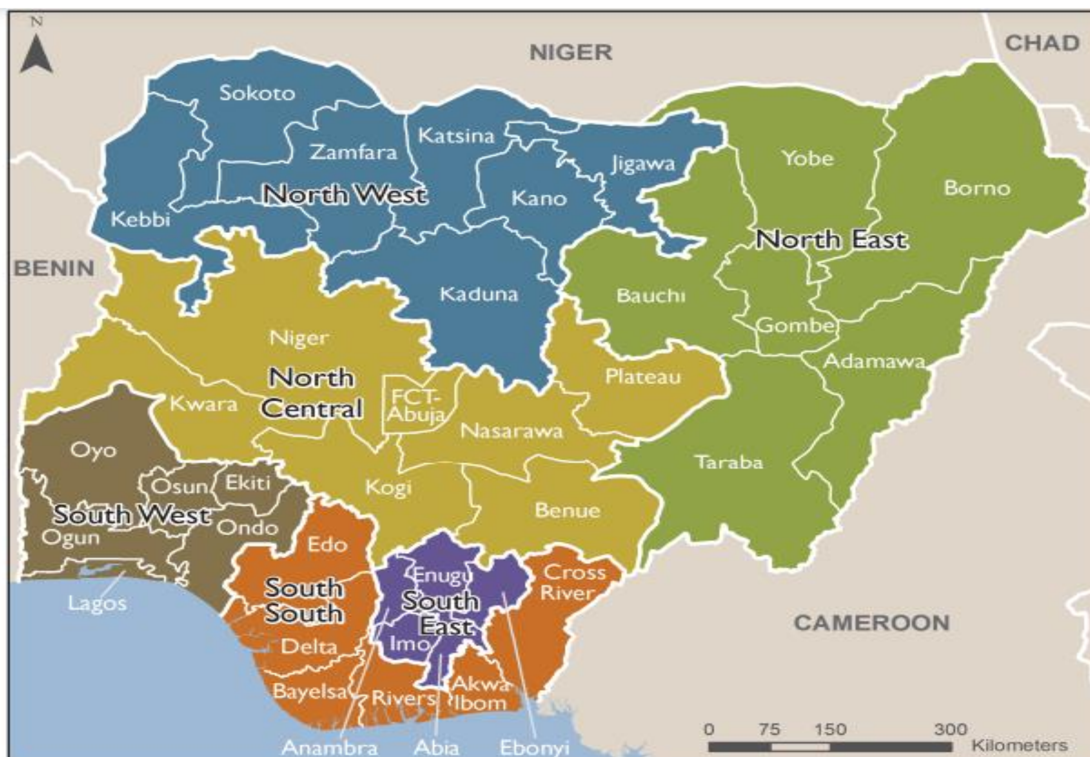

FIG 1: Map of Nigeria (3).

The country has 36 states with Abuja as the Federal capital territory and a mix of both urban and rural settings (4). According to the World health organization (WHO), 51% of the Nigerian population lives in urban areas, and 49% lives in rural areas (5).

Nigeria is home to over 250 ethnic groups with diverse cultures and different languages however, the major ethnic groups are Hausa-Fulani located in the north, Igbo located in the southeast, and Yoruba located in the southwest and English is the official language spoken (6). The 2 main religions practiced in Nigeria are Christianity and Islam with a small minority practicing other traditional African religions (7). Nigeria is a patriarchal society that allows men to hold positions of authority and to be the head of the household while the women are expected to be passive and carry out roles such as caring for the home and children (8,9). Family and community are highly valued in the Nigerian context as family members offer social support and make decisions on what should be done. Respect for elders is also very key in Nigeria (10).

The Global health metrics report shows that the median age in Nigeria is 18.4 years making it a relatively young country (11). The annual population growth rate is 2%, the fertility rate is 5.3 children per woman, and the life expectancy at birth is 54 (3,11).

Nigeria is classified as a low- and middle-income country and is a mix of both privately owned and government-controlled industries. The country's gross domestic product (GDP) was approximately $448 billion with a growth rate of 3.2% and the estimated nominal GDP per capita was $2168 (12). It is vital to note that a substantial portion of the county's income is not captured due to the prevalence of informal settings. Oil accounts for nearly 90% of Nigeria's exports, but about 40% of the total population lives below the poverty line, and 53.4% of the young people are unemployed In Nigeria (7,13).

Nigeria has a multi-party system and holds 3 major political events which are the presidential, legislative, and gubernatorial elections. The ruling political party is the All-progressive Congress (APC) regulates the executive arm of the government and occupies a greater number of the seats at the Senate and House of Representatives in the parliament in many Nigerian states (12). The Nigerian economy has faced numerous challenges, including terrorist attacks, kidnappings, banditry, high inflation, declining oil production, the effect of

climate change on food production, and a lack of job opportunities, all of which have contributed to social and political unrest in the country (7).

1.2 POPULATION'S HEALTH STATUS AND THE NIGERIAN HEALTH SYSTEM

The country's health statistics are not so coordinated as some data is incomplete and untimely, also, the prevalence of malaria, HIV, and tuberculosis is still very high. Infant and maternal mortality rates are also quite high and malnutrition, especially among children under 5 remains a significant problem, especially in the northern part of Nigeria (14). The picture below shows the top 10 causes of death and disability combined for all ages in Nigeria.

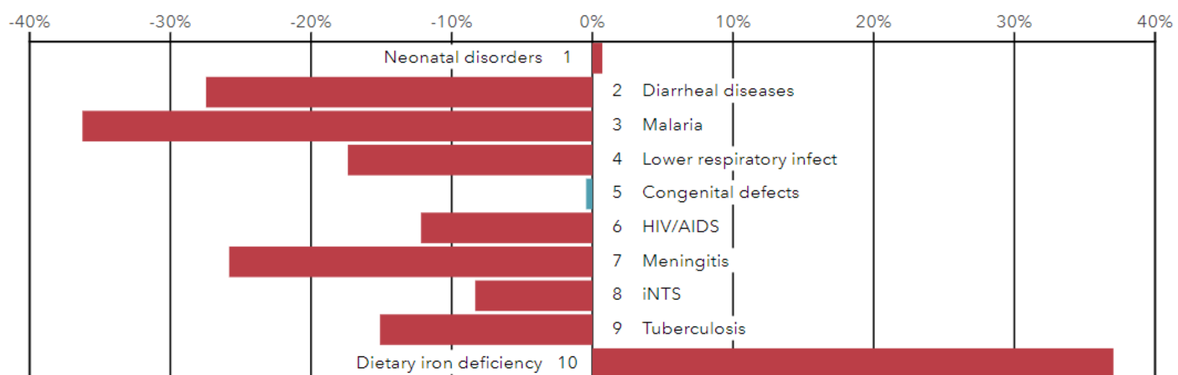

FIG 2: Top 10 causes of death and disability (DALYs) in 2019 and percent change 2009–2019, all ages combined (11).

The Nigerian health service delivery is decentralized at the federal, state, and local government levels with a mixed health system that includes both private and public health care providers at different levels. The Federal Ministry of Health is responsible for developing health policies and guidelines, while state and local governments are responsible for enforcing these policies and managing health facilities within their jurisdictions (7).

However, the Nigerian health system faces numerous challenges in achieving universal health coverage. The fiscal space for health is limited, with health expenditure accounting for only 4% of the total budget, falling below the Abuja declaration target of 15%. This low fiscal space for health has resulted in poor infrastructure, inadequate staffing, and low quality of healthcare services making it difficult for people to access good healthcare (3).

The Nigerian health care system is financed through various sources such as out-of-pocket payments (OOP), tax revenue, donor funds, and health insurance. The primary source of healthcare financing in Nigeria is OOP payments, which account for 70.52% of total healthcare financing (7). This reliance on OOP payments can lead to catastrophic health expenditures for the population, particularly for those living in poverty (15,16).

To address these issues, the government of Nigeria, in collaboration with international partners, has implemented various health programs and initiatives. The national agency for the control of AIDS (NACA) leads the national HIV/AIDS response, focusing on prevention, treatment, care, and support. The government has also developed the national health insurance scheme (NHIS) to provide financial risk protection and improve access to healthcare services (3).

Despite these attempts, there is still a need for more investment in healthcare infrastructure, human resources, and health financing to improve the population's health status and ensure equitable access to quality healthcare services in Nigeria (17).

1.3 NIGERIA'S HIV RESPONSE

Nigeria HIV response involves a comprehensive approach to prevention, treatment, care, and support. NACA is the coordinating body responsible for implementing and monitoring the national HIV response in Nigeria (5). The response is guided by the national HIV and AIDS strategic framework, which outlines goals, objectives, and strategies for addressing the HIV epidemic in the country (18).

The prevention efforts focus on promoting behavior change, increasing access to HIV testing and counseling (HTC), promoting condom use, and implementing targeted interventions for key populations at higher risk of HIV infection, such as sex workers (SW), men who have sex with men (MSM), and people who inject drugs (PWID) (18).

Nigeria has made significant progress in scaling up access and to antiretroviral therapy (ART) for people living with HIV. The goal is to ensure that all individuals diagnosed with HIV have access to timely and quality treatment. This includes providing ART to pregnant women to prevent mother-to-child transmission of HIV (PMTCT) (18).

Nigeria's HIV response also includes a range of support services, such as psychosocial support, adherence counseling, and other forms of support to improve the overall well-being and quality of life of people affected by HIV (18).

2.0 CHAPTER TWO: PROBLEM STATEMENT, JUSTIFICATION AND METHODOLOGY

2.1: PROBLEM STATEMENT IN THE NIGERIAN CONTEXT

In Nigeria, HIV/AIDS remains a major public health issue, with substantial prevalence and burden. UNICEF's report highlighted that in the year 2015, Nigeria had the 2nd largest burden of HIV in the world (19). Also, in the year 2017, Nigeria accounted for over two-thirds of all new infections recorded in West and Central Africa. By 2021, approximately 1.9 million people were living with HIV, resulting in 74,000 new infections and 51,000 AIDS-related deaths notably, young adults in Nigeria bear a significant proportion of the HIV burden, comprising about 34.1% of total new HIV infections, with a particularly high prevalence of 3.5% among this group. The 2019 global report shows that for every seven new HIV infections, two occurred among young people (20).

The Nigerian government has established a range of preventive and treatment programs through NACA and collaboration with international donors such as PEPFAR to combat the HIV epidemic in Nigeria. However, young adults' engagements in these programs remain a significant challenge due to issues of duplication, implementation challenges, financing problems, and a lack of political will (6). Additionally, there are data gaps in the youth policy space in Nigeria, including a lack of information on vulnerable youths and at-risk youth involved in armed conflict, crime, substance abuse, sex work, and other risk behaviors that can compromise their health and development (7).

Furthermore, HIV/AIDS in Nigeria is shifting towards younger age groups, with an increasing number of HIV infections among people under the age of 25 years. In fact, Nigeria's HIV burden among young adults remains the highest in West and Central Africa with a prevalence of 3.5% (20,21). The HIV incidence rate among young people remains very high at 20% of the total new HIV infections occurring among this group In Nigeria (22). A study shows that for every two patients who were initiated on ART, they infected 5 more persons. HIV prevention is very essential to reverse the HIV epidemic in Nigeria (23).

Despite the existence of the National Framework for HIV prevention services and the reported decrease in HIV incidence rates according to World Health Organization (WHO) national reports, young people aged 15 to 24 years in Nigeria still exhibit low usage of these essential services. Consequently, more young adults continue to get infected with HIV, resulting in a concerning public health issue that demands urgent attention and this could have been prevented (6).

In addition to the low utilization of preventive services, there is a significant gap in the comprehensive knowledge of HIV among young people. Only have5% has comprehensive knowledge of HIV compared to the joint united nations program (UNAIDS) target of 90% by the year 2025 as shown in Fig. 3 below (6,18). The Nigeria Demographic Health Survey (NDHS) report also supports this finding, revealing low levels of HIV knowledge at 43% for women and 34% for men in young adults (3).

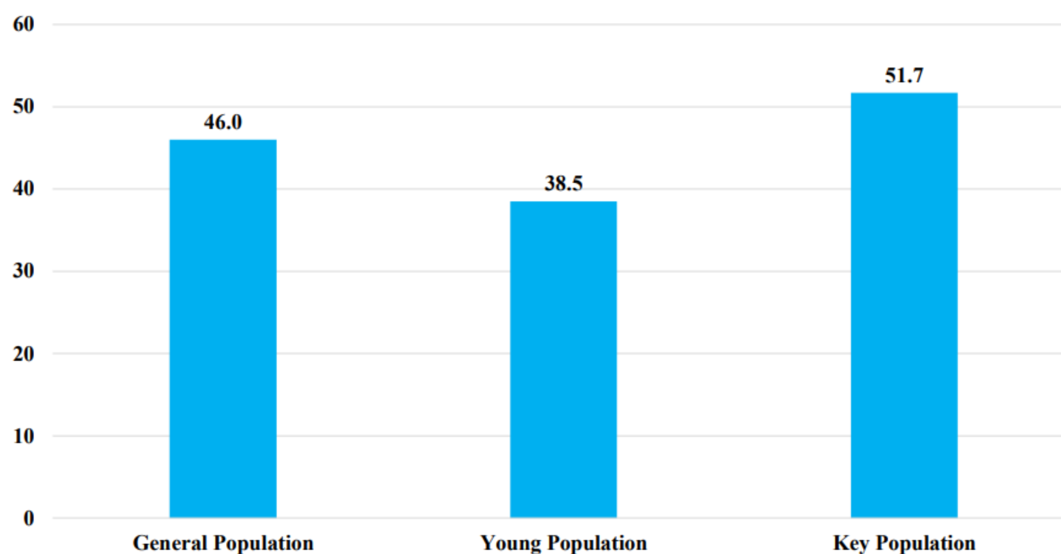

FIG 3: comprehensive knowledge of HIV in Nigeria by population (18).

Inequality in the distribution of health facilities, particularly in rural areas, poses another barrier to accessing HIV prevention services. The associated financial implications, long distances, and limited availability of health centers further hinder usage among young adults (7). Moreover, laws criminalizing same-sex acts contribute to stigma and discrimination, making it challenging for vulnerable populations to access HPS. Additionally, young people under 18 face parental consent barriers, preventing them from testing for HIV without consent

from their parents. The lack of comprehensive sexuality education leaves young adults vulnerable to myths and misinformation about sex, thereby undermining the perceived need for HPS. (6,24).

The study asks, therefore which factors could be influencing the access and usage of HIV prevention services in Nigeria by young people.

2.2: JUSTIFICATION

When HIV prevention services are not effectively used, more people face the risk of contracting HIV and if not managed very well can lead to AIDS thereby leaving the individual open to so many opportunistic infections and even death. Treatment of HIV can lead to catastrophic costs for the individual and adds a burden to the health system by draining the health budget. In Nigeria, HIV expenditure has already amounted to a substantial sum of 532,000,000(USD) (18,24). Young adults, constituting the most productive segment of the population, are disproportionately impacted by the HIV epidemic, with elderly individuals also experiencing adverse effects as they care for AIDS-affected family members. Fig 4 below shows the HIV expenditure breakdown across different program areas and the source of funding either public or international sources.

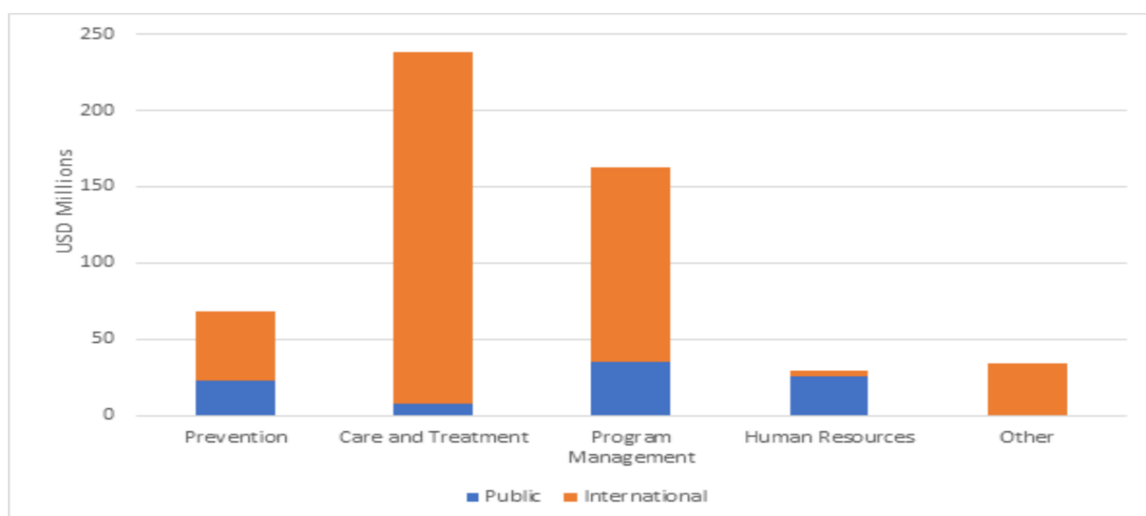

FIG 4: Public and international funding by key program Areas, 2018 (18).

The focus on young adults is crucial as they are the future of the country and form a significant proportion of the active working population. Their vulnerability to HIV acquisition is attributed to various social, biological, and economic factors. Unsafe sexual behaviors, like unprotected sex and early sexual

debut, contribute to the higher prevalence of HIV among young adults. NDHS also supports the fact that young people engage in early sexual relations as 57% of women engage in their first sexual activity by 18 years.
Non-treatment of sexually transmitted infections (STIs) further elevates their susceptibility to HIV infection. The implications of HIV for young adults and their families are profound, placing an enormous burden on the already strained healthcare system.

Furthermore, investing in HIV prevention services specifically for young adults is not only lifesaving but also cost-effective, as prevention services prove more economical compared to treatment services as shown in the figure above (18). By allocating resources to prevention, the country can address the HIV epidemic while channeling funds toward other pressing health priorities. This approach aligns with global goals set by UNAIDS to achieve 95 95 95 targets and end the AIDS epidemic by 2030, as outlined in the sustainable development goal 3 which aims to ensure healthy lives and to promote wellbeing for all at all ages (1).

Moreover, understanding the barriers and facilitators to accessing HIV prevention services among young adults in Nigeria can inform evidence-based interventions and policies to improve the usage. This will be relevant to the Ministry of Health and NACA to tailor interventions to address the specific needs and challenges faced by young adults to increase their engagement and to promote the use of HIV prevention services especially among young adults.

2.3: SCOPE

This study was carried out with a focus on factors that influence the use of HPS among young adults aged 15 to 24 years because they are the population with a high burden of HIV, and they face barriers to accessing HIV prevention services.

The HIV prevention services in this study refer to services such as frequent HIV testing, use of condoms and lubricants, use of HIV prevention medicines like Pre-exposure prophylaxis to reduce one’s risk of getting HIV, post-exposure prophylaxis for people who have been exposed to the HIV and prevention of mother-to-child transmission.

2.4: RESEARCH OBJECTIVES

This study aims to explore the factors influencing the use of HIV prevention services among young adults in Nigeria.

Specifically, this study aims to:

1. To explore the barriers and facilitators to accessing HIV prevention and treatment services among young adults in Nigeria.
2. To identify gaps in HIV prevention services targeting young adults in Nigeria.
3. To identify best practices/ effective interventions by other countries to improve the use of HIV prevention services among young adults.
4. To propose evidence-based recommendations to the Federal Ministry of Health and NACA for improved use of HIV prevention services among young adults in Nigeria.

2.5 METHODOLOGY

This is a qualitative and exploratory study carried out by conducting a scientific literature review as the main methodology. Publications from PubMed, Google Scholar, Cochrane Library, VU Library, and Scopus database were retrieved, as well as relevant grey literature from the Nigerian Ministry of Health Website, and national documents such as the National HIV Strategic Plan 2017 to 2012, Demographic Health Survey, national census Report, IBBSS.

I included publications about young adults related to HIV/AIDS, which are written in English from the year 2013 to date (2023) to ensure relevant and recent articles were considered. Retrieved articles published in different languages from English and out of the established timeframe were excluded.

2.6: SEARCH STRATEGY

To guide the literature search, the following keywords were used in the above-mentioned databases and search engines:

Table 1: Search Strategy (with Boolean operators) and Keywords

	AND		
	DOMAIN	DETERMINANTS	OUTCOME
	Young people	Approachability AND ability to perceive	HIV

	Young Adults	Acceptability AND Ability to seek	AIDS
	Adolescents	Availability AND Ability to reach	HIV Positive
OR	Youths	Affordability AND Ability to pay	Sero positive
	Nigeria	Appropriateness AND Ability to engage	HIV Prevention services
	Sub-Sahara	Norms	HIV Counselling and Testing
	Africa	Social Network	Sexual and reproductive health
	Developing Country	Interpersonal	Sexually Transmitted Infections
		Socio Economic Status	
		Environment	
		Community	
		Cultural values	

2.7: CONCEPTUAL FRAMEWORK

To analyze and discuss factors that influence the use of HPS among young adults in Nigeria, the Levesque conceptual framework for healthcare access was adopted.

Levesque et al. (2013) developed this conceptual framework based on a comprehensive review of existing literature on healthcare access. The framework has an interaction between the supply side and the demand side

which makes it possible to identify factors from the supply side that can affect the provision of HPS to young adults and link it to factors from the demand side that can influence their use of HPS.

This framework was selected because it can offer a guide for the identification and organization of the literature review, study results, and findings. The framework shows various dimensional views of healthcare access within the health systems context such as acceptability, approachability, availability, affordability, and appropriateness (supply side). Furthermore, the framework incorporates the population and individuals' abilities to perceive, to seek, to reach, to pay, and to engage in health care, as shown in Fig 5 below (demand side).

The demand side guided my literature search and analysis of the factors influencing as barriers and facilitators in accessing HPS among young adults (objective 1), while the supply side guided the literature search and analysis to identify the gaps in HPS targeting young adults in Nigeria (objective 2).

Based on a comprehensive review of existing literature on healthcare access, the conceptual framework for this study is based on the healthcare access framework developed by Levesque et al. (2013).

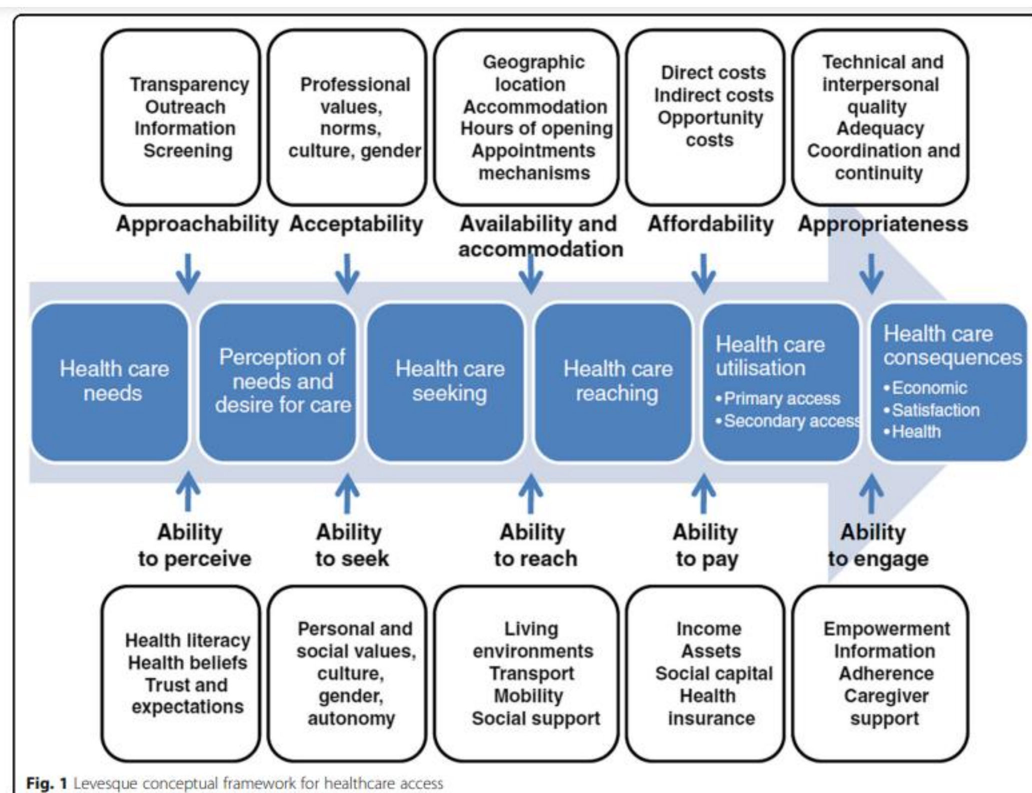

Fig. 1 Levesque conceptual framework for healthcare access

FIG 5: conceptual framework of access to health (25).

Following a short clarification of what was encompassed in each of these sides of the framework in the study.

2.7.1 APPROACHABILITY

Approachability is about ensuring that individuals with health needs are aware of the existence and accessibility of the services that can improve their health. This also considers the existing gap between healthcare providers and young adults and their understanding of the importance of HIV prevention services.

In this study, I asked:

- ❖ What information about HPS exists? Are service providers providing adequate information through outreach services, awareness in schools, social media, television, and radio broadcasts?

2.7.2 ABILITY TO PERCEIVE

From the demand side and complementary to approachability, it is also important for young adults to recognize when they need care. Factors such as health literacy, knowledge about HIV prevention services, and their belief about health and sickness play a crucial role in determining their ability to perceive the need for HIV prevention services (25).
In this study, I asked:

- ❖ How knowledgeable are young adults regarding HIV prevention services? What are their beliefs and expectations with these services?
- ❖ How well do young adults trust the health care providers and HIV prevention services?

2.7.3 ACCEPTABILITY

Acceptability refers to the social and cultural factors that can influence young people's willingness to seek HIV prevention services. These factors can include the belief, social group, or sex of the healthcare providers. For example, if HIV prevention services are provided mostly by men in a society that forbids physical contact between unmarried men and women, it may reduce the acceptability of care and willingness to seek HIV prevention services. Furthermore, these services may be organized in a way that is inequitable, making it unacceptable to certain segments of the community they intend to serve (25).
This study considered:

- ❖ Factors such as religion, culture, gender, age, and education may influence young adults' decision to accept HIV prevention services. Are the healthcare services responsive to the cultural and social needs of young adults?
- ❖ Also, the provision of equitable HIV prevention services among different groups of young people.

2.7.8 ABILITY TO SEEK

Complementary to acceptability from the demand side, the ability to seek health care including HIV prevention services relates to the level of autonomy which young adults have. The knowledge of the available services including other options, individual rights, and the ability to choose to seek care. Health care services should consider the needs of diverse groups of young people considering their cultural background, socioeconomic status, and their vulnerability as any form of discrimination, neglect of ethnic minorities or abuse can discourage others from seeking health care including HIV prevention services (25).
The study considers the following:

- ❖ The ability to seek care and the autonomy of young adults to seek HIV prevention services.
- ❖ The associated cost involved with seeking HIV preventive services.

2.7.10: AVAILABILITY AND ACCOMMODATION

Availability and accommodation of healthcare services including HIV prevention services refers to the ability of young adults to access physical spaces and providers of HIV prevention services in a timely manner. This includes having adequate resources and production facilities that provide HIV prevention services for young people. Availability of services is also influenced by various factors such as characteristics of the facilities, urban context, and individuals such as working hours and transportation. It also considers the characteristics of the HIV prevention service providers and modes of provision of services, for example, virtual consultations. When there is an uneven distribution of resources across the country, restrictions to access can occur (25).
The study highlights the following:

- The availability of HIV prevention services, when these services are available, and for whom they are available to example the presence of physical structures, resources, and healthcare providers of HIV prevention services.
- The distribution of resources across various regions

2.7.11: ABILITY TO REACH

From the demand side and complementary to availability and accommodation, the ability to reach HIV prevention services for young adults involves knowledge about health services, personal mobility, transportation availability, and occupational flexibility. For example, the inability of youth to take time off from work, and domestic chores to consult medical providers can limit their ability to access healthcare services including HIV preventive services (25).
This study considers:

- The factors that will allow young adults access HIV prevention services may include geographical location or means of transportation.
- The social support available to young people can allow them to be absent from either domestic chores or their daily job in other to go access HIV prevention services.

2.7.12: AFFORDABILITY

Affordability refers to the economic capacity of young adults to spend resources and time to access appropriate services including HIV prevention services. This includes the direct prices of the services, all related expenses, and the opportunity cost associated with loss of income (25).
The study considers:

- All the direct costs, indirect costs, or opportunity costs incurred by young adults to use quality healthcare services including HIV prevention services.

2.7.13: ABILITY TO PAY

This relates to the willingness of young people to pay for HPS. What are the payment systems available to them and are they able to pay for these services without facing financial hardship? This is complementary to affordability from the demand side (25).

2.7.14: APPROPRIATENESS

from the supply side look into the appropriateness of HPS for young adults (25).

The study considers:

- ❖ Quality of care being given to young adults. This care considers the social determinants of health with the right coordination and constant follow-up.

2.7.15: ABILITY TO ENGAGE

From the demand side and complementary to the appropriateness, the study considers:

- ❖ The young adults' agency. How empowered are they to make their own decision regarding the use of HIV prevention services and adherence?

3.0: CHAPTER THREE STUDY RESULTS/ FINDINGS

This chapter addresses the study research objectives using the Levesque et al (2013) conceptual framework. This was outlined using the 5 dimensions of the supply side with the corresponding 5 dimensions from the demand side using relevant literature to identify the factors that influence the use of HIV prevention services among adults in Nigeria.

The demand side of the framework will be used to analyze the barriers and facilitators to access while the supply side will be used to analyze the identified gaps in service provision.

RESULTS 1: FACTORS INFLUENCING ACCESS TO HPS BY YOUNG ADULTS.

3.1: ABILITY TO PERCEIVE

3.1.1: Health Literacy

Young adults' health literacy refers to their knowledge, level of education, and understanding of HIV/AIDS, and HIV prevention services including their perception of vulnerability to HIV.
Report shows that low use of HIV prevention services among young adults can be a result of low awareness of HIV, where to get tested, the perceived cost of HCT fear of stigmatization if positive and low-risk perception (14). This correlates with the *yathu yathu* cluster randomized trial carried out among 1989 AYP in 2 urban communities in Lusaka Zambia. The study showed that delivering community based led SRH services including HIV prevention services led to an increased knowledge of HIV status among the young people. Knowledge of HIV

status was higher in the intervention group at 73.3% compared to the control group which was only 48.4% (26).

Another study in Nigeria identified low educational attainment of young people as a risk factor for HIV. The focus group discussion identified that most of the adolescents living with HIV were orphans who faced financial hardship because they didn't have parents to support their higher education attainment (27). In Nigeria, many of the orphan care programs only support up to the secondary school level (28).

Edutainment is a powerful tool for promoting learning and behavioral change. It can be done using various media programs such as radio programs and TV programs. Edutainment keeps the viewer immersed with an entertaining narrative while the educational part also forms an integral part of the program (29). A randomized control trial study done in Nigeria shows the effectiveness of an educational entertainment tv series called MTV Shuga in changing attitudes and providing information relating to HIV/AIDS in Nigeria. The study result shows the young people who were exposed to MTV Shuga tv series showed improvement in their knowledge about HIV and were twice more likely to get tested for HIV within 8 to 9 months after the intervention compared to the placebo group (29,30).

In Nigeria, there is an education policy that guides the delivery of comprehensive sex education according to international standards in primary schools, secondary schools, and teacher training levels (1). This strategy however is poorly implemented in Nigeria due to a lack of funds and non-competent teachers (31). Information about sexuality and HIV prevention services is available to young people from their family, friends, peers, and social media. However, this study shows that most parents shy away from sharing this information with young people out of fear of exposing them to sex. Often, they tend to get information from their peers and sometimes this information might be misleading and can affect their conception of sexual and reproductive services including HIV prevention services (32). A study from Nigeria shows that young adults lack knowledge of comprehensive sexuality education, and this can affect their use of HPS (33).
The figure below shows the percentage of young people who can correctly identify both ways of preventing sexually transmitted HIV (34).
Knowledge of HIV prevention among young people in Nigeria is only 40.8% (24).

FIG 6: Knowledge about HIV prevention among young people in Nigeria (1).

3.1.2: Health Belief

Young adults' health belief is shaped by their religion, culture, and norm. It has an influence on their perception and willingness to seek out and use HIV prevention services. This also has an impact on how they perceive the severity of HIV and perceive belief in the effectiveness of the services and their perceived barriers to accessing these services (21). A study in Enugu shows the participants from the rural community had misconceptions about HIV. Some believed that HIV was a punishment from God for having sex and others believed that HIV was a punishment for witchcraft (35). This misconception can affect young adults' health belief and can have a negative impact on their ability to perceive HPS.
The fig 7 below shows the knowledge, risk, and perception among youth in Nigerian six geopolitical zones.

Indicators	NE	NW	NC	SE	SW	SS
Comprehensive knowledge of HIV	21.6	11.7	19.6	32.7	12.7	38.2
High-risk sex	9.6	4.3	16.1	19.4	20.2	24.8
Condom use at last high-risk sex	46.3	51.3	52.5	61.2	60.9	48.2
Average age at sexual debut	15.8	15.0	16.8	17.4	16.8	16.5
Low risk perception	37.6	20.8	38.4	40.1	40.2	44.5

FIG 7: HIV knowledge, risk, and perception among young people according to the six geo-political zones in Nigeria (1).

3.1.3: Trust and Expectation

Trust and expectation play a critical role when looking at young people's ability to perceive HIV prevention services. When they have a positive youth-friendly

experience with a healthcare provider, they are most likely going to perceive the services as being credible and effective. Likewise, they expect and trust their confidentiality and needs will be respected, with this they will perceive HIV prevention services as being safe and accessible because they will not want to be stigmatized or discriminated against (2). A study show that lack of trust has a negative influence on use of HPS by young adults (36). This is interrelated to personal and societal values which will be discussed below.

3.2: ABILITY TO SEEK

3.2.1: Personal and Societal Values

The adolescent stage is a transitional stage that comes along with various sexual and reproductive health challenges for young people. Yet the majority lack the appropriate information, knowledge, and service to meet their needs at this stage Societal groups like family and churches shy away from discussing issues related to sex and sexuality with young people due to societal values, and culture that believe that such talks will encourage young people to become promiscuous or have sex (37). Also, in Nigeria, there are rules that criminalize same-sex marriage and sex workers making it very difficult for people who belong to this group to seek sexual and reproductive care. They face discrimination from society and even health providers as shown below in Fig 8, and this can reduce their trust and expectation thereby discouraging young people's ability to seek HIV prevention services. This is interlinked with culture. Report shows that HIV prevalence for MSM is 25% and HIV testing and status awareness among this group is low at 58.5%. similarly, HIV prevalence among sex workers is 16.7% with HIV testing and status awareness of 69% (24).

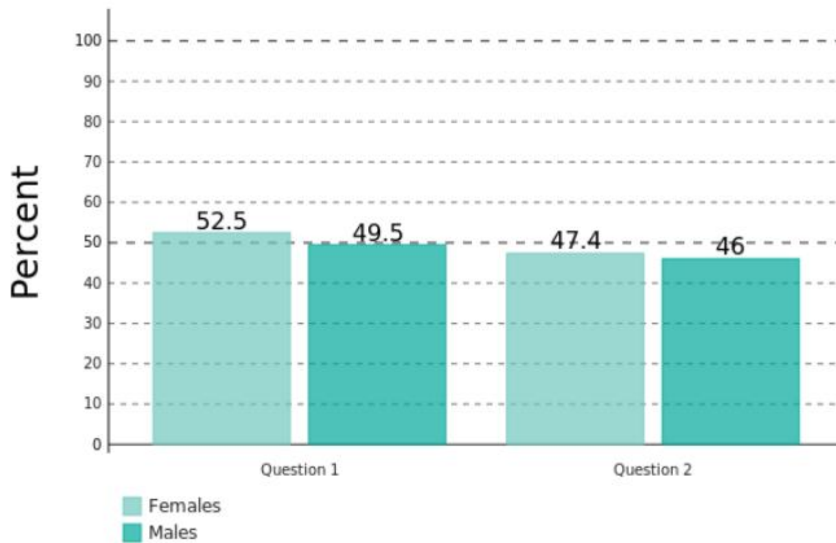

FIG 8: Discriminatory attitude towards people living with HIV in Nigeria (1)**.**

3.2.2: CULTURE

In Nigeria, culture, and religious values for the norm in the country, and this can influence how young people see discussions regarding sex and HIV prevention services. Some religions in Nigeria frown against sex before marriage and hence preach against the use of condoms (38).
A study showed that discouraging attitudes like stigma and discrimination towards sex tend to discourage young people from using HIV prevention. However, this study also shows that cultural identity and tradition played a significant role in shaping young adults' attitudes toward HPS. Participants reported that cultural teachings and sharing of knowledge and values through storytelling and ceremonies could be used to promote HIV prevention among young adults (39).

3.2.3: Gender

Gender can influence the use of sexual and reproductive health services including HIV prevention services. Some studies show that women are more likely to seek HIV prevention services due to the perceived risk of being more at risk of contact HIV compared to men (36).

Another study shows that social and cultural norms which expect women to be passive can limit their autonomy in decision-making with matters relating to their sexual health and ability to seek HIV prevention services (27).

3.2.4: Autonomy

The level of autonomy which young people have can influence their ability to make the right decisions regarding their sexual health. Young people who have greater autonomy tend to have more information regarding their sexual health and more access to health care services including HIV prevention services. This can include having financial access to source the information and pay for transportation to the health facilities and pay for the health care services including HIV prevention services (36).
On the other hand, young people who belong to marginalized groups such as LGBTQ+ may have limited autonomy to seek health care services when they face stigma and discrimination from society regarding their sexual orientation and behavior (2).

3.3: ABILITY TO REACH

3.3.1: Living Environment

In Nigeria, there is a disproportionate distribution of SRH services among the urban and rural settlements and this can influence the ability of young adults to reach HPS. NAIIS 2018 report on self-report of HIV testing shows a disparity between urban and rural residents. 36.8% of urban dwellers and 23.8% of rural dwellers had received an HIV test result. Furthermore, only 8.8% of adolescents aged 15 to 19 and 27.1% of young people aged 20 to 24 self-reported having ever received HIV test results (6).
In the urban areas, HTS coverage was 57.7% while HTS coverage in rural areas was 43.6% rural areas are less likely to have been tested compared to urban areas (3).
This agrees with a study conducted in Nigeria by Odimegwu which shows a low national and regional uptake of voluntary counseling and testing among young adults because of not having a solid long-term plan and a lack of dedicated VCT dedicated centers in the community level (40).

On the contrary, urbanization can lead to overcrowding and long waiting queues in urban health facilities and young people who are concerned about privacy and confidentiality may be discouraged from seeking HPS (3).

3.3.2: Transport and Mobility

Young people who do not have access to transportation or cannot pay for the cost of transporting to the health facility may be discouraged from seeking HPS even if these services are free, they still pay to transport themselves to the

health facility. Young people with limited mobility due to illness or disability may face difficulties in reaching health facilities and this can discourage them from seeking HPS (33).

3.3.3: Social Support

Young people who have emotional support from family, friends and peers may be more likely to seek HPS. Peer support is particularly important to young people who might feel ashamed and isolated due to their sexual orientation. Peer support can provide a sense of belonging and a haven where information and education about SRH services including HPS can be shared thereby encouraging the uptake among youth (41).

Approximately 20% of new HIV infections occur among MSM youth aged 15 to 24 years. A study done on the effectiveness of the ICARE program which involved the use of four peer navigators conducting social media outreach at clinic, community, and home-based settings to promote HIV testing among young MSM showed an increase in HTS including linkage to care (41).

3.4: ABILITY TO PAY

3.4.1: Income, Assets, and Social Capital

The economic status of an individual can influence the ability to pay for SRHS including HPS. Young adults with higher economic status tend to test more for HIV compared to young people with lower economic status. The following studies show that young people report cost of services makes it difficult for them to access HPS (35,42–44).

3.4.2: Health Insurance

The national health insurance scheme in Nigeria helps to protect youths from incurring catastrophic costs from health care services by reducing the cost of these services and making them more affordable. This can encourage the use of HPS. However, most youths do not have any health insurance coverage and rely on out-of-pocket payments, and this may discourage them from using HPS (43,44).

3.5: ABILITY TO ENGAGE

3.5.1: Empowerment

A study in South Africa suggests that youth empowerment is a critical component of effective HIV prevention programs as it helps young adults to develop the knowledge, skills, and confidence they need to make informed choices about their sexual health. Empowerment can increase the youth agency and help enable them to challenge social norms and cultural practices that contribute to HIV risks, such as gender-based violence or stigma and discrimination related to sexual orientation or HIV status (45).

3.5.2: Information

Young people who find themselves working or living on the streets are referred to as street-connected young people and they are a high-risk group.
A study in Nigeria shows that providing accurate and comprehensive information about HIV prevention was a critical component of the 4 youth by youth project success in Nigeria. Peer educators were trained to provide accurate information about HIV prevention methods including condom use, abstinence, and voluntary medical male circumcision they also facilitated group discussions and activities that helped young people understand how to apply this information in their own lives (46).

Another qualitative study carried out in Kenya showed that lack of information was a significant barrier to engagement with HIV prevention services among street-connected young people. Many of the participants reported that they have never received any information about HPS or that the information they received was either incomplete or inaccurate making it difficult for them to make informed choices about their sexual health. Others reported that they were aware of HIV prevention methods but did not know how to access services or were afraid of being stigmatized or discriminated against if they sought care (47). This further correlates with another study from Ghana (48).

3.5.3: Adherence

Some studies show that lack of Adherence to HPS has a negative impact on the use of the services by young adults. This is a critical factor to address HIV epidemic among young adults in Nigeria (49–51).

3.5.4: Caregiver support

Studies show that there is lack of care giver support mechanisms, and this has a negative influence on young adults' comfort and confidence in seeking out HPS (27,43,52–54).

RESULTS 2: GAPS IN HPS FOR YOUNG ADULTS

3.6: APPROACHABILITY

To increase the approachability of HIV prevention services for young adults, it is important to provide transparent and easily accessible information about available services and treatments as well as engage in outreach activities to promote awareness and accessibility of these services (25).

3.6.1: Transparency and Information

NACA, in collaboration with other Non-Governmental Organizations (NGOs) is responsible for coordinating the country's response to HIV/AIDS. They provide resources and information related to HIV prevention, counseling, testing, treatment, and care through various means such as social media campaigns, school-based programs, and through hotlines and helplines (3,18).
However, a cross-sectional study conducted in 230 primary health centers (PHC) in Plateau State Nigeria shows very poor quality of service offered to young adults. Only 11.3% of the PHC offered counseling on sexuality and only 17% offered counselling on safe sex. The study also revealed that only 2.6% of the PHCs had posters targeted at young people and this can affect the approachability of the services for young adults because they do not have the required information regarding HPS (55). This study, however, was carried out in only one state and cannot be used to generalize for the whole country.

3.6.2: Outreach and Screening

NACA and other NGOs in Nigeria organize community outreach programs to raise awareness about how to prevent HIV and screening for HIV is also done in these communities (18). However, HIV testing among young people in Nigeria is very low compared to countries like Zambia, Kenya, and South Africa (56). A report from 2017 shows that Nigeria has a very poor adolescent HIV testing track record with only 16.7% of the adolescents and 23.7% of adolescents and young people having ever been tested for HIV this gives rise to a poor comprehensive knowledge of HIV prevention among young people (28).

Similarly, the federal ministry of Health rolled out the national condom strategy plan from 2017 to 2021 to ensure the availability and access to both male and female condoms through mass media campaigns and outreach activities to promote condom use against sexually transmitted infections like HIV and prevent unwanted pregnancy (1). Nevertheless, this strategy faced challenges

due to a lack of awareness, cultural beliefs against condom use, and the stigma surrounding their purchase and use hence making it difficult for services to reach the target group thereby leading to low use of these services (44).

3.7: ACCEPTABILITY

3.7.1: Professional Values, Norms, Culture, and Gender

The acceptability of HPS by young adults is influenced by professional values, cultural norms, and gender biases of the healthcare provider. Report shows that some healthcare providers exhibit strong discriminating attitudes towards certain groups such as men who have sex with men or sex workers, young adults who belong to these groups may be discouraged from accepting HIV prevention services out of fear of being judged or victimized against.
A study by Abuosi shows that the young participants reported that most healthcare providers humiliated, shamed them, did not respect their views, judged them, and called them bad boys and girls for requesting condoms instead of abstaining from sex (57). Another study also shows that sometimes young adults were turned back when they go to health facilities to receive SRH services including HIV prevention services (58). Hence young people feel embarrassed, and this does not promote adolescent-friendly care and can discourage young people from accessing HPS.

The gender of the health provider can also influence the use of HIV prevention services, particularly in areas where cultural norms forbid women from receiving care from men. In instances where only male providers were available, young women faced additional barriers to accessing HPS (8).

3.8: AVAILABILITY AND ACCOMMODATION

3.8.1: Geographic location

In Nigeria, there are disparities in the regional distribution of healthcare facilities that offer SRHS including HPS, and this can affect the uptake of HTS among Nigerian youth (3). Some urban areas have well-established HIV prevention programs and services, while many rural areas lack adequate infrastructure and resources to provide similar services. A study carried out in Benue state (the state with the highest burden of HIV) Nigeria, examined the distribution of health care facilities and HIV/AIDS response sites and found that these sites were unevenly distributed across the state with some areas having a high concentration of facilities and others having very few (59). This can result in the

young adults in these areas not receiving the same level of education, testing, and treatment options as those in the urban areas. Reports show that when testing services are located far away from where people live, this can discourage the uptake of the services.
Another study in Nigeria among 19,268 young respondents, also highlights the urban-rural discrepancy due to geographical location (60). This further correlates with the study by Thongmixay et al that shows that the clinics in rural areas were hard to reach by most young people and lack infrastructure (61).

3.8.2: Accommodation

Accommodation is also influenced by both opening hours and appointment mechanisms, and this will be discussed below.

3.8.3: Hours of Opening

The opening hours of healthcare facilities are limited mostly in the morning hours when young people are either in school or at work. These opening times may not be convenient for young people, and this can hinder access to HPS. Some studies show that health facility opening hours is during school hours and they do not also function during weekends or public holidays, and this is not convenient for young people (62,63).

3.8.4: Appointment Mechanism

Appointment Mechanism can help to make the delivery of HPS more efficient as healthcare providers can plan their schedule and ensure they have resources including staff to provide these services to reduce waiting times. A study shows that young people complained of long waiting times at the health center and expressed fears of being seen by someone who will recognize them(64). Since young people are impatient, this can affect the demand for HPS. This is also related to confidentiality which was discussed earlier.

3.9: AFFORDABILITY

3.9.1: Direct Cost

Even though HTS is free in most government health facilities, laboratory tests for STIs, condoms and some medications are not free. A study done in Nigeria shows that many participants had to pay to receive HPS (65). Another study in Nigeria shows that SRH services were available but not financially accessible to young adults and this can affect the access to HPS (44).

This correlates with the study done in Kenya where many of the study participants reported that they had difficulties in paying for these services including transporting to the clinic and this can hinder the affordability of HPS among young people (66).

3.9.2: Indirect Cost

All additional costs incurred to receive healthcare services but not the actual cost of the service are indirect costs and can influence the uptake of HPS among youth (42). Examples of such costs are transportation costs. This is related to the direct cost above.

3.9.3: Opportunity Cost

Opportunity cost is the possible benefit that young adults must forgo for choosing to access HPS such as missing school hours or loss of wages for being absent from work. Youths who are concerned about the potential impact of attending these services may have on their future opportunities may be discouraged from using the HPS (67). This is interlinked with opening hours which has been discussed earlier.

3.10: APPROPRIATENESS

3.10.1: Technical and interpersonal quality

A study in Nigeria shows that during the covid 19 pandemic, there was disruption in the supply chain, limited access to medication, and a reduction in the availability of health workers and these challenges had a negative impact on the quality, adequacy and coordination and continuity of HIV prevention services provided to young adults in Nigeria (68).

3.10.2: Adequacy

This is related to technical and interpersonal quality and has been discussed above.

3.10.3: Coordination and continuity

This has been discussed above under technical and interpersonal quality.

RESULTS 3: GOOD PRACTICES AND INTERVENTIONS

Best practices and effective interventions from countries with similar context to Nigeria to improve the use of HIV prevention services among young adults.

To address the objective of identifying best practices and effective interventions from countries with similar context to Nigeria, the following section presents key findings from the literature:

3.11: Youth-friendly services

The provision of youth-friendly services has been found to be effective in increasing the utilization of HPS among young adults (69). These services are confidential, non-judgmental, and tailored to the specific needs and preferences of young adults. Ghana has implemented a comprehensive youth-friendly HIV prevention program that involves targeted outreach, peer education, access to condoms, and HIV testing. A study conducted in Ghana showed a community randomized trial conducted in twenty-six northern communities in Ghana among 2664 adolescents aged 15 to 19 years. The study measured the following outcomes: the use of sexually transmitted infection (STIs) management, HIV testing and counseling, and antenatal care. Results show that STI/ HIV service usage increased in the intervention group from 3% to 17% compared to the comparison group which only increased from 5% to 8%. This shows that the intervention communities have more than 2 times the odds of using STI/HIV services compared to the comparison group. (OR 2.47 adjusted for baseline usage, 95%CI 1.78-3.42) (70). However, this study was quantitative data hence the reasons for the various responses from the participants could not be explored. Also, participants were asked to recall their usage of these services over a 12-month period hence usage might be underestimated due to recall bias.

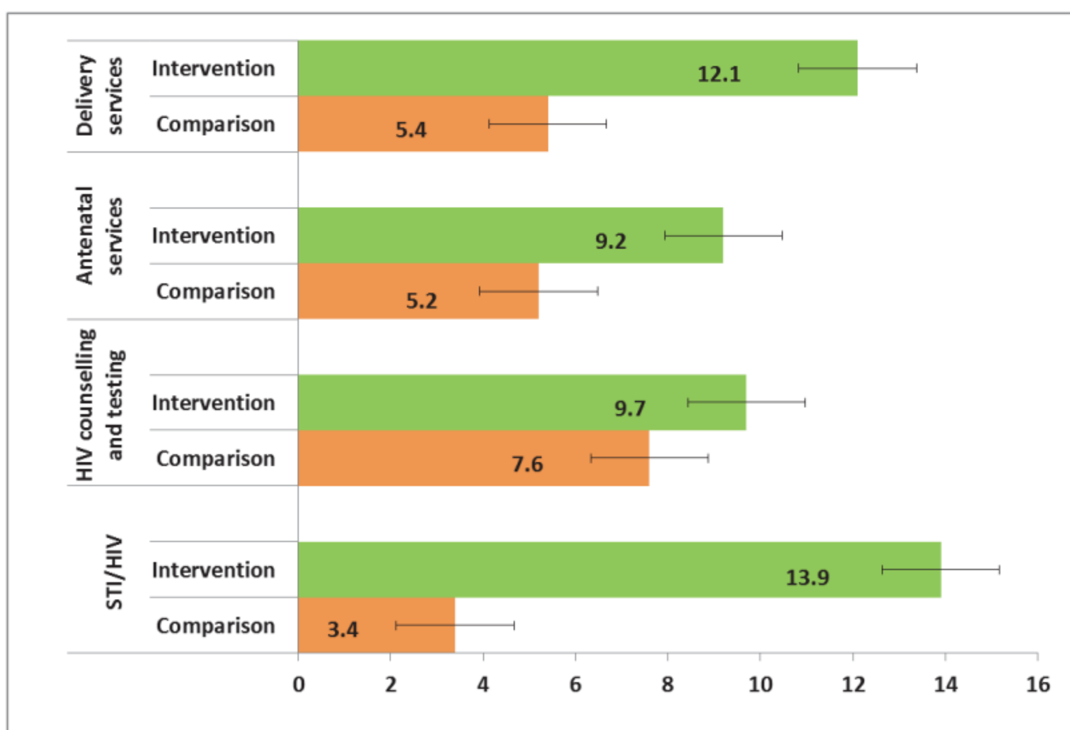

FIG 9: Change in service usage (percentage) (70).

The following countries have also successfully implemented such programs: Kenya, Malawi, south Africa and shown to improve use of HPS by young adults (2,71,72). In Nigeria even though the national HIV and AIDS strategic framework shows the existence of youth friendly clinics however implementation is suboptimal hence the good practice from the other countries can inspire Nigeria to strengthen the implantation and provision of youth friendly clinic and services (18).

3.12: Community engagement

Community engagement has shown promising results in improving the use of HPS among young adults. Community engagement strategies include outreach programs, community mobilization, and involvement of key stakeholders to raise awareness, reduce stigma and promote the uptake of services (2). Countries like Cote d Ivoire, Mali, and Senegal have implemented The Atlas program which involves the secondary distribution of HIV self-test kits by peer educators. This is a resilient strategy to ensure the continuous provision of HTS to key populations such as MSM, FSW, and PWID who face barriers like stigma, discrimination, punitive laws, and self-isolation. This program helps in the reduction of stigma and discrimination faced by the key population which young people belong to this group (73). Like the mentioned countries, Nigeria also punitive laws that criminalizes same sex marriage discouraging young,

marginalized people from using HPS (65). These interventions can improve HTS among marginalized young adults and improve their use of HPS.

3.13: Empowerment Program

Empowerment programs have been effective in increasing young adults' agencies and decision-making power regarding the use of HPS. These programs focus on building self-esteem, improving communication skills, and promoting gender equality (74). Examples of empowerment programs include life skills training, leadership development, and economic empowerment initiatives. These have been implemented in the following countries: Zimbabwe, South Africa, and Ghana (75–78).

3.14: Involve men in sexual and reproductive health interventions

Engaging men in sexual and reproductive health including FP and HIV prevention services and challenging harmful masculinity norms is an important strategy to improve the use of HPS among young adults. When men are involved, they become more aware of the risks and consequences of HIV transmission, and they will take measures to protect themselves and their partners. A study on the evaluation of male engagement intervention in Kabele Uganda involved training 32 male peer educators to engage men in discussions about gender norms, family planning, and HIV prevention and treatment. The evaluation showed that the intervention was successful in increasing men's knowledge and behavioral change. Men who participated in the intervention were more likely to use condoms, get tested for HIV, and support their partner's use of family planning methods (79). Nigeria being a patriarchal society with gender stereotypes such interventions will help to get men including young men involved with SRH and challenge harmful masculinity norms (80).See the figure below for the intervention outcomes.

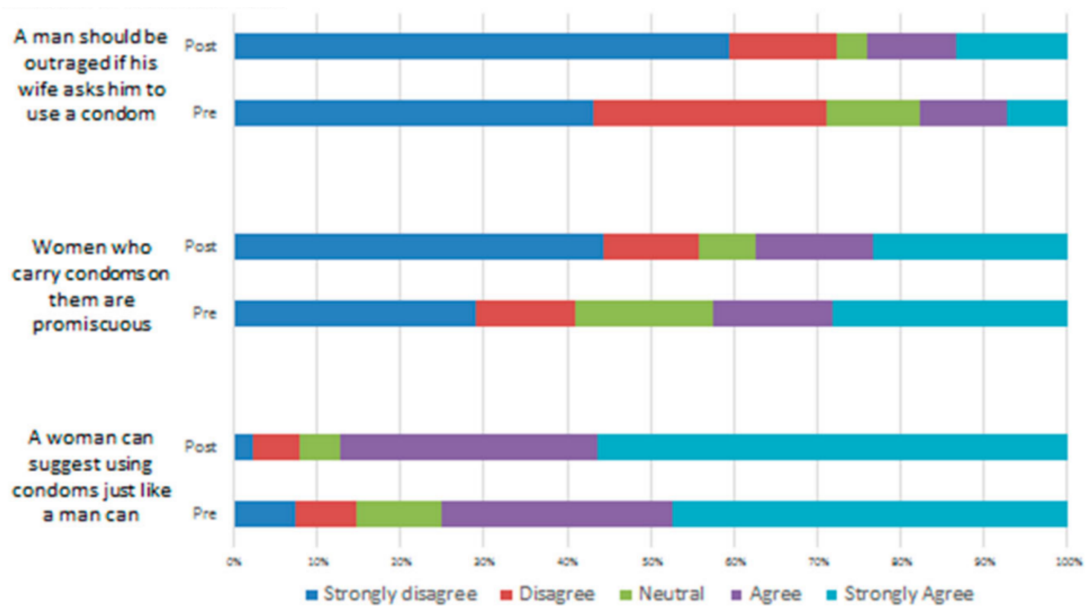

FIG 10: Gender and condom use (79).

4.0 DISCUSSION

In this section, I provide a summary of the main results and address the interlinkages between various factors and issues.

The main findings of this study highlight several factors that influence the use of HIV prevention services among young adults in Nigeria. These factors include the lack of comprehensive sexuality education, discriminatory attitudes and stigma, low perceived risk, negative health provider attitudes towards young people's sexual and reproductive health needs including HPS, limited youth-friendly services equipped with well-sensitized health care workers, social and cultural norms about sex, low-risk perception of HIV and poor sexual health-seeking behaviors among youth, the actual or perceived cost of HPS, fear of getting a positive HIV result and stigmatization, limited awareness of HIV, HIV services and where to get tested. These findings align with the dimensions of healthcare accessibility, acceptability, approachability, availability, affordability, and appropriateness.

My study showed among all the factors, stigma and discrimination were most prominent and it affects young, marginalized groups like MSM and sew workers.

Another prominent factor is lack of youth friendly services, and this factor affects youths living in rural areas more compared to those in the urban areas. Another prominent factor is financial barriers, and this affects young adults who belong to the lower economic status more compared to those who belong to the higher economic status. Financial and geographical barriers were also prominent. These factors contribute to the low use of HPS among young adults.

4.1 APPROACHABILITY/ ABILITY TO PERCEIVE

4.1.1 APPROACHABILITY

The findings show that the approachability of HPS is hindered by various factors. While the NACA and other NGOs play a crucial role in coordinating the country's response to HIV/AIDS, there are still significant challenges in providing services to young adults. This is highlighted by the study in plateau state that reveals lack of adequate counselling, limited counselling on safe sex and few posters targeting youth friendly services for young adults. It is worth noting that this study scope was limited to one state and may not represent the entire country, highlighting the need for more extensive research to gain a comprehensive understanding of the situation nationwide. Similarly, another study shows that HIV testing for young adults is very low compared to neighboring countries like Zambia, Kenya, and south Africa. These low testing rates contribute to a lack of comprehensive knowledge of HPS among young people. Furthermore, the national condom strategy plan introduced by the ministry of health has failed to reach young adults due to obstacles like cultural belief against condom use, stigma, and discrimination.

4.1.2 ABILITY TO PERCEIVE

This is influenced by various factors. Health literacy plays a significant role in young adult's use of HPS. Efforts to improve health literacy can lead to positive outcomes as demonstrated by the *yathu yathu* cluster randomized trial in Zambia and the MTV Shuga tv series entertainment in Nigeria which led to increased testing among young adults.

Young adults' health beliefs is shaped by religion, culture and norms which in turn influences their perception of HPS. There are variations in HIV knowledge, risk perception and belief among young adults across the six geopolitical zones in Nigeria. A study in Enugu highlights the misconception young adults have about HIV. Most participants believe HIV is a punishment from God or because of witchcraft and these can have a negative impact to perceive HPS.

Another factor is trust and expectation, young adults expect their confidentiality to be respected and they fear stigma and discrimination. This has an impact on how they perceive HPS, and this factor is linked to personal and societal values.

4.2 ACCEPTABILITY/ ABILITY TO SEEK

4.2.1 ACCEPTABILITY

Cultural values can influence professional values of healthcare providers as highlighted in some studies. A study shows that discriminatory and judgmental attitudes persist among certain health care providers particularly towards marginalized groups like MSM and sew workers. Young adults who belong to this group may avoid seeking HPS due to fear of judgement, humiliation, and discrimination. This demonstrates a critical gap in ensuring equitable access to care for all young adults. Another study highlighted that young adults reported that they were humiliated, judged, shamed, and even turned back by healthcare professionals when they go to seek SRH services including HPS. Such negative encounters not only undermine the trust and expectations between young adults and the healthcare providers but also create a culture of stigma and embarrassment, ultimately discouraging young adults from engaging with HPS. Best practice in Ghana shows that the availability of youth friendly clinics has led to an increase in use of HPS with the intervention group two times more likely to use HPS compared the control group.

4.2.2 ABILITY TO SEEK

The adolescent stage represents a critical period marked by various sexual and reproductive health challenges. However, the lack of appropriate information knowledge and services tailored to this stage hinders young adults' ability to seek and access HPS. Societal norms and values often perpetuated by family and religious institutions contribute to a culture of silence surrounding discussions related to sex and sexuality. The fear of encouraging promiscuity or sexual activity leads to a reluctance to engage in open discussions, further marginalizing young adults and limiting their access to vital HPS. Furthermore, criminalization of same sex marriage and sex work in Nigeria compounds the challenges faced by these marginalized group as discrimination from both society and health care providers limits trust, reduces their autonomy and discourages seeking care including HPS. The high HIV prevalence rates among MSM and sew workers coupled with low testing and status awareness rates shows it is critical to overcome these societal barriers to improve ability to seek care by young adults.

Best practices from other countries Cote d Ivoire, Mali, and Senegal like show how successful the atlas program is in distributing HIV self-test kits by peer educators to ensure the continuous provision of HTS to marginalized group.

Gender dynamics is also important. Social and cultural norms often shape perception of risk with women perceiving themselves as more vulnerable to HIV

transmission. These norms can drive women to seek HPS more actively. However, these same norms can restrict women's autonomy in making decisions about their sexual health highlighting the need for interventions that empower women and promote gender equality in health decision making.

4.3 AVAILABILITY AND ACCOMODATION/ ABILITY TO REACH

4.3.1 AVALABILITY AND ACCOMODATION

The geographical location of healthcare facilities offering HPS presents a significant challenge with notable disparities between urban and rural areas. This regional distribution imbalance has implications for the uptake of HTS, as urban areas tend to have well established HPS programs while rural areas often lack sufficient infrastructure and resources to provide comparable services. The study conducted in Benue state which bears the highest burden of HIV in Nigeria shows the uneven distribution of health facilities and HIV/AIDS response sites across the region. This inequality contributes to varying levels of education, testing and treatment options available to young adults. Still in line with these findings, the accessibility of HTS services is further compromised by the geographical location factor. The study involving 19268 young respondents highlights the urban rural discrepancy in SRHR accessibility reinforcing the notion that clinics in rural areas are often challenging to reach for most young individuals and suffer from inadequate infrastructure. Like the observations made by Thongmixaxy et al.
The limited opening hours and poor typically concentrated in the morning hours when young individuals are in school and inadequate appointment mechanism. Such as, long waiting times can deter young adults from seeking HPS consequently affecting the overall demand for these services. This concern is interlinked with the need for confidentiality which was previously discussed as a significant factor influencing HPS.

4.3.2 Ability to reach

several factors within the realm of living environment transport and mobility and social support influence the capacity of young adults to access HPS contributing to the disparities in service uptake and use. The urban rural divide is evident in disparities observed in HIV testing rates. The NAIIS 2018 report highlights lower HIV testing rates among rural residents compared to urban counterparts. This finding correlates with the study conducted by odmegwu which revealed a national and regional underutilization of voluntary counselling and testing among young adults due to absence of comprehensive long-term plans and dedicated testing centers at the community level. Despite the

advantage of urbanization, it can lead to overcrowding and long waiting ques in urban health facilities, potentially deterring young adults from seeking HPS due to concerns about privacy and confidentiality (40).
Other influencing factors are transport and mobility and social support. The study on the effectiveness of the ICARE program provides compelling evidence of the positive impact of peer support on HIV testing rates among young MSM. The use of peer navigators and social media outreach demonstrated a significant increase in HTS and linkage to care among MSM emphasizing the potential of social support interventions to enhance accessibility and uptake among young adults.

4.4 AFFORDABILITY/ABILITY TO PAY

4.4.1 AFFORDABILITY

The affordability of HPS is a critical factor influencing the accessibility and use among young adults. The provision of free HTS services in most government health facilities contrasts with the reality that laboratory tests for STIs, condoms and certain medications are not offered free of charge. The findings from the Nigerian study emphasize that a considerable portion of participants had to pay to access HPS. This observation resonates with a similar study conducted in Kenya where participants reported difficulties in covering the costs associated with receiving services including transportation expenses. These financial burdens act as a barrier limiting young adults' ability to afford access to HPS.

4.4.2 ABILITY TO PAY

Economic status is a significant determinant of young adults' ability to pay for SRHS including HPS. It is evident that young adults with higher economic status are more likely to engage in HIV testing compared to those with lower economic status. The findings from several studies consistently highlight the cost of services as a barrier that hinders young adults from accessing HPS.
The national Health insurance scheme can serve as an incentive for young adults to engage in HPS as it reduces the financial burden associated with seeking care. However, studies show a significant gap exists between the potential benefits of health insurance and its actual utilization among youths,

4.5 APPROPRIATENESS/ ABILITY TO ENGAGE

4.5.1 APPROPRIATENESS

Technical and interpersonal quality is interlinked with adequacy and coordination and continuity. They are important components that directly

impact the appropriateness of services. A study highlighted the disruptions caused by covid 19 pandemic which led to challenges in the supply chain, limited access to medication and a reduction in the availability of healthcare workers. These obstacles collectively had a negative effect on the quality, adequacy, coordination and continuity of HPS provided to young adults in Nigeria. This disruption posed by the pandemic shows the vulnerability SRHS to external shocks and the need for robust and resilient healthcare systems that can adapt to unforeseen challenges while ensuring the provision of high-quality care.

4.5.2 ABILITY TO ENGAGE

The ability for young adults to engage with HPS is influenced by various key dimensions. A study conducted in south Africa shows the role of youth empowerment in enhancing the efficacy of HPS. Empowerment equips the youth with knowledge skills and confidence and increases their agency to make informed decisions about their sexual health including HPS. A study in Nigeria shows that trained peer educators played a key role in delivery accurate information regarding HPS. However, challenges in accessing information persists as demonstrated by the qualitative study in Kenya. Where street connected young people face barriers to receiving accurate information regarding HPS due to stigma and discrimination.
Care giver support is also a very important context in young adults' engagement with HPS and studies show that lack of caregiver support mechanisms emerge as a challenge influencing young adults' comfort and confidence in seeking HPS. Best practice from Uganda shows that engaging men in HIV prevention was successful in increasing men's knowledge and behavior change. Participants were more likely to use condoms and support their partner's use of SRHS thereby leading to improved outcomes in the use of HPS.

4.6: Study limitation

The following limitations will be acknowledged. Firstly, the study is based on a literature review, which may introduce inherent biases and limitations associated with the selected articles. The inclusion of only English language publications may have excluded relevant information published in other languages, potentially limiting the comprehensiveness of the findings. Additionally, the study is limited to the available literature and may not capture the most recent developments or emerging trends in the field of HPS among young adults in Nigeria.

Lastly, the study focuses on the factors influencing the use of HPS among young adults in Nigeria, but it does not address the effectiveness or the impact of these services on HIV prevention outcomes. Future research should consider evaluating the effectiveness of different interventions and programs in reducing HIV transmission rates among young adults in Nigeria.

Despite the highlighted limitations, this study provides valuable insights into the factors influencing the use of HPS among young adults In Nigeria, contributing to the existing knowledge base and informing future interventions and policies in this area.

5.0 CHAPTER FIVE CONCLUSION AND RECOMMENDATION

5.1: CONCLUSION

In conclusion, this study has identified several key findings regarding the use of HPS among young adults in Nigeria. These findings highlight the barriers and challenges faced by young adults in accessing these services, including the lack of comprehensive sex education, discriminatory attitudes and stigma, limited availability of services, affordability issues, geographical location issues, lack of youth friendly services, presence discriminatory laws and gender stereotypes. These barriers align with the dimensions of healthcare accessibility, acceptability, approachability, availability, affordability, and appropriateness. Finding show that there are various barriers that affect young adults use of HPS and there are gaps in the provision of HPS for young adults in Nigeria.
Good practices from other countries show the following interventions to be effective in improving HPS among young adults: effective implementation and scale up of comprehensive sexuality education, provision of youth friendly services that are non-judgmental and tailored to the needs of young adults, community engagement programs that will improve awareness, subsidize healthcare cost, involving men in SRH, advocacy and legals reforms against discrimination, reduce stigma and improve the use of HPS among young adults, involving men in SRH including HPS to improve their participation in SRH and they will in turn encourage their partners in SRH services.

5.2: RECOMMENDATIONS

Based on the study findings, the following recommendations have been made to improve access to and use of HIV prevention services among young adults in Nigeria:

5.2.1 Recommendations for policy makers (Government, FMOH, NGOs)

- Strengthen comprehensive sexuality education: The Ministry of Health should strengthen the implementation of Comprehensive Sexuality education programs in schools and communities, especially in rural areas. These programs should provide accurate information on HPS, be age-appropriate, culturally sensitive, and address gender norms and stereotypes.
- Address discriminatory attitudes and stigma: sensitization and training programs should be conducted for healthcare providers to address discriminatory attitudes and judgmental behavior towards young adults seeking HPS services. This will create a more supportive and non-judgmental environment for young adults, especially marginalized groups to access these services.
- Improve availability of youth-friendly health services: The Ministry of Health in Nigeria should establish and promote youth-friendly health services that are accessible, non-judgmental, equipped with well trained and sensitized healthcare workers, and tailored to the needs of young adults. These services should provide confidential HIV testing, counseling, and access to contraceptives and other prevention methods in a non-stigmatizing and youth-friendly manner.
- Enhance geographical accessibility: expanded outreach programs should be implemented to improve geographical accessibility to HPS, particularly in rural areas where access to healthcare facilities is limited. This will reduce the barriers associated with distance and transportation costs.
- Address financial constraints: the ministry of Health should explore options such as subsidizing the cost of testing, providing free or low-cost contraceptives, and exploring innovative financing mechanisms to reduce the cost barriers associated with accessing HPS. This will ensure that young adults, especially those from low-income backgrounds, can afford these services.
- Engage male role models: involve male role models, such as community leaders, athletes, and celebrities, in promoting HIV prevention and challenging harmful masculinity norms. This can help create a supportive environment for young men and boys to seek and utilize HIV prevention services and support their partners to seek SRH services.
- Strengthen policy and legal frameworks: Advocate for policy and legal reforms that protect the rights of young adults and remove discriminatory barriers to accessing HIV prevention services. This includes addressing age restrictions, ensuring confidentiality, and promoting comprehensive healthcare coverage.

5.2.2 Recommendation for further study (Academia)

- Conduct further research: conduct further research to explore the specific barriers and facilitators to accessing HIV prevention services among different subgroups of young adults, such as those from marginalized communities or with specific risk factors. This will help tailor interventions and strategies to meet their unique needs.

REFERENCES

1. UNAIDS. Country progress report-Nigeria. UNAIDS [Internet]. 2022 [cited 2023 Jul 10]; Available from: https://www.unaids.org/sites/default/files/country/documents/NGA_2020_countryreport.pdf

2. WHO. ADOLESCENT-FRIENDLY HEALTH SERVICES FOR ADOLESCENTS LIVING WITH HIV: FROM THEORY TO PRACTICE TECHNICAL BRIEF PEER DRIVEN ADOLESCENT HIV MODELS OF CARE [Internet]. 2019. Available from: http://apps.who.int/bookorders.

3. Nigeria. The Federal Republic of Nigeria Nigeria Demographic and Health Survey 2018 National Population Commission Abuja, Nigeria [Internet]. 2019. Available from: www.DHSprogram.com.

4. Nigeria geography, maps, climate, environment and terrain from Nigeria | - CountryReports [Internet]. [cited 2023 May 9]. Available from: https://www.countryreports.org/country/Nigeria/geography.htm

5. WHO Nigeria. M A K I N G P E O P L E H E A L T H I E R. 2021 [cited 2023 Aug 4]; Available from: https://www.afro.who.int/sites/default/files/2022-08/WHO%20Nigeria%202021%20annual%20report_single%20paged.pdf

6. NIGERIA HIV/AIDS INDICATOR AND IMPACT SURVEY PARTNERS. 2018 [cited 2023 May 9]; Available from: www.health.gov.ng

7. UNITED NATIONS NIGERIA. COMMON COUNTRY ANALYSIS FEBRUARY 2022. 2022;

8. Princewill CW. The Role of Education, Culture and Religion on Domestic Violence on Women in Nigeria. London Journal of Research in Humanities and Social Sciences. 2023;23.

9. Kingsley M, Ezeh N. PATRIARCHAL EFFECT ON THE EDUCATION OF THE GIRL-CHILD IN NIGERIA. SAPIENTIA FOUNDATION JOURNAL OF EDUCATION, SCIENCES AND GENDER STUDIES [Internet]. 2023 Apr 1 [cited 2023 Aug 7];5(1):23–41. Available from: http://sfjesgs.com/index.php/SFJESGS/article/view/375

10. Satzen AP, Kosen JL, Nwaenyi SO, Daktong AH, Supji MP, Danja EG, et al. Environmental Factors Associated with Late Initiation of Antiretroviral Therapy among People Living With HIV. Vol. 8, International Journal for Psychotherapy in Africa. 2023.

11. Vollset SE, Goren E, Yuan CW, Cao J, Smith AE, Hsiao T, et al. Fertility, mortality, migration, and population scenarios for 195 countries and territories from 2017 to 2100: a forecasting

analysis for the Global Burden of Disease Study. The Lancet. 2020 Oct 17;396(10258):1285–306.

12. Nigeria Overview: Development news, research, data | World Bank [Internet]. [cited 2023 May 6]. Available from: https://www.worldbank.org/en/country/nigeria/overview

13. Home | National Bureau of Statistics [Internet]. [cited 2023 May 9]. Available from: https://www.nigerianstat.gov.ng/

14. National Agency for the Control of AIDS (NACA). The National HIV Strategy for Adolescents and Young People 2016–2020. 2020.

15. Home - Nigeria Health Atlas [Internet]. [cited 2023 May 9]. Available from: https://nigeriahealthatlas.opendataforafrica.org/

16. Out-of-pocket expenditure (% of current health expenditure) - Nigeria | Data [Internet]. [cited 2023 May 9]. Available from: https://data.worldbank.org/indicator/SH.XPD.OOPC.CH.ZS?locations=NG

17. Al Mustanyir S, Mcmillan D. Government healthcare financing and dwindling oil prices: Any alternatives for OPEC countries? Government healthcare financing and dwindling oil prices: Any alternatives for OPEC countries? ABOUT THE AUTHOR. 2023 [cited 2023 Aug 7]; Available from: https://doi.org/10.1080/23322039.2023.2166733

18. National Agency for the Control of AIDS. NATIONAL HIV AND AIDS STRATEGIC FRAMEWORK 2021-2025. 2021 [cited 2023 May 9]; Available from: https://naca.gov.ng/wp-content/uploads/2022/03/National-HIV-and-AIDS-Strategic-Framework-2021-2025-Final.pdf

19. Health & HIV | UNICEF Nigeria [Internet]. [cited 2023 May 8]. Available from: https://www.unicef.org/nigeria/health-hiv

20. Kareem YO, Dorgbetor CI, Ameyaw EK, Abubakar Z, Adelekan B, Goldson E, et al. Assessment and associated factors of comprehensive HIV knowledge in an at-risk population: a cross-sectional study from 19,286 young persons in Nigeria. Ther Adv Infect Dis [Internet]. 2023 Jan 1 [cited 2023 Jul 2];10. Available from: https://doi.org/10.1177/20499361231163664

21. Kareem YO, Dorgbetor CI, Ameyaw EK, Abubakar Z, Adelekan B, Goldson E, et al. Assessment and associated factors of comprehensive HIV knowledge in an at-risk population: a cross-sectional study from 19,286 young persons in Nigeria. Ther Adv Infect Dis [Internet]. 2023 Jan 1 [cited 2023 Jul 11];10. Available from: https://doi.org/10.1177/20499361231163664

22. Nwaozuru U, Iwelunmor J, Ong JJ, Salah S, Obiezu-Umeh C, Ezechi O, et al. Preferences for HIV testing services among young people in Nigeria. BMC Health Serv Res [Internet]. 2019 Dec 27 [cited 2023 Jul 4];19(1):1–9. Available from: https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-019-4847-x

23. Alistar SS, Brandeau ML. Decision making for HIV prevention and treatment scale up: Bridging the gap between theory and practice. 2012 [cited 2023 May 8]; Available from: http://mdm.sagepub.com/.

24. Nigeria | UNAIDS [Internet]. 2021 [cited 2023 May 9]. Available from: https://www.unaids.org/en/regionscountries/countries/nigeria

25. Levesque JF, Harris MF, Russell G. Patient-centred access to health care: conceptualising access at the interface of health systems and populations. 2013 [cited 2023 Jul 6]; Available from: http://www.equityhealthj.com/content/12/1/18

26. Hensen B, Floyd S, Phiri MM, Schaap A, Sigande L, Simuyaba M, et al. The impact of community-based, peer-led sexual and reproductive health services on knowledge of HIV status among adolescents and young people aged 15 to 24 in Lusaka, Zambia: The Yathu Yathu cluster-randomised trial. PLoS Med. 2023 Apr 1;20(4):e1004203.

27. Onwuasoigwe O. A Revisit to Caregivers' Attitude and Knowledge of HIV/AIDS in Nigeria. 2018 [cited 2023 Aug 8]; Available from: https://www.researchgate.net/publication/345312901

28. Folayan MO, Sam-Agudu NA, Harrison A. Exploring the why: risk factors for HIV and barriers to sexual and reproductive health service access among adolescents in Nigeria. BMC Health Serv Res [Internet]. 2021 [cited 2023 Jul 8];22:1198. Available from: https://doi.org/10.1186/s12913-022-08551-9

29. Banerjee A, Ferrara E La, Orozco-Olvera VH, Bank W. The Entertaining Way to Behavioral Change: Fighting HIV with MTV. 2019;

30. Akuiyibo S, Anyanti J, Idogho O, Piot S, Amoo B, Nwankwo N, et al. Impact of peer education on sexual health knowledge among adolescents and young persons in two North Western states of Nigeria. Reprod Health. 2021 Dec 1;18(1).

31. Adebayo E, Olaniyan HO, Olumide AO, Ogunniyi A, Fawzi W. Use of mobile technology to enhance the capacity of teachers to teach family life and HIV education in Nigeria: Overview of methods for a randomized controlled trial. 2023 [cited 2023 Aug 6]; Available from: http://dx.doi.org/10.1016/j.dialog.2023.100110

32. Okah PS, Onalu CE, Aghedo GU, Iyiani CC, Abonyi SE. Factors associated with the premarital sex among adolescents and the need for introduction of functional sex-education in secondary schools in Ebonyi state, Nigeria. Cogent Soc Sci [Internet]. 2023 [cited 2023 Aug 6];9:2220234. Available from: https://www.tandfonline.com/action/journalInformation?journalCode=oass20

33. Kennedy EC, Bulu S, Harris J, Humphreys D, Malverus J, Gray NJ. "Be kind to young people so they feel at home": a qualitative study of adolescents' and service providers' perceptions of youth-friendly sexual and reproductive health services in Vanuatu. 2013 [cited 2023 Aug 9]; Available from: http://www.biomedcentral.com/1472-6963/13/455

34. Omage MI, Omage BO. International Journal of Sociology and Anthropology Assessing the extent of HIV/AIDS education and prevention among secondary school students in Oredo, Benin City, Nigeria. 2013 [cited 2023 Jul 11];5(8):311–22. Available from: http://www.academicjournals.org/IJSA

35. Ndibuagu E, Ndibuagu EO. Key HIV Misconceptions among Inhabitants of a Rural Community. Current Progress in Medicine and Medical Research. 3.

36. Newton-Levinson A, Leichliter JSB, Chandra-Mouli V. Sexually Transmitted Infection Services for Adolescents and Youth in Low- and Middle-Income Countries: Perceived and Experienced Barriers to Accessing Care. 2016 [cited 2023 Aug 9]; Available from: http://dx.doi.org/10.1016/j.jadohealth.2016.03.014

37. Aliyu TK, Aransiola JO. Parent-Adolescent Communication About Reproductive Health Issues in Nigeria. 2023 [cited 2023 Jul 11]; Available from: https://us.sagepub.com/en-us/nam/open-access-at-sage

38. Adione AA, Abamara NC, Vivalya BMN. Determinants of the utilization of youth-friendly sexual and reproductive health services in public secondary schools of Kogi State, Nigeria: an explorative study. BMC Public Health. 2023 Dec 1;23(1).

39. Wilson C, Oliver V, Flicker S, Sexual Health Network NY, Prentice T, Jackson R, et al. "Culture" as HIV prevention: Indigenous youth speak up! Gateways. 2016 Sep 7;9(1).

40. Odimegwu CO, Imo CK, Amoo EO. HIV voluntary counselling and testing and behaviour changes among youths in Nigeria. J Biosoc Sci. 2019;

41. Garofalo R, Adetunji A, Kuhns LM, Omigbodun O, Johnson AK, Kuti K, et al. Evaluation of the ICARE Nigeria pilot intervention using social media and peer navigation to promote HIV testing and linkage to care among high-risk young men a nonrandomized controlled trial. JAMA Netw Open. 2022;

42. Nmadu AG, Mohamed S, Usman NO. African Journal of Primary Health Care & Family Medicine. 2020 [cited 2023 Aug 8]; Available from: https://doi.org/10.4102/

43. Godia PM, Olenja JM, Hofman JJ, Van Den Broek N. Young people's perception of sexual and reproductive health services in Kenya. BMC Health Serv Res. 2014 Apr 15;14(1).

44. Odo AN, Samuel S, Nwagu EN, Nnamani PO, Atama CS. Sexual and reproductive health services (SRHS) for adolescents in Enugu state, Nigeria: a mixed methods approach.

45. MacPhail C. Youth-driven HIV prevention programmes in South Africa: Social capital, empowerment and conscientisation. Soc Dyn. 2015 Dec;32(2):170–96.

46. Iwelunmor J, Ezechi O, Obiezu-Umeh C, Gbaja-Biamila T, Musa AZ, Nwaozuru U, et al. Tracking adaptation strategies of an HIV prevention intervention among youth in Nigeria: a theoretically informed case study analysis of the 4 Youth by Youth Project. Implement Sci Commun. 2023 Apr 26;4(1).

47. Embleton L, Shah P, Apondi E, Ayuku D, Braitstein P. "If they had a place to live, they would be taking medication": a qualitative study identifying strategies for engaging street-connected young people in the HIV prevention-care continuum in Kenya. J Int AIDS Soc. 2023 Jun 1;26(6):e26023.

48. Amo-Adjei J, Yenyi A, Ahanotu B, Okyere J. Sexual and Reproductive Health Matters ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/zrhm21 Reaching young people living with HIV & AIDS and young people in detention with comprehensive sexuality education (CSE): a preparatory formative study in Ghana Reaching young people living with HIV & AIDS and young people in detention with comprehensive sexuality education (CSE): a preparatory formative study in Ghana. Reprod Health Matters [Internet]. 2023 [cited 2023 Aug 4];31(2). Available from: https://www.tandfonline.com/action/journalInformation?journalCode=zrhm21

49. Aizobu D, Wada YH, Anyanti J, Omoregie G, Adesina B, Malaba S, et al. Enablers and barriers to effective HIV self-testing in the private sector among sexually active youths in Nigeria: A qualitative study using journey map methodology. PLoS One. 2023 Apr 1;18(4 April).

50. Mulawa MI, Mtukushe B, Knippler ET, Matiwane M, Al-Mujtaba M, Muessig KE, et al. Supporting Adolescents With HIV in South Africa Through an Adherence-Supporting App: Mixed Methods Beta-Testing Study. [cited 2023 Aug 4]; Available from: https://formative.jmir.org/2023/1/e47575

51. Olowookere SA, Oyedeji OA, Ibigbami ; O, Arije ; O, Idowu ; A, Adekanle ; O, et al. Factors Associated with Non-Adherence to Highly Active Antiretroviral Therapy among Children Living with HIV/AIDS from Two Centres in Nigeria-A mixed methods Cross-Sectional Study.

52. Kennedy Okwor C, Ugonna Onyegbado C, Egbe A, Ezeobi O, Bassey F, Olarewaju O, et al. Overcoming the Challenges in Viral Load Sample Coverage and Suppression in HIV-Positive Pediatrics and Adolescents on Antiretroviral Therapy in Enugu, South-East Nigeria: The Lessons from Implementing Weekend Viremia Clinic Services. Int J Innov Sci Res Technol [Internet]. 2023 [cited 2023 Aug 8];8(6). Available from: www.ijisrt.com

53. Sbaffi L, Zamani E, Kalua K. Promoting Well-being Among Informal Caregivers of People With HIV/AIDS in Rural Malawi: Community-Based Participatory Research Approach. [cited 2023 Aug 8]; Available from: https://www.jmir.org/2023/1/e45440

54. Sidamo NB, Kerbo AA, Gidebo KD, Wado YD. Socio-Ecological Analysis of Barriers to Access and Utilization of Adolescent Sexual and Reproductive Health Services in Sub-Saharan Africa: A Qualitative Systematic Review. Open Access J Contracept [Internet]. 2023 Jun [cited 2023 Aug 8];Volume 14:103–18. Available from: https://doi.org/10.2147/OA

55. Envuladu EA, Massar K, de Wit J. Adolescent sexual and reproductive health care service availability and delivery in public health facilities of plateau state nigeria. Int J Environ Res Public Health. 2021 Feb 2;18(4):1–11.

56. Ajayi AI, Awopegba OE, Adeagbo OA, Ushie BA. Low coverage of HIV testing among adolescents and young adults in Nigeria: Implication for achieving the UNAIDS first 95. PLoS One. 2020 May 1;15(5).

57. Abuosi AA, Anaba EA. Barriers on access to and use of adolescent health services in Ghana. [cited 2023 Aug 6]; Available from: www.emeraldinsight.com/2586-940X.htm

58. Abubakari Sulemana W, Abu M, Yidana Z, Apraku Anane E, Mutaru Goro I, Badasu Delalali M. Young people’s experiences in accessing sexual and reproductive health services in sub-Saharan Africa from 1994 to 2019 - A content analysis. International Journal of Sexual and Reproductive Health Care. 2020 May 22;3(1):017–26.

59. Isaac Babatimehin O, Ese Nelson NT, Oyinloye RO, Olugbade Adeoye N, Taiwo OJ, Daniel Ige J. Send Orders for Reprints to reprints@benthamscience.ae Geographical Analysis of the Patterns of Healthcare Facilities and HIV/ AIDS Response Sites in Benue State, Nigeria. The Open Geography Journal. 2015;7:17–27.

60. Kareem YO, Dorgbetor CI, Ameyaw EK, Abubakar Z, Adelekan B, Goldson E, et al. Assessment and associated factors of comprehensive HIV knowledge in an at-risk population: a cross-sectional study from 19,286 young persons in Nigeria. Ther Adv Infect Dis [Internet]. 2023 Jan 1 [cited 2023 Aug 6];10. Available from: https://doi.org/10.1177/20499361231163664

61. Thongmixay Id S, Rombout Essink D, De Greeuw T, Vongxay V, Sychareun V, Broerse JEW. Perceived barriers in accessing sexual and reproductive health services for youth in Lao

People’s Democratic Republic. 2019 [cited 2023 Aug 3]; Available from: https://doi.org/10.1371/journal.pone.0218296

62. Abuosi AA, Anaba EA. Barriers on access to and use of adolescent health services in Ghana. 2017 [cited 2023 Aug 3]; Available from: www.emeraldinsight.com/2586-940X.htm

63. Kennedy EC, Bulu S, Harris J, Humphreys D, Malverus J, Gray NJ. “be kind to young people so they feel at home”: A qualitative study of adolescents’ and service providers’ perceptions of youth-friendly sexual and reproductive health services in Vanuatu. BMC Health Serv Res. 2013 Oct 31;13(1).

64. Godia PM, Olenja JM, Lavussa JA, Quinney D, Hofman JJ, Van Den Broek N. Sexual reproductive health service provision to young people in Kenya; health service providers’ experiences [Internet]. 2013. Available from: http://www.biomedcentral.com/1472-6963/13/476

65. Arije O, Hlungwani T, Madan J. “They will judge you more like a parent instead of like a health practitioner”: Perceptions and preferences of young people regarding sexual and reproductive health services in Southwest Nigeria. 2022 [cited 2023 Aug 6]; Available from: http://dx.doi.org/10.1016/j.dialog.2022.100051

66. Mutea L, Id SO, Kadiri F, Michielesen K, Gichangi P. Access to information and use of adolescent sexual reproductive health services: Qualitative exploration of barriers and facilitators in Kisumu and Kakamega, Kenya. 2020 [cited 2023 Aug 3]; Available from: https://doi.org/10.1371/journal.pone.0241985

67. Mbadu Muanda F, Gahungu NP, Wood F, Bertrand JT. Attitudes toward sexual and reproductive health among adolescents and young people in urban and rural DR Congo. Reprod Health. 2018 May 4;15(1).

68. Lusher J, Oloniniyi I, Folayan MO, Lusher J, Stevens-Murphy EJ, Undelikwo G, et al. HIV Private Care Services in Nigeria Expose Constraints on Healthcare Systems during the Pandemic Burden and Risk Factors of Community Acquired Pneumonia in Sub-saharan Africa View project Faith Leaders Action Against HIV Stigma and Discrimination in Benue State and Kaduna state View project HIV Private Care Services in Nigeria Expose Constraints on Healthcare Systems during the Pandemic. International Journal of Scientific Research in Science and Technology (www.ijsrst.com) | [Internet]. 2023 [cited 2023 Aug 4];10(1):308–20. Available from: www.ijsrst.com

69. Kurth AE, Lally MA, Choko AT, Inwani IW, Fortenberry JD. HIV testing and linkage to services for youth. J Int AIDS Soc. 2015;18(2):23–8.

70. Aninanya GA, Debpuur CY, Awine T, Williams JE, Hodgson A, Howard N. Effects of an Adolescent Sexual and Reproductive Health Intervention on Health Service Usage by Young People in Northern Ghana: A Community-Randomised Trial. 2015 [cited 2023 Jul 29]; Available from: https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0125267&type=printable

71. Snyder K, Wallace M, Duby Z, Aquino LDH, Stafford S, Hosek S, et al. Preliminary results from Hlanganani (Coming Together): A structured support group for HIV-infected adolescents piloted in Cape Town, South Africa. Child Youth Serv Rev. 2014;45(C):114–21.

72. Willis N, Milanzi A, Mawodzeke M, Dziwa C, Armstrong A, Yekeye I, et al. Effectiveness of community adolescent treatment supporters (CATS) interventions in improving linkage and retention in care, adherence to ART and psychosocial well-being: A randomised trial among adolescents living with HIV in rural Zimbabwe. BMC Public Health. 2019 Jan 28;19(1).

73. Ky-Zerbo O, Desclaux A, Boye S, Maheu-Giroux M, Rouveau N, Vautier A, et al. “I take it and give it to my partners who will give it to their partners”: Secondary distribution of HIV self-tests by key populations in Côte d’Ivoire, Mali, and Senegal. BMC Infect Dis. 2022 Jan 1;22.

74. Adanlawo EF, Nkomo YN. Multicultural Education Entrepreneurship Skills Acquisition Programs: A Tool for Economic Development. [cited 2023 Aug 8]; Available from: https://www.researchgate.net/publication/372211784

75. Mayombe C. Promoting youths’ skills acquisition through experiential learning theory in vocational education and training in South Africa. [cited 2023 Aug 8]; Available from: http://creativecommons.org/licences/by/4.0/legalcodehttps://www.emerald.com/insight/2042-3896.htm

76. Maraire FP,& MC. View of Zimbabwe’s Youth Empowerment Programme and Poverty Alleviation amongst Youths in Gweru Urban District [Internet]. 2020 [cited 2023 Aug 8]. Available from: https://e-journal.uum.edu.my/index.php/jgd/article/view/14911/3308

77. View of Facilitating Non-School-Based Technical and Vocational Training for Disadvantaged Youths in South Africa [Internet]. [cited 2023 Aug 8]. Available from: https://penerbit.uthm.edu.my/ojs/index.php/JTET/article/view/11311/5643

78. Demedeme G, Opoku CB. Journal of Agricultural Extension and Rural Development Economic empowerment of rural women: Assessing the effectiveness of the rural enterprise program (REP) in Ghana, West Africa. [cited 2023 Aug 8];14(1):13–23. Available from: http://www.academicjournals.org/JAERD

79. Ghanotakis E, Hoke T, Wilcher R, Field S, Mercer S, Bobrow EA, et al. Evaluation of a male engagement intervention to transform gender norms and improve family planning and HIV service uptake in Kabale, Uganda. Glob Public Health. 2017 Oct 3;12(10):1297–314.

80. The Federal Republic of Nigeria Nigeria Demographic and Health Survey 2018 National Population Commission Abuja, Nigeria. 2019 [cited 2023 May 5]; Available from: www.DHSprogram.com.