THE UNIVERSITY OF HULL

# The Determinants of Adolescents' Access and Utilisation of Sexual and Reproductive Health Services in Nigeria: A Mixed Methods Study

A Thesis Submitted to the University of Hull in Fulfilment of the Award of Degree of

Doctor of Philosophy in Social Policy

By

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## Abstract

This thesis using sequential mixed-methods design underpinned by the Social Ecological Model (SEM), examines the determinants of adolescents' access and utilisation of Sexual and Reproductive Health (SRH) Services in Nigeria. The quantitative strand of the study applied multilevel modelling to pooled data from the 2003-2013 Nigeria Demographic and Health Surveys (NDHS) comprising 18,255 unmarried adolescents aged 15-19 years, whereas the qualitative strand (8 FGDs and 16 in-depth interviews) informed by Foucault's Theory of sexuality were analysed following an inductive thematic approach guided by Gioia's analytical framework.

Overall, the results showed that although most of the variations in SRH (contraceptive use and comprehensive knowledge of HIV) service use occur at the micro level, there were significant macro level effects on adolescent's access to and use of services. The key predictors of SRH service use among adolescents were gender, age, ethnicity, education, employment, ever been tested for HIV, age of household head, educational years in state and region of residence. The qualitative findings supported and contextualised these results by revealing the individual level (limited knowledge of available services, fear of embarrassment), community level (Socio-cultural norms and values) facility level (service providers attitude, lack of confidentiality/privacy) and state level (lack of government commitment/funding) barriers to adolescents use of SRH services.

This study aid the understanding of the application of SEM in advancing the field of adolescent SRH and re-contextualised Foucault's theory of sexuality from a non-western perspective. It contributes significantly to key policy and global debates on the importance mainstreaming youth-friendly health services into the national health programmes. The findings highlight the urgent need for a multisectoral and multilevel approaches to meeting the changing needs, and addressing the contextual factors that influence adolescents' use of services. Making the Primary Healthcare Centres youth friendly through service provider's reorientation, ensuring confidential service delivery, and accelerating the nationwide implementation of quality school-based SRH education is a sure path to improving adolescent poor health outcomes in Nigeria.

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## Dedication

This thesis is dedicated to my beloved wife Rita C. Onukwugha and Children (Osinachi G. Onukwugha and Chidimma D. Onukwugha) for their unwavering support and sacrifices through thick and thin of my PhD journey.

## Acknowledgement

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## List of Acronyms

| | |
|---|---|
| AIDS | Acquired Immune Deficiency Syndrome |
| ASRH | Adolescents Sexual and Reproductive Health |
| ASRHR | Adolescents Sexual and Reproductive Health Rights |
| CKH | Comprehensive Knowledge of HIV |
| CPR | Contraceptive Prevalence Rate |
| DHS | Demographic and Health Survey |
| EA | Enumeration Area |
| FGD | Focus Group Discussion |
| FMoE | Federal Ministry of Education |
| FMoH | Federal Ministry of Health |
| FP | Family Planning |
| HIV | Human Immunodeficiency Virus |
| ICC | Intra-class Correlation Coefficient |
| IDI | In-depth Interview |
| LMIC | Low and middle-income countries |
| MDG | Millennium Development Goals |
| NACA | National Statistics Agency for the Control of AIDS |
| NDHS | Nigeria Demographic and Health Survey |
| NPHCD | National Primary Healthcare Development Agency |
| PCA | Principal Component Analysis |
| PCV | Proportional Change in Variance |
| PHC | Primary Health Care |
| PSU | Primary Sampling Unit |
| RH | Reproductive Health |
| SDG | Sustainable Development Goal |

| | |
|---|---|
| SE | Standard Error |
| SEM | Social Ecological Model |
| SH | Sexual Health |
| SPSS | Statistical Package for Social Sciences Software |
| SRHR | Sexual and Reproductive Health and Rights |
| SSA | Sub-Saharan Africa |
| STI | Sexually Transmitted Infection |
| STI | Sexual transmitted infections |
| UNAIDS | the Joint United Nations Programme on HIV/AIDS |
| UNFPA | United Nations Population Fund |
| UNICEF | United Nations Children's Fund |
| UNESCO | United Nations Educational and Cultural Organisation |
| VPC | Variance Partition Coefficient |
| WHO | World Health Organisation |
| WHS | Wards Health System |
| YF | Youth Friendly |

# Chapter 1: Introduction and background to study

## 1.1 Introduction

This thesis examines the determinants of unmarried adolescents' access and utilisation of Sexual and Reproductive Health (SRH) Services in Nigeria using a mixed methods approach. It hypothesises that the factors that influence unmarried adolescents' access to and use of SRH services in Nigeria extend beyond the individual level factors to interconnected contextual factors that bottleneck adolescents' access and use of SRH services. This chapter provides background information to the study with specific focus on the Adolescents Sexual and Reproductive Health (ASRH) overview, the motivation for the study, the problem statement, and the rationale for the study. It goes further to explore the adolescents SRH policy development in Nigeria, research aim and objectives and it concludes with an outline of the thesis structure and what each chapter covers

## 1.2 Research Background (Overview of adolescents' SRH)

Adolescence is defined as a period (aged 10-19) when young people transition from childhood to adulthood (UNFPA, 2014). This is a unique period of risk, challenges and opportunities as they go through rapid biological, psychological and social developmental changes (Ozdemir et al., 2016; WHO, 2019). Evidence has shown that this group of people are often unprepared for these changes (UNESCO, 2018). Globally, a significant number of adolescents do not have access to accurate comprehensive SRH information and services that prepare them as they transition from adolescence to adulthood despite the global progress in widening access and use of SRH services (Santhya and Jejeebhoy, 2015).

In 1994, the notion of Reproductive Health (RH) received prominence at the 4$^{th}$ International Conference on Population and Development (ICPD) in Cairo involving 179 government representatives. The conference led to a universal recognition that Reproductive Health (RH) defined "as the state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and its functions and processes" (UNFPA, 1995) should be prioritised and universally available. In this thesis, Sexual and Reproductive health (SRH) is defined "as a state of complete physical, mental and social

well-being in all matters relating to the reproductive system". It infers that people are able to have a satisfying and safe sex life, the capability to reproduce, and the freedom to decide if, when, and how often to do so (WHO, 2017; UNFPA, 2014).

The ICPD provided a foundation for the development of the Millennium Development Goals (MDGs), which set out to achieve eight specific goals and 21 targets. An assessment of the progress towards the MDGs in 2015 shows that significant achievement was made on many MDG targets worldwide (United Nations, 2015). For example, globally, contraceptive use among married women aged 15 to 49, increased from 55 per cent in 1990 to 64 per cent in 2015. However, this progress differed across countries (United Nations, 2015) and less successful in the area of Sexual and Reproductive Health and Right (SRHR) (Galati, 2015). This undoubtedly may partly be attributable to the fact that the SRHR was neglected and not originally at the core of the MDGs. Sub-Saharan Africa (SSA) (Ogunrotifa, 2012) and Nigeria (Durokifa and Abdul-Wasi, 2016) made slow progress in achieving MDG targets as gender gaps, inequalities and lack of access to basic services including SRH still persist (United Nations, 2015). Many adolescents and young people are yet to be reached with the services meant for them (Chandra-Mouli *et al,.* 2015).

In a bid address these gaps and combat the unfinished agenda in 2015, the world leaders adopted the Sustainable Development Goals (SDGs). The experiences and lesson learnt from the MDGS was used as a springboard for the SDGs. The SDGs sets out to achieve 17 goals and 169 targets. One of the targets amidst others is to ensure universal access to SRH-care services, including family planning by 2030. In order to achieve this feat by 2030, a number of global health initiatives (Family Planning 2020, the UN's Global Strategy for Women's, Children and Adolescents' Health and the Global Accelerated Action for the Health of Adolescents-AA-HA etc.) have advocated the need for meeting adolescents' SRH needs (e.g. modern contraception), especially in low income countries (EWEC, 2015). Family Planning 2020 (FP2020) is a partnership programme focused in 69 countries that supports women and girls to decide the number of childbirths that they want to have and encourages family planning progress at the national level. Whereas, the UN's Global Strategy for Women's, Children's and Adolescents' Health (2016-2030) was launched in 2015 to support the SDGs with specific focus to improve and respond to adolescent health needs (EWEC, 2015; WHO, 2017). The accelerated action for the health of adolescents (AA-HA!) developed by UN partners and led by the WHO to support country implementation of SDGs and serves as reference

document for national-level policy-makers and programme managers to assist them in implementing and evaluating adolescent health programmes. This was deemed necessary due to the recognition that these global strategies would help to address the unmet needs of young adolescent women; help reduce unwanted pregnancy by 6 million, avert 2.1 million of unplanned births, 3.2 million abortions and 5,600 maternal deaths globally (Darroch et al., 2016). Mitigating the bleak health outcomes that bedevil adolescents would require a clear understanding of the challenges they face in accessing SRH services (Radovich et al., 2018; Woog et al., 2015).

## 1.3 Motivations for selecting this research topic

Previous scholars have noted the need for researchers to become conscious of their motives and interests within a research study (Cunliffe, 2011; Haynes, 2012; James and Vinnicombe, 2012). My past experience shaped my motivation for examining the determinants of adolescents' access and use of SRH services in Nigeria (Willig, 2001). In February 2011, I was involved in a data collection among nurses in Rivers State, Nigeria. During one of my visits to interview nurses in one the hospitals in the State, I came across a long queue of people who came for CD4 count test (The CD4 count test checks how well the immune system is functioning for those who are HIV+). I was shocked not because of the long queue but because majority of them were young people (20 years and under). The major problem according to the nurses was that a significant number of them do not know their HIV status and present themselves very late when the virus has developed to full blown AIDS.

My interaction with some of the patients and the responses they gave were mind-blowing and astonishing as some at the age of 13 years did not know how they contracted the virus, and some of the married ones did not want to disclose their HIV/AIDS status to their partners as they were afraid their partner would leave them if they inform them. This experience motivated me to start thinking about the reasons why a large number of these young people were HIV positive in the first place, and the reasons why they were not engaging in early HIV testing and counselling despite an increase in testing sites from 1074 in 2009 to 7075 in 2013 in Nigeria. This led to the formulation of my initial PhD topic that focused on the "barriers and facilitators to early HIV testing, treatment and management in Rivers State, Nigeria".

However, after engaging with the literature and reviewing policy documents in Nigeria, the theoretical knowledge I gained shifted my outlook. I began to think about the problem that surrounds young people's SRH in Nigeria more holistically as I believe at this point that the focus on HIV/AIDS would not give a comprehensive picture of the SRH challenges young people face and would not meet their general SRH needs. The shift in my viewpoint led to the curreen topic (Determinants of access to and use of sexual and reproductive health services among unmarried adolescents in Nigeria). This is because looking at the SRH challenges among adolescents would help to uncover neglected issues surrounding young people's use of SRH services and would further address the problems of late HIV counselling and testing among adolescents in Nigeria.

## 1.4 Context of adolescents sexual and reproductive health and policy in Nigeria

The challenges of adolescents in Nigeria are not different from other countries in Sub-Saharan African (SSA). Some of these challenges include early marriage, unsafe abortion, Sexual Transmission Infections (STIs), HIV/AIDS, high unmet need for family planning (WHO, 2014). Despite these challenges, adolescent's health is not given the required attention in Nigeria. Although, several policies exist that outline various action plans to address adolescent's health issues but these policies have not translated into equitable actions. Nigeria is fairly a conservative country, where topics on sex, abortion and even contraceptive are regarded as a taboo between parents, teachers and children. Premarital sex among adolescents and young people is abhorred. The public opinion polls have consistently shown that premarital sex is wrong and dangerous to health (Alo and Akinde, 2009). The societal views are shaped by cultural, religious and moral values embedded in the society (Aduayi et al., 2016). Most adolescents learn about sexual health in a negative way and do not have access to any form of SRH services except few who learn through mass media messages and unreliable information from peers as comprehensive sexuality education is a highly contested area. Sexuality education is often perceived as incompatible with prevailing traditional societal values and norms, as a result, has limited great initiatives to scale up adolescent access to SRH information and services.

Notwithstanding these restrictions, adolescents are initiating sexual activities at an early age. E.g. about 8.6% of adolescents aged 15-19 in Nigeria have had sexual intercourse by age 15. The median age at first sexual intercourse among women age 20-49 in Nigeria is 17.3 years, while 21.7 years for men. Nineteen percent of women initiate sexual intercourse by age 15 and 57% by age

18. The percentage of women who have had sexual intercourse by age 18 increased from 54% in 2013 to 57% in 2018 (NDHS, 2018). Also, child/early marriage is a common phenomenon and controversial issues in Nigeria. Among adolescents aged 15-19, 8.3% were already married by age 15. Women in the North West marry at a much earlier age (15.8 years) than women in the South East (23.6 years) (NDHS, 2018). In North-West Nigeria, 54% of girls aged 15-24 were married by age 15, and 81% by age 18 with 16% having given birth by age 15 and 36% by age 19 (Alabi et al, 2014). Early marriage contributes to the Total Fertility Rate (TFR) in the region (6.6 children per woman in North West and 3.9 children per woman in South West). There are high family and societal pressure for young girls to get married early especially in the northern region due to perceived moral/ cultural values, religious beliefs and socio-economic benefits. In some cases, most girls are given out in marriage without their consent or before being informed. Culturally, parents are willing to marrying off their daughters at a very young age to ensure they marry as virgin, protect them from premarital sex and teenage pregnancies which if occurs will bring shame to the family (Aduayi et al., 2016). Amidst restriction of full range of family planning services to adolescents, induced abortion is illegal in Nigeria and attracts 14 years jail sentence. Many adolescents who get pregnant due to high unmet need for family planning cannot abort it and if they do, they will be jailed.

Furthermore, the first National Adolescents Health Policy (NAHP) in Nigeria was developed in 1995. Since then, some policies have been developed to meet the changing landscape and current realities in adolescents' health and developmental challenges. Some of these policies are contained within the National Strategic Framework on the Health and Development of Adolescents and Young People in Nigeria (2007), and the Action Plan for Advancing Young People's Health and Development in Nigeria (2010) etc. Unfortunately, these policies do not explicitly meet the needs of adolescents at the PHC level (FMoH, 2013). The Youth Family Planning Policy scorecard developed by the Population Reference Bureau (PRB) in 2018, in which 14 policy documents were reviewed in Nigeria, found that laws and policies still exist that restrict youth from accessing a full range of family planning services based on age and marital status. For example, the review showed that the National Training Manual for the Health and Development of Adolescents and Young people in Nigeria (2011), discourages service providers from recommending non-permanent options that have been certified safe for general use for adolescents (Population Reference Bureau, 2018).

This shows that the current SRH policies in Nigeria do not conform to the human right principles, which mandates member states to provide non-discriminatory contraceptive information and services to adolescents, and to adopt a policy measure to ensure their access to affordable, safe and effective contraceptives (WHO, 2018). These inconsistencies of policies with human right obligation can present barriers to achieving global development goals and the highest attainable standard of SRH (Cottingham et al., 2010). Systematic integration of SRH policies and programmes in a human rights framework in Nigeria will improve adolescent's access to information and services (WHO, 2018). Therefore, there is need for actions to be taken beyond the health sector to change social norms, laws, and policies and uphold Sexual and Reproductive Health and Rights (SRHR) of adolescents.

## 1.5 Why unmarried adolescents?

While adolescents are seen as a unique and homogenous group and face similar challenges in Nigeria, the unmarried adolescent's SRH needs are different from their married counterparts. The level of acceptance in the community and level of support and experiences from healthcare providers differ. For example, evidence from Tanzania shows that unmarried adolescents' sources of contraceptives, reasons for not using contraceptives and kinds of contraceptives used are different from their married counterparts (Chandra-Mauli and Parameshwar, 2017). Even when services are available, unmarried adolescents may face enormous challenges in accessing them compared to their married counterparts due to prevailing social norms, cultural values and providers attitudes (FIGO, 2011; Godia et al., 2013).

Despite the human right obligation to ensure contraceptive information and services should be free, confidential, adolescent-responsive and non-discriminatory (WHO, 2018), unmarried adolescents are more likely to experience judgemental and negative attitudes in health facilities than the married adolescents due to the deeply entrenched belief of providers that exposing unmarried adolescents to SRH services like contraceptives will encourage premarital sex and sexual promiscuity; limiting the level of support and youth-friendly services they receive (Morris, 2015 and Rushwan 2015). Married adolescents despite their age are to a varying degree treated the same as adults in healthcare facilities as early marriage is not widely regarded as a problem rather

in some communities, it is encouraged as a strategy to averting sexual immorality among girls. This is further worsened by the fact that globally, adolescents are now reaching puberty earlier and marrying later (Bearinger et al. 2007; Blanc et al. 2009). Many adolescents in Nigeria are becoming sexually active at an earlier age leading to early initiation of sexual activity when their knowledge of STI prevention is still low (Chandra-Mouli, 2015) and their cognitive skills required to analyse risks are not fully developed (Gruber and Grube, 2000).

These challenges, without doubt, has forced many adolescents to clandestinely seek unskilled providers which are mostly unsafe; leading to maternal morbidity and mortality (WHO, 2011). These further limits the opportunity to harness the demographic dividend from this sub-group of the population in Nigeria and underpins the need to focus on unmarried adolescents because meeting their SRH needs would drastically reduce the overall global burden of diseases and contributes significantly in achieving the SDGs by 2030 (UNESCO, 2018).

## 1.6 Problem statement

About 1.2 billion adolescents aged 10-19 years make up 16 per cent of the world's population (UNICEF, 2016). In 2017, there were on average 36.9 million people living with HIV globally with adolescents aged 10-19 accounting for 1.8 million (UNAIDS, 2018). Out of the 1.8 million adolescents living with HIV, 85% (1.5 million) live in Sub-Saharan Africa (UNAIDS, 2018). Adolescents aged 15-19 years account for 16% of new HIV infections globally (UNAIDS, 2018). Also, adolescent girls consist of two-thirds of all new HIV infections among this group (UNAIDS, 2018). Despite the burden of HIV among adolescents aged 15-19 years, only one out of three young people aged 15-24 have a comprehensive knowledge of HIV (UNAIDS, 2017).

Twenty-three million girls aged 15-19 have an unmet need for modern contraceptives. These young girls want to avert pregnancy but are not using any contraceptive method, and are therefore at risk of unintended pregnancy (Singh et al., 2014). This proportion of adolescent girls with unmet needs is lower in Latin America and the Caribbean (36%) compared to Africa (68%) and Asia (69%) (Darroch et al., 2016). Among an estimated 22 million unsafe abortions that occur globally every year, 15% occur among young girls aged 15-19 (WHO, 2011). In 2012, across the globe, 1 out of 20 adolescent girls aged 15-19 had a live birth (UNFPA, 2016). If the current trend remains unchecked,

about 19.2 million adolescent girls will give birth annually by 2035; an increase of 15.3% from 2015 (UNFPA, 2016).

In Sub-Saharan Africa (SSA), the number of young people (15–24) with Comprehensive Knowledge of HIV (CKH) and accurate understanding of HIV increased by 5% for men and by 3% for women from 2002 to 2011, however, knowledge levels continues to be low (36% for young men and 28% for young women) (GARP report, 2013). In third world countries, 2 out of 5 unsafe abortions occur among women under 25 years of age, and about 1 out of 7 women who have unsafe abortions are under the age of 20 (UNDP, 2015). Table 1.1 shows that despite lower number of adolescents aged 15-19 in SSA compared to Asia, adolescents in Sub-Saharan African bear the brunt of the SRH indicators including adolescents' birth rate (ABR). Sub-Saharan Africa continues to make the least progress in reducing the ABR. The ABR (births per 1,000, among women aged 15-19) was highest in Africa (98 per 1,000 women), followed by Latin America and the Caribbean (67 per 1000 women) from 2010 to 2015. Fourteen per cent of all unsafe abortions in low and middle-income countries (LMICs) are among women aged 15–19 years. About 2.5 million adolescents have unsafe abortions every year, and adolescents are more severely affected by pregnancy complications than older women (WHO, 2015).

Table 1.1: Selected SRH indicators for adolescents aged 15-19 in developing region in 2016

| Indicators | Africa | Asia | Latin America and the Caribbean | All |
|---|---|---|---|---|
| No. of women aged 15–19 (in 000s) | 61,600 | 163,300 | 27,500 | 252,300 |
| % ever had sex, age 16 | 27 | 11 | 28 | 17 |
| % married, age 16 | 14 | 8 | 13 | 10 |
| % ever had sex, age 19 | 66 | 41 | 67 | 50 |
| % married, age 19 | 43 | 33 | 37 | 36 |
| No. of pregnancies and outcomes among women aged 15–19 (in 000s) | | | | |
| Pregnancies | 8,900 | 8300 | 3600 | 20,700 |
| Births | 5700 | 4700 | 1700 | 12100 |
| Abortions | 1900 | 2400 | 1400 | 5600 |
| Miscarriages | 1300 | 1200 | 500 | 3000 |
| Percentage distribution of pregnancies, by intention status and outcome | | | | |
| Intended | 55 | 57 | 26 | 51 |
| Births | 46 | 48 | 22 | 42 |
| Miscarriages | 9 | 10 | 4 | 9 |
| Unintended | 45 | 43 | 74 | 49 |
| Births | 18 | 9 | 27 | 16 |
| Abortions | 21 | 28 | 38 | 27 |
| Miscarriages | 6 | 5 | 9 | 6 |

Source: Darroch et al., 2016: Guttmacher Institute.

Concerning unmet needs for family planning, 3.8 million adolescent women aged 15–19 have an unmet need for modern contraception in Sub-Saharan Africa (UNFPA, 2015). These adverse outcomes are linked to an adolescent's inadequate knowledge of HIV/AIDS, poor contraception use, poor access to sexual and reproductive health information and services (Morris and Rushwan, 2015).

In Nigeria, there are 57 million adolescents aged 10-24 (UNFPA, 2014). The prevalence of HIV among adolescents aged 15–19 is estimated to be 2.9% and higher (3.2%) among young people aged 20–24 (NACA, 2016). The Nigerian Demographic and Health Survey (NDHS) (2013) indicated that among young women in Nigeria, the level of comprehensive knowledge of HIV (CKH) is still low in the face of a high national HIV prevalence of 3.4% (NACA, 2016). Only 12.7% of 15–19-year-olds and 24.5% of 20–24-year-olds have ever been tested for HIV (UNAIDS, 2014).

About, 40% of new HIV infection occurs among young people in Nigeria (UNICEF, 2017). The number of married adolescents in North West and North East Nigeria makes up about 42% of the total number of married adolescents aged 15-19 in the whole of the country, contributing an estimated 71% of the annual births among 15-19 age group in Nigeria (NDHS, 2013).

Overall, 23 percent of women aged 15-19 have begun childbearing (NDHS, 2013). A larger proportion of teenagers in rural areas than in urban areas have begun childbearing (32 percent versus 10 percent respectively). Seventeen percent (17%) of young women and 3% of young men aged 15-24 initiated sexual activity before the age of 15, and 52 percent of young women and 19 percent of young men aged 18-24 had had their first sexual intercourse before the age of 18 (NPC and ICF, 2014). Nigeria is among the top three countries globally with the highest fertility rate among adolescents with 109 births per 1000 girls aged 15-19 (United Nations Population Division; World Population Prospectus, 2016). These SRH outcomes explained above further affirm the need for the current study.

## 1.7 Why Nigeria? Background Country profile

In 2017, the population of Nigeria was placed at about 190.9 million; this is anticipated to rise to 219.7 million by 2050 (Population Reference Bureau, 2017). The majority of the population is below the age of 25 years, with 22 per cent of the population between the ages of 10 and 19 years of age (Cortez et al., 2015).

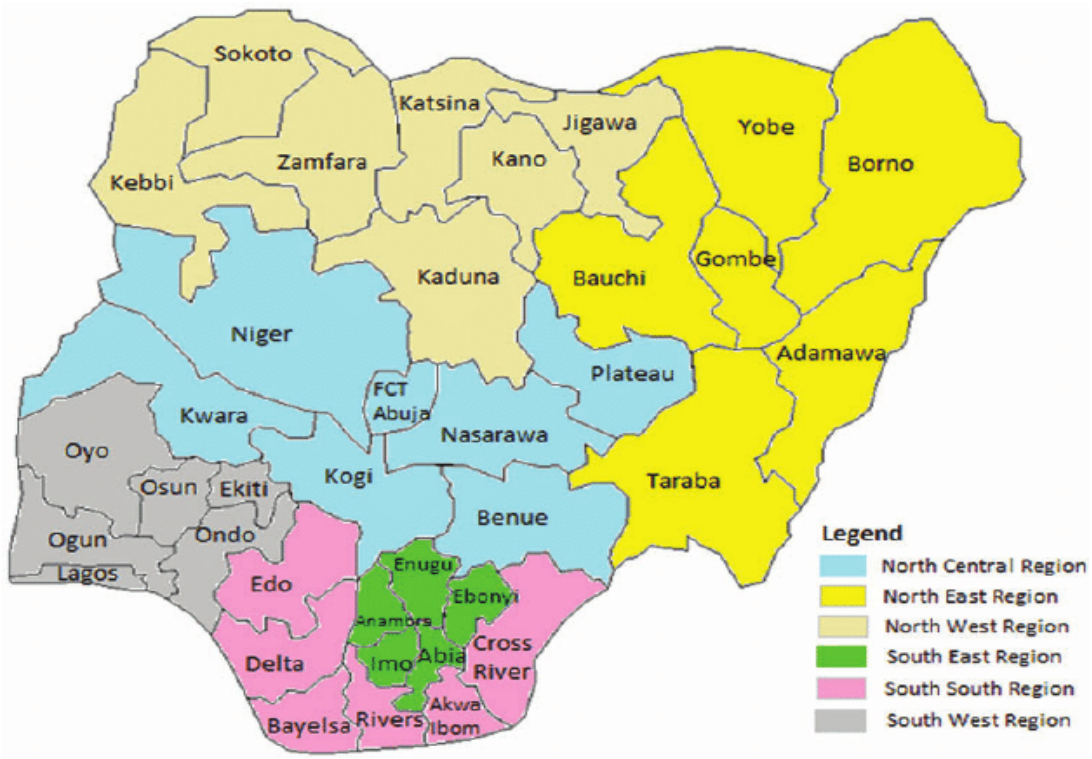



Figure 1.1: Map of Nigeria showing the 36 states and the 6 geopolitical zones.

Nigeria is made up of 36 states and a Federal Capital Territory (FCT). These states are classified under six geopolitical zones (North Central, North East, North West, South East, South-South, and South West) (National Population Commission and ICF International, 2014). Nigeria is a diverse nation with more than 250 ethnic groups and with 520 languages spoken. Agriculture was the primary source of revenue before crude oil was discovered in 1953. The Nigerian gross domestic product (GDP) as of 2013 stood at $US262.6billion (World Bank, 2013). Table 1.2 shows the maternity and life expectancy and other population indicators in Nigeria.

**Table 1.2: Nigeria Demographic and Health Data**

| | |
|---|---|
| Total population | 186.0 million |
| Maternal mortality | 814 per 100,000 live birth |
| Life expectancy at birth | 54 years |
| Total fertility rate (TFR) | 5.4 |
| Number of Births (thousand)2015-2020 | 36,906 |

| | |
|---|---|
| Total health expenditure | 3.70% |
| Health expenditure per capita | 118 US$ |
| The human development index value | 0.53 |

Source: (UNAIDS and WHO, 2017)

The Nigerian National Health System (NHS) operates under three-tiers; the Federal, State and the Local Government levels. The NHS is funded through multiple sources, such as the National Health Insurance Scheme (NHIS), out-of-pocket (self-financing) and taxation. All three tiers are responsible for delivering healthcare services to Nigerians. At the Federal level, the Federal Ministry of Health (FMoH) is saddled with the responsibility for providing technical support and policy directives on all health service provision in Nigeria. The State Ministry of Health (SMoH) oversees secondary hospitals and provides technical support and regulation for Primary Health Care (PHC) services (FMoH, 2013). Primary Health Care (PHC) at the local government level is responsible for organising health services through the Wards Health System (WHS) and managed by the National Primary Healthcare Development Agency (NPHCDA).

The PHC serves as the first point of care for Nigerians and provides a range of services, such as reproductive health services, including family planning and maternal and child healthcare services (NPHCDA, 2012). The WHS was introduced in the year 2000 to facilitate equitable access to health services. In addition to the 228 maternal health services and ten health training institutions built by the Millennium Development Goals (MDG) office, the NPHCDA had at the beginning of 2012 established 1,156 PHC facilities across the country (NPHCDA, 2012). The close proximity of the 1,156 PHC centres to the people facilitated the Federal Government action plan in 2013 to integrate adolescents and youth-friendly health services (AYFHS) into the Primary Health Care System as one of the ways to improve young people's use of SRH services (FMoH, 2013). Out of the 34,000 public health facilities in Nigeria in 2017, 11,076 are offering modern family planning services. As of June 2017, the total number of private and public facilities providing family planning (FP) services were is 24,053 in Nigeria (FMoH, 2017).

In 2011, the Federal Government of Nigeria via the Ministry of Health committed to providing family planning services to all women in the country free of charge by increasing its domestic budget for FP (FMoH, 2011). This was in a way to achieve its target of 36% CPR by 2018. The

government agreed to invest US$3 million annually to family planning and US$8.35 million annually for the reproductive health commodities and services (Health Policy Plus and USAID, 2017). However, this commitment was not fulfilled as the Nigeria government continues to depend on donors to fund the supply of family planning commodities. For example, in 2016, while Nigeria contributed only US$2.37 million to FP commodities, international donors (DFID, UNFPA and USAID) added US$15.3 million to meet the annual budget (Health Policy Plus and USAID, 2017). The FP service providers in public health facilities acknowledged that family planning is now free in Nigeria but admitted that the supply of the commodities is low unlike when it is used to be paid for through out-of-pocket. They noted that both the public and private FP providers still charge money to deliver the service as well as other FP commodities depending on the type of family planning that the client is seeking.

## 1.8 Research Rationale

Despite the Sexual and Reproductive Health (SRH) challenges and outcomes among adolescents and young people in Nigeria reported in section 1.5 and 1.6, the use of SRH services remains disappointingly low. An assessment report of the national response to young people's SRH in Nigeria conducted in 2009 showed that only 4% went for an HIV screening test while only 5% purchased contraceptives (FMoH, 2009). Evidence from the latest Nigeria Demographic and Health Survey (NDHS) shows that the use of SRH services among adolescents has not improved as only 11% of young women and 12% of young men went for HIV testing in the past 12 months before the survey while only 5% used modern method of contraceptive in their last sexual intercourse (NDHS, 2013). Also, only 32.2% of both married and unmarried adolescents aged 15-19 were reported to have comprehensive knowledge of HIV.

Also, pockets of evidence from Low- and-Middle Income Countries (LMICs) indicate that many countries like Nigeria are yet to make significant progress in enabling adolescents' access to and use of SRH services (Santhya and Jejeebhoy, 2015). An adolescent's lack of access and use of SRH services stems from a range of interrelated factors at the individual, family, institutional and societal levels (Darroch et al., 2016; Braeken *et al*. 2007; Shaw, 2009; Braeken and Rondinelli, 2012). These interconnected factors continue to impede the effort to address the SRH needs of adolescents across the globe especially in developing regions like Nigeria (Darroch et al., 2016).

For example, findings from NDHS survey (2013) show that 17% of young women reported that health workers' attitude is the reason for their none access to health care services (NDHS, 2013).

Adolescent's lack of access to access to SRH information and services due to services providers attitudes, without doubt, has exacerbated the rate of unwanted pregnancy, unsafe abortion, HIV/AIDS burden and other sexual health challenges among adolescents (WHO and UNAIDS, 2017), and if left unaddressed could potentially increase the global burden of disease (WHO, 2017). In addition to the wider determinants, Ahanonu (2014) in quantitative study in Nigeria recommended the need to explore service providers' attitudes towards adolescents access and use of SRH service. This underscores the need current study to examine the determinants of unmarried adolescents' access and use of SRH services and exploring the views of adolescents and service providers on matters of access and use of SRH services in Nigeria.

## 1.9 Research aim and objectives:

To examine the determinants of unmarried adolescents' access to and use of sexual and reproductive health (SRH) information and services in Nigeria.

Specific objectives are to:

i. Examine the trends in sexual and reproductive service use among adolescents in Nigeria.
ii. Explore the determinants of sexual and reproductive health services among adolescents in Nigeria

iii. Investigate the views of service providers on adolescents´ use of SRH services in Nigeria.

**iv.** To explore the perception of adolescents on their use of SRH health services.

## 1.10 Thesis structure:

This thesis consists of nine chapters:

Chapter One - Introduction to the study: This chapter provides a background overview of the ASRH looking at the global, Sub-Saharan African and Nigerian context. It explains the motivation for this

research and provides justification for focusing on unmarried adolescents aged 10-19. It concludes with an outline of the key aim and objectives of the study.

Chapter Two - Literature Review: This chapter consists of two sections. Section A examines relevant empirical research on adolescents´ and provider's views and perception of access and use of SRH services. This section, based on a systematic review, provides a detailed account of the study selection process, eligibility criteria used, the keywords applied during the search process, the data collection and appraisal tools used to critique study quality. It presents an explanation of the findings identified in the primary studies and the limitations of the review as well as areas for further research. Section B takes a narrative approach to review and critique the literature on the determinants of Comprehensive Knowledge of HIV (CKH and Contraceptive use (family planning) among adolescents.

Chapter Three-Methodology: This chapter provides a detailed account of the methodological procedures and establishes the ontological and epistemological position of the study. It describes the design used and explains the instruments for data collection. It provides a concise explanation of recruitment processes and sample size. In addition, the analysis methods and software used are explained for both designs. The ethical procedures, participants´ information sheet and consent form are discussed. It concludes with an illustration of the process for ensuring rigour for both the quantitative and qualitative study.

Chapter Four- Comprehensive Knowledge of HIV/AIDS (CKH): This chapter provides quantitative findings of the determinants of Comprehensive Knowledge of HIV/AIDS (CKH) among unmarried adolescents in Nigeria, based on secondary analysis of the Nigerian Demographic Health Survey (NDHS). It starts with a brief rationale for the research and background information for the study. It provides detailed statistical analysis that was used to model the predictors of CKH and the variables included in the analysis. The chapter presents the univariate, bivariate and multivariate results of the determinants of CKH. These results are discussed in line with the existing literature along with a conclusion.

Chapter Five - Contraceptive use among unmarried adolescents in Nigeria: This second quantitative chapter presents an analysis of results from the NDHS on contraceptive use among unmarried adolescents in Nigeria. The chapter focuses on unmarried adolescents aged 15-19. It

starts with a background overview to establish the context and the rationale for the study, followed by the statistical analysis used to examine the determinants of contraceptive use and the variables included in the analysis. It further presents the results of the univariate, bivariate and multivariate analysis on the determinants of contraceptive use among adolescents in Nigeria. These results are discussed, followed by a conclusion.

Chapter Six - Views of SRH service providers: This chapter explores the views and perceptions of service providers on adolescent use of SRH services in Nigeria. An inductive thematic analysis technique was used to develop the overarching themes that best reflect the data. The findings are presented in four themes: (a) Sexual health concerns and needs of adolescents from the service providers' point of view; (b) Service providers´ perceptions of the services they provide to young people; (c) Service providers´ attitudes to adolescent use of SRH services; and (d) Sources of SRH information and services. This chapter starts with a short background and a literature review. This is followed by the methods, findings and the conclusion reached.

Chapter Seven - Views and perceptions of adolescents on SRH service access and use: This chapter examines the views and perceptions of adolescents on SRH service access and use in Nigeria based on qualitative research. The results are presented under three themes: Adolescents SRH concerns and perceptions of service delivery, views of adolescents on the SRH services and adolescents' sources of SRH information and services. The chapter begins with a brief background to establish the rationale for the study. The research method which covers the data collection method and analyses. This is followed by the results, discussion, and conclusion.

Chapter Eight- Discussion: This chapter discusses the findings of the substantive chapters (Chapter 4-7) in line with the Social Ecological Model (SEM) and existing literature. The discussion also explores the findings of the study in relation to Foucault's work on Sexuality. This chapter is presented in four sections; the first section summarises the key findings of both the qualitative and quantitative result strands. The second section discusses the overall research findings which are divided into five sub-sections covering the individual, family, and community, institutional and societal level determinants of SRH service use among adolescents in Nigeria. The third section links the findings to Foucault's work on sexuality, and the final part discusses the policy implications of the results.

Chapter Nine - Conclusions and recommendations: This chapter provides an overall conclusion, a comprehensive summary of the contribution of this study and actionable recommendations to influence policy. It provides a critique of the researcher's relationship with the research participants. It further highlights the study´s limitations, the implications for policy, service provision, practice and possible future research agenda.

# Chapter 2: Literature Review

## 2.1 Introduction

This chapter presents a logically argued case based on a comprehensive review of Adolescent Sexual and Reproductive Health (ASRH) globally. The literature review chapter consists of two sections: Section A and Section B. The first section (Section A) examines relevant available empirical research on adolescents' and service providers' views on and perception of access to sexual and reproductive health (SRH) services using a systematic literature review approach. This section provides a detailed account of the study selection process, eligibility criteria used, the keywords applied during the search process, the data collection and appraisal tools used to critique study quality. It presents an explanation of the findings identified in the primary studies; the limitations of the review and gaps for further areas of research.

The second part (Section B) of the review takes a narrative approach to critique relevant literature in order to provide a comprehensive understanding of the determinants of SRH service use among adolescents; focusing on determinants of comprehensive knowledge of HIV (CKH) and use of contraceptive services. The reason for the choice of narrative approach was because the studies that examine the determinants of adolescents' SRH health were predominantly quantitative studies with all findings reported statistically. As a result, it would be difficult to synthesise them thematically as in section A. Hence, the narrative approach is appropriate as it can help to understand the current state and breadth of knowledge in the subject of study, identify gaps and refine the research question.

Also, the structure of the review was conducted in such a way that it enables the research questions to be formulated, identified relevant theories and related studies to the proposed topic of interest. It provides guidance on the methodology for future research. Figure 2.1 provides details of adolescent and young people's SRH that the review addresses.

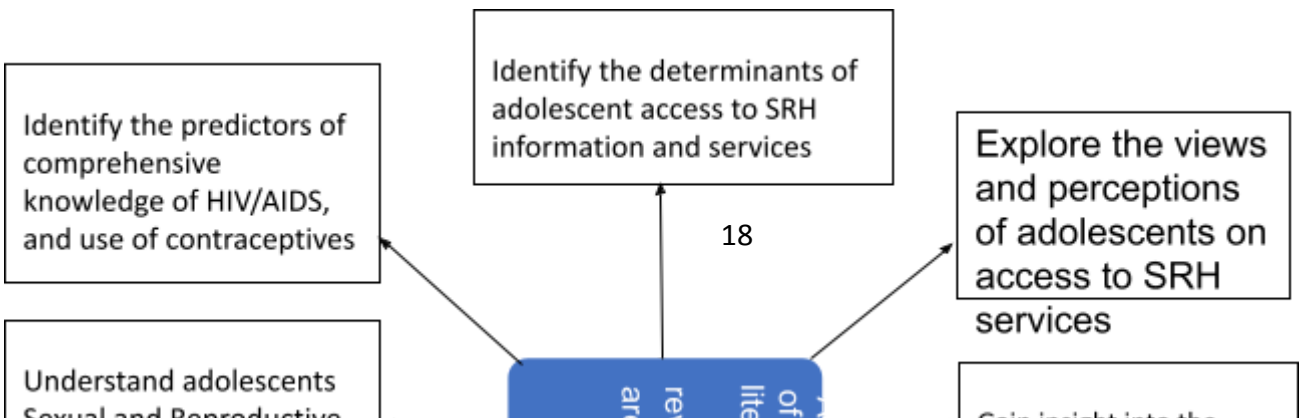


Figure 2.1: Broad aim of the literature review

Source: Author's construct

## 2.2 Section A: Adolescents' and providers' views on and perceptions of access and use of sexual and reproductive health services

### 2.2.1 Literature review methodology

This section adopts a systematic approach to ensure that explicit and rigorous criteria are used to identify, critically evaluate and synthesise all relevant literature in adolescent sexual health. This section comprehensively covers the eligibility criteria, different databases searched, keywords used and their combination using Boolean search operators, data collection and extraction tools, assess the quality of each paper using evidence-based criteria and the result identified from the search. The premise for this approach was based on the above characteristics of a systematic approach as this makes the study more transparent (Rudestam and Newton, 2007).

#### 2.2.1.1 Inclusion and exclusion criteria

The following inclusion criteria were applied during the process of study; peer-reviewed journals, reports with empirical data relating to preferences, perceptions and views of adolescents and

professionals on access to SRH services were all identified. To ensure relevant papers were not left out, no date limit was set, and only studies published in English and among adolescents aged 10-24 were eligible for this review. Conversely, studies not published in English, non-empirical studies and studies among adults were excluded. See table 2.2.

#### 2.2.1.2 Literature Search strategy and study identification

A comprehensive search approach was undertaken to identify relevant literature on the topic of interest. The following databases: CINAHL, PsycINFO, PUBMED, EBSCOhost, LILACs, EMBASE, CENTRAL, Academic search premier, Central Web of Science, Biosis citation index, MEDLINE, SCIELO citation index, science direct, SCOPUS, ProQuest, Sage, Biomed, Cochrane Database, Centre for Review and Dissemination (York), Google Scholar were searched. Other repositories searched include IBBS (International Bibliography of social sciences), Hydra University of Hull, OpenDOAR, Ethos (British Library), Network digital library of Thesis and Dissertation, ZETOC (Global Research Publication), JournalTOCs, JISCmail. Furthermore, a hand search was done in some relevant departmental websites, such as Federal Ministry of Health Nigeria, Family Health International, National Agency for the Control of AIDS Nigeria**,** Department of Health, Nursing and Midwifery Council, NICE, NIHR, ESRC database, WHO, UNFPA, Guttmacher Institute and Population Council. The reference list of relevant studies was also crosschecked to make sure all-important studies were included in the literature review.

In addition, the above databases were searched using the following search terms and Boolean operators: Sexual and Reproductive Health, sex education, young people or adolescents, sexual health information, professionals or health service providers' views, and perceptions. See table 2.1 for a summary of keywords used with a systematic application of phrases, truncation, wildcard and alternative spellings using Boolean operators.

Table 2.1: Search Strategy using Boolean Operators

| | Key words | OR | OR | OR | OR | OR |
|---|---|---|---|---|---|---|
| | | | | | | |
| #1 | Sexual and Reproductive health | Sexuality education | Sexual health services | Genitourinary medicine health | Reproductive Health services | Sexual health information |
| AND #2 | Young people | Adolescents | Young adults | Youths | Teenagers | Children |

| | | | | | | |
|---|---|---|---|---|---|---|
| AND #3 | Family planning | Abortion | Contraceptive | STI/HIV | Birth control | Condom |
| AND #4 | Professionals | service providers | Gatekeepers | Care givers | Primary health care professional | School Nurses |
| AND #5 | Views | Experiences | Perception | Feelings | Attitude | Opinion |

#### 2.2.1.3 Data collation, extraction and appraisal tools

The data extraction spreadsheet was created using Microsoft Excel to record all relevant studies. An initial account in EBSCOHost and Web of Science was created, which enabled identified studies to be temporarily stored during the search process and further transferred to the RefWorks reference manager. All studies relevant to the review were exported finally to Microsoft Word. The data extraction headings included were: author's name (s), aims and objectives of the study, study design, limitations and findings. This spreadsheet was crossed-checked to ensure accuracy of extracted data.

The included studies were appraised critically for methodological quality and rigour using a universal appraisal tool adapted from Hawker *et al.* (2002) and Clinical Appraisal Skill Programme (CASP) tool. This approach was adopted because of the heterogeneous nature of the studies identified. The universal appraisal tool was used to critically assess the trustworthiness, relevance and results of published papers included in this study. The quality assessment focused on the research methodology, study design, recruitment strategy, inclusion and exclusion criteria, sampling method, ethical consideration, data analysis, findings and relevance. Data were quality assessed by one reviewer and repeatedly crosschecked to ensure accuracy. See full details of quality assessment indicators in table 2.2

#### 2.2.1.4 Thematic analysis

The findings of the review were thematically reported. The thematic analysis was done by first assigning codes to each article after critical review. Codes that were identical or similar were grouped to form a theme. The codes and themes were accurately checked and finally six themes emerged from the exercise: Barriers to access and utilization of SRH services, ASRH service

preference, Sources of SRH services and information, Enablers of SRH service access and Reproductive health issues/concerns of adolescents and determinants of providers' attitudes to adolescent sexual health provision. See table 2.2 for details.

Table 2.2: Appraisal indicators, themes and inclusion/exclusion criteria

| Table 2.2 | | | |
|---|---|---|---|
| Appraisal indicators | Themes | Inclusion criteria | Non-inclusion criteria |
| Is there a clear statement of the aims and a research question?<br><br>Is the research approach/design appropriate? | Barriers to access and utilisation of Sexual and Reproductive Health (SRH) services | Studies published in English | Studies not published in English |
| Is the research design defensible?<br>Is the sampling strategy appropriate to address the research aim?<br><br>Have ethical issues been taken into consideration? | Adolescents Sexual and Reproductive health service preferences | Empirical studies on young people & professionals view and perception on SRH information and services | Non empirical studies on young people access to SRH services |
| Are the methods of data collection appropriate and clearly explained?<br><br>Is the description of the data analysis sufficiently rigorous? | Sources of SRH services and information | Studies on young people age 10-24. | Studies on adults aged 25 and above |
| Is there a clear description of the findings/results?<br><br>How important are these findings to policy and practice? | Enablers of SRH service access and use | Note: No geographical & time limit. | Studies on general health services |
| Are the findings of the study generalizable or transferable to a wider population? | Sexual & Reproductive health issues/concerns of adolescents | | |
| How important are these findings to policy and practice? | Predictors of providers attitude to adolescent sexual health provision | | |
| | | | |

A total of 2184 studies-were identified through database search plus an additional 71 studies from other sources. One thousand two hundred and seventy-six studies were left after duplicates were

removed. This was screened for relevance, and 1159 articles were excluded based on the exclusion criteria outlined in table 2.2. This was further passed through a more rigorous scrutiny against eligibility and validity. A total of 45 studies were finally included in the review. Figure 2.2 provides details of the selection process. Twenty-seven studies were qualitative and mixed method, and eighteen studies were quantitative research. Nineteen studies conducted were in Africa, eight in Asia, eighteen in Europe and America. Twenty-three studies considered the views and perceptions of providers on adolescent and young people's access to services, fourteen studies explored the views of young people on their access to SRH services and eight studies considered both. The articles used in this review were summarised in table 2.3 (Appendix-9)

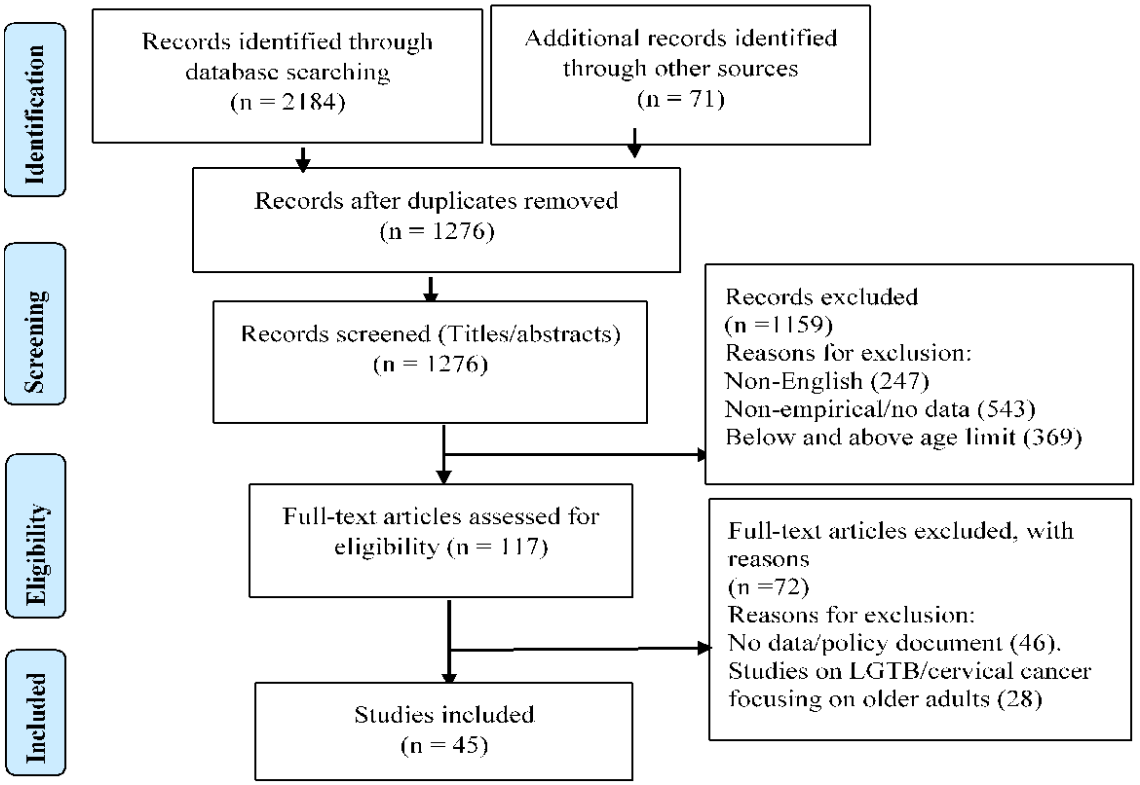



Figure 2.2: PRISMA flow diagram showing the study selection process

#### 2.2.1.5 Quality assessment

The studies presented in table 2.3 (Appendix 9) have varied methodological quality. All the studies have clear aims, objectives and well-justified rationale for the study. Forty-one studies defined their research design except (Alli, 2013; Bethea et al., 2007; Donovan et al., 1997; Tilahun, et al.,

2012). Thirty-eight studies described their sample size and participant recruitment strategy, although two studies (Pitts, et al., 1996, Muntean, et al., 2015) adopted a sampling strategy that was inappropriate for the study aims and objectives. For example, Pitts *et al*. (1996) recruited participants using random sampling technique. This is arguably inappropriate for a qualitative study although it is commonly used in quantitative research. This is because qualitative research aims to purposively recruit participants with rich information on the topic of interest.

Seven studies (Bethea et al., 2007; Donovan et al., 1997; Jaruseviciene et al., 2011; Mason, 2005; Shahhosseini and Abedian, 2015; Pitts et al., 1996; Matich et al. 2015; Nwokolo, 2002) did not report their study sampling strategy and as a result, the findings obtained cannot adequately be trusted and reliable as the sampling strategy was not known. Five quantitative studies (Ege et al., 2008; Mngadi et al., 2008; Tilahun et al., 2012; Warenius et al., 2006; Omobuwa 2012) and five qualitative and mixed method studies (Both, 2014; Bourton, 2006; Chambers et al., 2016; Iyer and Aggleton, 2013; Lince-Deroche et al., 2015) reported small sample sizes with no clear justification. This has implications for the transferability of the findings to another context.

Furthermore, all the studies used appropriate data collection tools, which were well explained except in two studies (Bourton, 2006; Jaruseviciene et al., 2013) where neither discussed and/or justified their data collection methods. The data analysis process of six studies (Alli, 2013; Jacobson et al., 2001; Johnston et al., 2015; Rubin et al., 2013; Temin et al. 1998; Sychareun, 2004) was not sufficiently rigorous, and there was no statement describing how valid and reliable the measures were. Thirty-three studies gave a clear statement of ethical clearance and how anonymity, confidentiality and consent were gained among the gatekeepers and participants.

Thirteen studies, however, did not give an account of ethical approval and how the participants were protected during the research process. All the studies reported their results unambiguously, although only twenty-two studies acknowledged the weaknesses of their design as shown in table 2.3 (Appendix 9). Finally, eleven studies were identified to be the most rigorous and high quality that met all the critical appraisal indicators (Table 2.2). These were studies conducted by (Agampodi, 2008; Amuyunzu-Nyamongo et al., 2005; Biddlecom, et al., 2007; Buseh et al., 2002; Donaldson et al., 2013, French 2002, Godia, et al., 2013, Jaruseviciene, et al., 2006, Johansson, 2006, Kennedy, Bulu et al., 2013, Klingberg-allvin, Tam et al., 2007). These studies all justified their research design using appropriate data collection methods. Also, the sampling strategies and

sample sizes were appropriate to address the research aims, and in each case the data analysis was sufficiently rigorous with an in-depth description of the analysis process. Six themes emerged from the analysis and synthesis of professionals' views and perceptions of access to SRH services and information. See table 2.2.

### 2.2.2 Emerging themes

#### 2.2.2.1 Barriers to access and utilisation of Sexual and Reproductive Health (SRH) services

Many studies have linked adolescent and young people's non-access to SRH information and services (family planning services, post-abortion care services, STI treatment, HIV testing and counselling) to social, structural, economic, financial and psychological factors (Johnson, et al., 2015; Jacobson *et al.* 2001; Lince-Deroche et al. 2015). These barriers prevent young people from accessing services. These limitations to adolescent access and use of SRH services tend to differ from the perspective of young people and service providers. Seventeen studies from the review identified social barriers as one of the obstacles to adolescents' access and use of SRH services. Johnston *et al.* (2015) in a cross-sectional mixed method study compared the views of sexual health service providers with the views of adolescents themselves in Australia. The study found that service providers always see confidentiality, lack of awareness of available SRH services, cost of treatment, geographical location and hours of service operation as a hindrance to young people's access to SRH care. More than half of service providers reported that young people were not aware of sexual health services available to them and also argued that societal stigma prevents young people from accessing services. However, young people, on the contrary, see structural barriers such as transport, cost and service operating hours to be important, but placed greater importance on the personal attributes of service providers, most importantly their welcoming, attentive and non-judgemental attitudes. The selection process for this study was purposive and therefore within such a selection, bias may be present/inherent, which is likely to impact on the findings.

Similarly, Jacobson *et al.* (2001) in a mixed method study in the UK to determine how teenagers and primary care providers view themselves, found that service providers had no respect for adolescents' health concerns, they had poor communication skills and lacked understanding of issues of confidentiality as it related to them. Surprisingly, providers did not always share these concerns, and they also had differing views on communication and confidentiality issues. This

study showed a clear difference between teenagers' opinions about health care and the ideas held by primary care providers. Pitts *et al.* (1996) in a qualitative study showed that there were marked differences of views between providers who provide advice via a general practice and those who operate from a designated service for young people. The author reported that all providers in this study seemed to hold negative views of young people and their sexual activity. The author further considered how far these underlying attitudes of providers may militate against the provision of appropriate services. Despite small sample sizes, a mixed method study (Lince-Deroche et al. 2015) found that providers' unsupportive attitudes prevent young women in South Africa from accessing abortion services, HIV testing and family planning services. Likewise, Biddlecom *et al*. (2007) in a study in Burkina-Faso, Ghana, Malawi and Uganda among adolescents support Lince-Deroche et al. (2015) assertion by stating that a good number of sexually active adolescents do not know a source for contraceptive or STI treatment due to fear, embarrassment from providers and financial obligations.

In the same vein, a qualitative study in the Republic of Vanuatu was carried out involving 341 adolescents and 12 service providers with the aim of exploring the barriers and enablers of adolescents' access to SRH information and services. Adolescents in this study noted that having a friendly service provider enabled them to access services (Kennedy *et al.* 2013). Nearly all groups of participants stated that a provider's unfriendly and judgemental attitude was their primary concern as to why they did not access services. Some of the adolescents feared that hostile and judgement providers would rebuke them and make them feel embarrassed. The study further highlighted that providing adolescents with free SRH services and delivering confidential services were also prominent features of young people's access to services. No wonder that Matich *et al.* (2015), in a quantitative study of young people's perceptions of SRH in Australia, found that a service provider's characteristics were young people's most valued markers of quality in SRH services.

Similarly, Amuyunzu-Nyamongo *et al.* (2005) in a qualitative study involving 55 FGDs conducted in four African countries among in-school and out of school adolescents aged 14-19 years. The study found that young people placed a high value on the attitude of service providers, confidentiality and accurate sexual health information, arguing that these factors prevent them from accessing services. However, the facility guide used to recruit participants was challenging to implement in

all the countries, especially in Malawi, and married adolescents were included in Malawi and Uganda (ibid). Likewise, Both and Samuel (2014) in a qualitative study among young people, service providers and key stakeholders exploring how young people access emergency contraceptives (ECs), found that service provider's attitude affected the amount and type of SRH information available to young people. A similar study in the UK confirmed that lack of staff friendliness, trust and confidentiality hinder adolescent access to SRH services (Donovan *et al*., 1997).

Conversely, the above concerns and barriers to adolescents' access to SRH services seem to differ from studies that focus on the views of service providers. Muntean *et al*. (2015) explored key informants views of young people's SRH health needs in a semi-structured interview involving 14 key informants in Ethiopia. Key informants identified limited SRH knowledge, lack of open discussion of sexual matters, low status of women, cultural and logistic barriers, competing priorities among community health professionals, and limited resources for health facilities as the barriers to young people's access and utilisation of SRH services. Although, the sample size used to obtain the data was small, it could be argued that these opinions cannot be transferable to the view of sexual health professionals in Ethiopia. However, the study did prove that what service providers consider as hindrances to young people's access to services differed from the views of adolescents.

Additionally, the findings from Muntean *et al*. (2015) align with the Nair et al., (2013) qualitative study involving 34 in-depth interviews to understand the perception of service providers on young people's access to services. The study identified adolescents' barriers to utilisation of services to be lack of awareness, stigma to utilise services, economic factors, a facility available at great distances and non-availability of services. Providers' views in this study did not recognise that their attitudes were seen as interfering with adolescents' access to SRH services.

Furthermore, a mixed method study in Lao People's Democratic Republic (PDR) found that sexual health service providers felt uncomfortable in communicating with unmarried adolescents and providing contraceptive services to them. They placed a low priority on adolescent privacy and confidentiality. The author conveyed that providers inclined to attribute difficulties entirely to young people's unwillingness to listen (Sychareun, 2004). Also, the study found that less than 60% of formal sector providers would supply contraceptives to unmarried adolescents, compared to

80% of informal providers, but the latter were more likely to charge a fee for supplies. This is probably a result of social and cultural values held by some service providers. Tilahun et al., (2012) in a quantitative study in Ethiopia found that nearly one third (30%) of health care professionals had negative attitudes toward providing SRH services to unmarried adolescents. Close to half (46.5%) of the respondents had unfavourable responses toward providing family planning to unmarried adolescents, although this was carried out with small sample size.

A qualitative study in Vietnam by Johansson *et al. (*2006) explored the perspectives of midwives and doctors on adolescent sexuality and abortion care. Data was collected through observations of care in abortion clinics and FGD. The study found that on the barriers to quality abortion care, health service providers ranked structural factors, such as lack of technical skills, unavailability of standard equipment, and waiting time higher than factors such as aspects of inter-communication skills, confidentiality, confidence and counselling skills, which were ranked lower (Johansson *et al.,* 2006). They considered that counselling unmarried clients in connection with abortion should focus on warning against the risks and dangers of abortion and pre-marital sexual relations, about which they were strongly against.

#### 2.2.2.2 Adolescents Sexual and Reproductive Health service preferences

Fourteen studies reported adolescents and young people preferred places and sources of SRH information and services. Omobuwa (2012), in a cross-sectional descriptive study in Nigeria involving 392 young people, found that 37.8% of adolescents preferred seeking SRH services from government hospitals while 28.1% indicated a preference for private hospitals. However, despite their preference for government hospitals, they still had little or no access to youth-friendly services. However, the study only recruited in-school adolescents, excluding out-of-school adolescents and took place in Osun state, which is one of the 36 states in Nigeria and does not cover a reasonable or representative proportion of the country. Therefore, the findings may not represent the opinion of all adolescents in Nigeria. This confirms the results from Biddlecom *et al* (2007) in which adolescents showed a strong preference for public clinics with a strong positive perception of confidentiality, accessibility, where they were treated with respect and treated at relatively low cost. Similarly, Matich *et al.* (2015) in a quantitative study found that young people preferred services where staff were friendly, good listeners, and non-judgemental. The study

further added that young people preferred to seek SRH services from service providers who are specialists in this field (Matich, 2015).

Relatedly, the findings from Agampodi *et al* (2008), further support the above claim that adolescents preferred to seek sexual health services from specialist sexual health providers. The study also found that adolescent boys and girls did not want their parents to be aware of their use of SRH services. Adolescents showed a negative attitude towards this and want the services to be confidential. Similarly, Buseh et al., (2002) backed the preceding assertion that most adolescents want to receive sexual health information from healthcare workers. Nwokolo *et al* (2002) in a quantitative study to identify factors that encouraged young people's use of sexual health services revealed that adolescents wanted clinics to run more frequently, and place a high value on service providers' attitudinal attributes rather than factors to do with sex, age, or physical appearance of providers. They did not mind if the waiting room contained older people. Young people wanted the clinic to be open after school; girls preferred to attend with a friend. In addition, confidential and walk-in services were preferred. Young people felt the age of the staff was not an issue (Nwokolo *et al.* 2002). Chambers *et al.* (2002) reported that young people's preferred sources of disseminating SRH information conflicted with the views of service providers. While young people were keener on interventions being youth-friendly, professionals were much more focussed on the restructuring services as they believe it is more important in improving young people access to services. Moreover, none of the studies above explored further the reason why adolescents prefer seeking sexual health information from clinics, government hospitals and specialist service providers over other sexual health service providers.

#### 2.2.2.3 Knowledge of SRH services and sexuality education

Knowledge of sexual health service availability improves adolescents' and young people's access to sexual health information and services (Parkes *et al.* 2004; Muntean *et al*. 2015). In a qualitative study in Sri Lanka, Agampodi *et al.* (2008) reported that adolescents had poor knowledge of existing SRH services, especially among the boys. The author added that female participants sought help from friends. These were as a result of lack of confidentiality, youth friendliness, accessibility of available services. Likewise, according to Jacobson et al., (2001) teenagers had a lack knowledge of SRH services available from primary care providers. Biddlecom *et al*. (2007)

agreed with the above assertion that a good number of sexually active adolescents did not know a source for contraception or STI treatment due to fear, embarrassment and financial reasons.

However, the above assertion seems not to agree with the Lince-deroche *et al.* (2015) study in South Africa which found that young women in the study had a good knowledge of contraceptives but had a low access to and usage of the services. The study claimed this was as a result of the provider's unsupportive attitudes. Similarly, the French (2002) findings support the Lince-deroche *et al* (2015) argument that young people's knowledge about contraception, sexually transmitted infections and the risk of pregnancy was often high. The study further found that what young people wanted from sexual health services were at odds with their experiences of accessing the service. Temin *et al.* (1999) in an exploratory qualitative study found that young people had some knowledge about STDs, especially HIV and AIDS, but many of them believed infections could not be avoided. Also, Amuyunzu-Nyamongo *et al* (2005) in a qualitative study in four African countries found that young people were aware that they may be at risk of contracting STIs, including HIV, but the quality and depth of their knowledge vary, and misconceptions were still commonplace. In this study, young people were aware that a person could be HIV positive without displaying any symptoms. However, they did not hold the same belief with other STIs.

#### 2.2.2.4 Educational needs of young people

In the area of obtaining quality sexual health information, adolescents and young people reported limited and inadequate sexual health information available to them, resulting in their sexual educational needs not being satisfactory met. Sex education informs young people about attitudes and values, which help them informed decisions. In a mixed method study of young people's view on sex education that they receive in school, Bourton, (2006) found that young people felt their sex education was inadequate and incomprehensive. They suggested it should be delivered by someone other than a teacher and were displeased with the way the emotional and moral component of sex education was taught. Surprisingly, this view differs from providers who should provide sex education. Shahhosseini and Abedian, (2015) in a cross-sectional survey found that providers' and adolescents' views on sexual educational needs of young people differed. Providers identified educational needs of adolescents to be in terms of education about prevention of high-risk sexual behaviour, which was significantly different from an adolescents' perspective.

Bamgbala et al., (2006) in a quantitative study of opinions held by private medical providers on young people's use of services found that professionals believe that teachers and parents should provide sex education to adolescents. However, this study took place only in one state in Nigeria out of 36 states in the country; hence, the findings may not be generalizable. Promoting sex education among adolescents should be paramount because limited SRH knowledge hinders adolescent access to services (Muntean *et al.* 2015). Similarly, Parkes et al., (2004) found that adolescents with better knowledge levels were more likely to use services.

#### 2.2.2.5 Sources of SRH information and services

Mass media, friends, and family are common sources of sexual health information for adolescents. Buseh *et al.,* (2002) in a quantitative study involving 941 adolescents in South Africa found that 62% of adolescents reported mass media (broadcast and print) as their primary source of HIV/AIDS and sexual risk behaviour information; 13.9% reported siblings and friends and 6.3% reported parents, family and elders to be the least sources for HIV/AIDS information. This study focused on in-school adolescents with no consideration to out-of-school adolescents; hence, the findings were the opinion of in-school adolescents only (Donaldson et al., 2013). In quantitative research by Donaldson (2013) to describe the extent to which sexually experience adolescent in the USA receive SRH information, the study found that 55% and 43% of sexually experienced female and male adolescents respectfully received STI/HIV information from parents and teachers, and for birth control information only 59% and 66% respectively. About one-third reported healthcare providers as a source for birth control information, with a similar proportion reporting healthcare provider as a source of STI/HIV information. Among the three sources examined in this study, healthcare providers were identified as being least involved in the delivery of sexual health information (SHI) content to sexually experienced adolescents. The study also found that sexual health information receipt varies by gender with more females than males reporting birth control information receipt.

Other studies (Amuyunzu-Nyamongo et al. 2005; Bush *et al.,* 2002; Bourton 2006; Donaldson et al., 2013) support the claim that adolescents seek SRH information from mass media, care providers and school teachers. According to Agampodi (2008), female adolescents informally seek help for sexual health issues from friends. Despite a small sample size, Both and Samuel (2014) in a qualitative study in Ethiopia among professionals found that young people preferred seeking SRH

information from discrete sources like friends, partners and mass media. The study further revealed that providers' attitudes affect the amount of SRH information and services available to young people, even to the point where service providers were uncomfortable with high sales of Emergency Contraceptives (ECs). This is in line with the findings from Bourton, (2006) which stated that young people seek SRH information from friends, family, magazine and media. Omobuwa (2012) in a quantitative study in Nigeria found that young people indicated media as their primary sources of health information. Temin, et al. (1999) in a qualitative study exploring adolescents' perceptions of sexual behaviour among their peers and their preferred means of preventing and treating STDs revealed that young people indicated media as the best way to educate young people about STDs and condom use.

Moreover, adolescent sources of SRH services seem to differ from information sources. Matich *et al.* (2015) in a cross-sectional survey of young people's perceptions of SRH noted that young people preferred to seek care from specialist services. Lince-Deroche *et al.* (2015) in mixed method research found that clinic was the primary source for adolescents' SRH services. Kiapi-Iwa, (2004) also argued that young people visit informal and traditional health care providers due to the confidentiality and privacy they offer.

#### 2.2.2.6 Enablers of access and use of Sexual and reproductive health (SRH) services

Erulka *et al.* (2005) in a quantitative study involving 2083 adolescents aged 10-19 in Kenya and Zimbabwe aimed at assessing the perceptions of young people on the importance of different aspects of SRH services often considered youth-friendly. The study found that adolescents rated confidentiality, short waiting time, low cost and friendly staff as the most critical characteristics in accessing SRH services. Surprisingly, the least essential features identified by adolescents include youth-only service, youth involvement and young staff. This shows that adolescents do not prioritise stand-alone youth services such as youth centres, or necessarily need arrangements particular to youth such as youth involvement. However, the study (Erulka *et al* 2005) did not report how consent from respondents was sought after in the primary study whether the participants were coerced to take part in the study or not.

A quantitative research to examine the role of socio-demographic background on young people's use of SRH services found that proximity to specialist clinics was linked to greater use of SRH

services while low spending money and high parental monitoring were associated with less use (Parkes et al., 2004). Adolescents with better knowledge who rated their school sex education as useful, who were comfortable talking about sex and who had discussed contraception with peers were more likely to have used services although this study took place only in Lothian and Tayside, Scotland in the UK.

Amuyunzu-Nyamongo, et al., (2005) and Agampodi (2008) argued that young people placed a high value on being able to obtain confidential and accurate SRH information. Kennedy et al. (2013) in their qualitative study revealed that a friendly service provider was an important feature for young people for accessing services. Nearly all groups described a fear of unfriendly and judgemental providers. The Matich *et al.* (2015) study showed that young people preferred services where staff were friendly, good listeners and non-judgemental. On the other hand, the views of service providers on enablers differ from what young people reported. Rubin et al., (2013) in a qualitative study to explore the opinion of primary care physicians about the provision of contraceptives to adolescents found that service providers identified enablers to contraceptive provision to include knowledge of an adolescent's suitability, awareness of a clinical environment, and contraceptive availability in the clinic. Adolescents considered these factors of least relevance.

#### 2.2.2.7 Sexual & Reproductive health issues/concerns of adolescents

Six papers reported on the SRH issues/concerns of adolescents. Mason, (2005) in a qualitative study revealed the issues staff felt were important to young girls. Providers identified young people´s lack of knowledge around STI, alcohol consumption, peer pressure, low self-esteem and confidence to be pertinent to young people. Another qualitative study (Nair et al., 2013) exploring the perception of how providers identify sexuality, psychosocial conflict, identity crisis, and substance abuse as the problems facing adolescents. On the contrary, the adolescent sexual health challenges differ to a reasonable extent from the views of adolescents themselves. Young women in a mixed method study identified pregnancy and HIV/AIDS issues as their significant SRH challenges (Lince-Deroche et al. 2015).

Similarly, Omobuwa (2012) in a quantitative study among young people to ascertain their SRH concerns, found that the most commonly perceived adolescent health problems as viewed by adolescents themselves were menstrual problems, unwanted pregnancy, HIV/AIDs and lack of

sexuality education. According to Rubin et al., (2012) many respondents believed adolescents' primary concerns centred on pregnancy prevention, although many providers prioritise STI prevention and thus would not offer contraceptives. Kumi-Kyereme et al., (2014) in a qualitative study exploring the views of gatekeepers towards adolescents SRH in Ghana found that providers perceived adolescents' major SRH issues to be teenage pregnancy and HIV/AIDS. Some factors hindering the promotion of ASRH were identified as being lack of effective communication between parents and their children and attitude of providers.

#### 2.2.2.8 Determinants of providers' attitude in providing youth-friendly services

Nine studies linked predictors of providers' attitudes towards adolescent sexual health provision to socio-demographic factors. Bamgbala et al., (2006) in quantitative research in Nigeria found that religious affiliation influences perceptions and practices of private medical practitioners. Godia et al., (2013) reported determinants of a provider's attitude towards SRH services to be personal feelings, cultural, religious values and beliefs. The Bethea et al., (2007) study revealed that older GPs (aged 49 and over) were less likely than younger GPs (aged under 36 years) to prescribe contraception to young women aged under 16 years without parental consent. Ege et al., (2008) evaluated the opinions of midwifery students on adolescents' SRH and found that social-value judgments influenced respondents' attitudes and perceptions about adolescent SRH. The study also found that 50.9% of midwifery students believed abortion was morally wrong, and 23.6% believed only married couples should be informed of contraceptive methods.

Also, Bamgbala *et al.* (2006) argued that 61% of providers in the study were of the opinion that abortion should be legalised. Likewise, Mngadi et al., (2008) identified that the health provider's moral doubts, negative attitudes, values and ethical dilemmas influence their decision. Tilahun (2012) in a multivariate analysis in Ethiopia indicated that being married, lower education level, being a health extension worker, and lack of training on SRH services were significantly associated with providers' negative attitudes toward provision of SRH services to adolescents. Similarly, the Warenius, et al., (2006) study in Kenya and Zambia revealed that providers with more educational attainment and those who had received continuing education on adolescent sexuality and reproduction showed more willingness towards more youth-friendly attitudes. Hebert *et al.* (2013) in a qualitative study concurs with Tilahun (2012) and Warenius (2006) that many providers excluded youth and unmarried individuals from family planning services due to lack of basic skills

and knowledge in family planning provisions. One study (Hebert *et al.,* 2013) linked providers' motivation in providing SRH services to health benefits offered by family planning methods.

### 2.2.3 Discussion

This systematic review reports the empirical evidence on adolescents' and providers' views and perceptions on access and use of SRH health information and services. Six core themes emerged from the review that put the study into perspective. These are barriers to SRH services, sources of sexual health information and services, service preferences, enablers of service utilisation, sexuality education and sexual health concerns of adolescents and predictors of providers' attitude. The review shows that adolescents and service providers have differing views on what prevents and enables an adolescent's access to SRH services and information. Also, that the barriers emanating from a provider's attitudes are the key hindrance to adolescent access and use of services as reported in 17 studies. This is against other forms of barriers as perceived by providers, such as physical and financial barriers. The findings of this review align with the Chilinda et al., (2014) findings in a systematic review done in developing countries that unprofessional attitudes of health care providers prevent adolescents from gaining access to SRH services. WHO (2012) quality standard on adolescent-friendly health services reports adolescents' limitations in accessing sexual health services to the unfriendliness of service providers. Also, enablers of services and features of adolescent-friendly services were linked to staff characteristics such as being friendly, confidentiality and non-judgemental attitude. Evidence from the WHO (2006) review showed that actions to make sexual health services user-friendly and welcoming had led to an increase in the use of services by adolescents.

With reference to service preference, the findings of the reviewed studies show young people's great affinity for specialist services from providers who work in a government clinic or primary care settings. This evidence is supported by a study in India carried out by the Population Council (2012) which found that young people preferred sexual health services from medical officers and community health centres. This substantiates the reason why health providers' unprofessional attitudes should be critically examined, as adolescents are more likely to seek services through them. The review uncovers that adolescents have a general knowledge about SRH issues but lack knowledge of service availability (Jacobson *et al*. 2001; Agampodi *et al.* 2008). The International Conference on Population and Development (ICPD) (1994) highlighted young people's need for

comprehensive and age-appropriate sex education, and regrettably, this commitment remains unfulfilled in many parts of the world (Jejeebhoy *et al.* 2013). Evidence drawn from survey report conducted across 70 countries confirms that knowledge of sources of contraceptives among adolescent women in Africa and Asia is lacking (Wood *et al.* 2015).

Furthermore, the review found that young people's challenges centred more around the of issues around teenage pregnancy, HIV/AIDS and sex education rather than substance abuse and psychological conflict as thought by providers. The review found that the predictors of providers' attitude in providing adolescent SRH services were more linked to social demographic factors. Also, media and friends were the common sources of an adolescent's sexual health information, and adolescents prefer services from specialist providers. The review also found that young people need more sexual health education to inform their decision-making process and also, that confidentiality of service, affordability, and friendly staff are key determinants of an adolescent's access to sexual health services.

Like every other study, this systematic review draws on the limitations in terms of the fact that some of the primary studies included in the review contain methodological flaws which might impact on the findings of the review. However, many of the papers included in the study, if not all, met most of the appraisal indicators making the results valid. Secondly, the study identification and extraction processes were done by one reviewer rather than supposedly two reviewers. Hence, the reviewer ensured the data extracted was thoroughly cross-checked.

## 2.3 Section B: Determinants of SRH health service use among adolescents

This section examines the literature on the determinants of SRH service use among adolescents with a focus on Comprehensive Knowledge of HIV (CKH) and contraceptive use among adolescents. Accurate and CKH is still low among young people, and investment in sexual health education is required. Increased use of condoms and a delay in the initiation of sexual activity has contributed to a decline in HIV incidence among young people in most of the Sub-Saharan African countries (UNAIDS, 2010). Having accurate HIV/AIDS knowledge about transmission is essential for avoiding HIV infection and ending stigma and discrimination of infected persons. Correct and comprehensive knowledge of HIV/AIDS (CKH) can positively and markedly influence attitudinal change and behaviour related to HIV (Teshome, 2016). Adolescents and young people's CKH are

influenced by individual and contextual level factors. Studies on community and state level factors influencing utilisation of SRH services are limited. Some of the available studies on contextual level influence presented here focused on women aged 15-49. The literature synthesised in this section was identified following a comprehensive search of different databases (CINAHL, PsycINFO, PUBMED, EBSCOhost, LILACs, EMBASE, CENTRAL, Academic search premier), as well as manual searches on Google scholar. However, the search for literature did not follow a systematic approach due to the *reason given in section 2.1.*

### 2.3.1 Determinants of comprehensive knowledge of HIV/AIDS

#### 2.3.1.1 Individual and family level factors

**Education**

Comprehensive knowledge of HIV (CKH) defined as "Percentage of adolescents (15-24 years) who know the two major ways of preventing the sexual transmission of HIV and the three common misconceptions about HIV transmission" has a strong correlation with having formal education. Adolescents who had formal education were more likely to have CKH (Gebregergish, 2015, Khanal, 2013; Teshome, 2016; Oljira et al., 2013, Zainiddinov, Habibov, 2016, Ciampa, et al., 2012; Ochako et al., 2011). This is indisputably because formal education brings about better-informed choices, strongly affects reasoning ability and improves adolescents' capacity to analyse and understand HIV risk-related behaviour (Baker *et al.,* 2011). Ochako *et al.* (2011) in a quantitative study using the Kenya demographic health survey found that women with primary and at least secondary education were more than 6.8 and 17.5 times respectively as likely to have comprehensive knowledge of HIV/AIDS over their counterparts without education.

Similarly, Zainiddinov and Habibov, (2016) study among women in Tajikistan found that women with higher education were 2.1 times more likely to have CKH of HIV/AIDS than their counterparts who were less educated. However, Ochako et al. (2011) focused on urban young women aged 15-24, leaving out rural young women and urban and rural young men in Kenya and the later focused on Tajik women aged 15-49 with no focus on adolescent boys and girls who are disproportionately affected by HIV/AIDS. These findings could be said to represent the opinion of older women of reproductive age who are more experienced in sexual health issues.

Oljira et al. (2013) argued that individuals who received education on sexual health matters in school were more likely to have CKH. The above assertion was supported in a quantitative study by Teshome et al., (2016) in three East African countries. The study found that in Burundi, women in primary (P<0.001), secondary (P<0.001) and higher (P<0.001) educational levels had higher CKH than women with no education. High CKH was found in primary, secondary and higher educational levels than the reference group in Kenya. Similarly, women in primary, secondary and higher educational levels had higher CKH than women with no education in Ethiopia (p<0.001). This study revealed that women with primary, secondary and higher educational attainment had greater CKH than their counterparts with no education. However, this study combined all women of reproductive age with no specific reference to only young people aged 15-24. In support of the above, the Lwelamira *et al.* (2012) study added that adolescents and young people's chances of engaging in high-risk sexual behaviour increase significantly with lack of CKH and decrease considerably with having secondary education. This confirms Gebregergish, (2015) findings that CKH was higher among young people with secondary and tertiary education. A quantitative study in Nepal revealed that young men were more likely to have poor CKH if they had no education (Khanal, 2013). Education of youth is a significant determinant of HIV awareness and CKH prevention methods (Yadav *et al.* 2015). A quantitative study in Ethiopia revealed that CKH was low among young adults who cannot read and write (Megabiaw and Awoke, 2013). This is arguably as a result of a lack of capacity to make informed choices. Having formal education does not only improve CKH but also goes a long way to reducing stigma and discrimination among this group as they are well informed of the myths and misconceptions of HIV/AIDS

**Marital status**

Adolescent marital status is a determinant of comprehensive knowledge of HIV/AIDS (Gebregergish, 2015; Teshome; Youjie, 2016; Zainuddin; Habibov, 2016). The Zainiddinov (2016) study found that marital status was a strong predictor of CKH and AIDS. The study found that married women were 1.15 times more likely to know about HIV/AIDS when compared with unmarried ones. A quantitative study in Burundi found that married women had comprehensive knowledge of HIV when compared to their unmarried counterparts (Teshome and Youjie, 2016). Gebregergish (2013) in a quantitative study in Sierra Leone found that prevalence of CKH was higher among married/cohabiting partners than the unmarried ones. This is because young

women who are married are more likely to access sexual health services, more likely to be visited by a doctor or sexual health providers due to child-related issues and are more likely to had sources of information on HIV/AIDS than the unmarried individual who were societally discriminated against the most (Gupta and Miltra, 1999).

**Gender/Sex**

Studies have identified gender of an individual as a determinant of comprehensive knowledge of HIV/AIDS (Gupta and Miltra 1999; Oljira et al., 2013; Yadav *et al.* 2015). Oljira et al., (2013) in a logistic regression analysis showed that the females were 40% less likely to have comprehensive HIV/AIDS knowledge compared to the males. Similarly, Yadav *et al.* (2015) argued that CKH among female adolescents was lower when compared to their male peers. The study found that female adolescents appeared to be disadvantaged with a 48% less probability of having CKH than their male counterparts. This could be argued to be as a result of socio-economic realities and the gender inequalities of our time. Social norms relating to femininity affects and denies young adolescents the ability to access SRH knowledge. Female adolescents are more vulnerable and have limited access to opportunities and freedom due to multiple family and household responsibilities. In some developing countries, female adolescents are less likely to be in school and have less access to media compared to male adolescents; hence, limiting their chances of education which influences their knowledge of HIV prevention.

**Age**

Age is a predictor of comprehensive knowledge of HIV/AIDS (Megabiaw and Awoke, 2013; Teshome and Youjie, 2016; Gupta and Mitra, 1999; Yadav et al., 2015). A study in India found that young people aged 20-24 had more CKH than the age group 15-19 (Megabiaw and Awoke, 2013). A study in three East African countries revealed that CKH was age correlated (Teshome and Youjie, 2016). The study found that women in Burundi who were aged 40-44 had higher CKH than those aged 15-19. Likewise, older women in the study group in Kenya had higher CKH than those aged 15-19. This, of course, is not a surprise, as older women are likely to be more experienced, can societally justify access to sexual health services and may have had children which places them in a better position to visit a health clinic as opposed to young female adolescents who are culturally limited. Conversely, the above findings seem not to agree with the Gupta and Miltra (1999) study

in India, which found that older individuals seem to know less about HIV/AIDS than younger ones. The authors argued that knowledge is best impacted at an early stage. It is possible to shake off norms and misconceptions that people hold at an early stage of their life than when they have matured and grown older.

**Religion**

Adolescents' and young people's religious beliefs can affect their knowledge of HIV, mode of contraction and prevention (Gebregergish, 2013; Yadav *et al.* 2015; Teshome, 2016). Teshome (2016) in a quantitative study in three East African countries found that Christian women had significantly higher CKH than women with no religion in Burundi and Kenya. Likewise, the study found that Christian women had higher CKH than women of other religions in Ethiopia. However, this study took place in East Africa among women aged 15-49 in East African countries. The findings could be argued to represent the opinion of older women from a particular section of the country in question rather than female adolescents aged 15-24.

Similarly, the Gebregergish (2013) study revealed that adolescents who were Christians had more comprehensive knowledge of HIV/AIDS. This is not surprising as some religions influence culture and tradition more than others, in turn having a significant impact on the sexual health of the individual in the society. Evidence has shown that religiosity is a protective factor for youth behaviour (Somefun, 2019). It shapes the way society sees human sexuality and risk perception. Also, certain religions encourage early marriage, which has a strong implication for access and use of sexual health services as married adolescents are culturally justified in accessing sexual health services over their unmarried peers. Also, some religious groups disapprove of the use of modern contraceptive methods and abortion services which contributes to poor sexual health outcomes among adolescents.

**Mass media**

Social factors, such as mass and social media is a strong predicator of adolescent comprehensive knowledge of HIV/AIDS (Ciampa et al. 2012; Gupta and Miltra 1999; Khanal, 2013, Oljira, et al., 2013). In a quantitative study in India, television and radio were found to influence CKH among adolescents (Gupta and Miltra 1999). The authors added that significant results exist between households who have television as against households with radio, and also that more visual aids

should be used to communicate sexual health information, although information via radio can help reach suburbs in local communities. Similarly, Khanal et al., (2013) in a quantitative study in Nepal found that reading a newspaper and listening to radio both influence knowledge of HIV and AIDS. This is because most developing countries like Nepal use these channels to communicate sexual health information and risks associated with them. Hence, people who have access to these media channels are more likely to be up-to-date and aware of sexual health information and programmes. A study in Ethiopia reported that adolescents who had access to sexual health information through friends and radio were more likely to had CKH (Oljira et al., 2013). Also as expected, the study added that adolescents who have been taught about sexual health related subjects in school had more knowledge of CKH.

**Risk perception/ Personal factors**

Some other individual level factors have been found to have a strong association with comprehensive knowledge of HIV/AIDS. Ciampa et al., (2012) in a quantitative study among women in rural Mozambique found that women who had been tested for HIV or had a history of undergoing HIV testing had more comprehensive HIV knowledge than their peers Likewise, Ochako *et al.* (2013) in a quantitative study in Kenya found that adolescent women who had been tested for HIV, who knew someone with HIV and who had risk perceptions, were more likely to have comprehensive knowledge of HIV and AIDS, unlike their counterparts. The Megabiaw, 2013 findings align with Ochako et al. (2013) that self-perceived risk of HIV infection was a strong predictor of CKH. Similarly, the Gebregergish, (2015) study revealed that individuals with non-accepting attitudes towards HIV and those who did not know their HIV status were less likely to have comprehensive knowledge of HIV/AIDS. Strong individual risk perceptions influence adolescents' adoption of risk reduction strategies which may involve obtaining sexual health-related information and result in them being well informed.

**Wealth index/income level**

Wealth index or income level is a determinant of CKH, i.e. adolescents from wealthy families with a high amount of disposable income are more likely than those from low-income families to have comprehensive knowledge of HIV (Gebregergish, 2015; Khanal; 2013, Oljira, et al., 2013, Teshome,

2016, Zainiddinov and Habibov, 2016). The Teshome et al., (2016) quantitative study was carried out in Kenya, Burundi and Ethiopia and found that households with high disposable income had more CKH than a household with limited income. In Ethiopia, women in the poorer wealth index group, middle index, richer index and richest index (P<0.001) all had higher comprehensive knowledge of HIV/AIDS than the poorest wealth index. Furthermore, higher CKH was found in women of poorer, middle (P<0.001), richer, richest wealth categories than the poorest women in Kenya (p<0.001). Similarly, a quantitative study in Ethiopia found that adolescents from a middle or high family wealth index were more likely to have CKH compared to those from a low family wealth index (Oljira, 2013). Zainiddinov (2016) in line with (Teshome, 2016; Oljira, 2013) noted that the probability of knowing correct methods of preventing HIV/AIDS was higher among the rich women and lower among poor women when compared with the average. In support of the above, Khanal *et al's.* (2013) study revealed that Nepalese men were more likely to have poor knowledge of HIV if they were in the poorest quintile households. The above assertions could be linked to the fact that adolescents from families with high disposable income are more likely to have access to television and radio than their peers. Evidence has shown that these mass media aids influence CKH among adolescents (Gupta and Miltra, 1999).

#### 2.3.1.2 Community level factors

**Place of residence and region**

Geographical location and place of residence of adolescents affect their CKH (Oginni, et al., 2019; Teshome, 2016; Gebregergish, 2015; Khanal; 2013; Zainiddinov and Habibov, 2016). A study in Africa found that women who were from urban areas of Burundi and Ethiopia had a significantly higher knowledge of HIV/AIDS than women from rural areas of both Burundi and Ethiopia (Teshome et al., 2016). Similarly, Zainiddinov and Habibov (2016) noted in a study in Tajikistan that women residing in the Sogd, DRD, and GBAO regions were 53%, 41%, and 68% respectively less likely to know about ways of preventing transmission of HIV than their peers from Dushanbe. Also, Ochako *et al* (2013) argued that young women who were from urban areas were more than 2.8 times more likely to have CKH than their counterparts in rural areas. Khanal *et al.* (2011) in support of the above claim stated that young men were more likely to have poor CKH if they come from Eastern, Central and Western regions of Nepal. Likewise, the Gebregergish, (2015) study revealed that CKH was lower for rural young people than their urban counterparts. This disparity in CKH as a

result of adolescent place of residence could be attributed to poor access and lack of service availability. People who live in certain geographical regions may find it difficult accessing services due to distance, lack of transportation, poor road network and lack of information about existing services. Findings from a multivariate logistic regression analysis showed that adolescents' place of residence affects their comprehensive knowledge of HIV/AIDS (Yadav *et al.* 2015). A study in India revealed that individuals from the East, North East and central zone had comprehensive knowledge of HIV than other areas. The author argued that this is because the central zone is at the heart of the city with the presence of government parastatals which other areas do not have (Gupta and Miltra, 1999).

### 2.3.2 Determinants of contraceptive access and use among adolescents

#### 2.3.2.1 Individual and family level factors

**Education**

Adolescents' and young people's socio-economic background affect their knowledge and use of contraceptive services. Adolescent educational status is a strong determinant of use of family planning services (Amsalu-Felekeet et al., 2013, Bankole et al., 2015; Hall; et al., 2012; Kamal, 2012; Magadi and Curtis, 2003; Oginni et al., 2015, Bicetre, 2004). A study in the United States found that low and poor reproductive health services' use among adolescents and young women was associated with the level of education (Hall et al., 2012). Uneducated adolescents and young women were seen to have a lower rate of service use than educated adolescents. These differentials in service use as a result of education attainment mirrors the disproportionately adverse reproductive health outcomes among adolescents from low socio-economic backgrounds. Education has a strong interaction with adolescents' employment, income and overall socio-economic status thereby influencing sexual health outcomes for both males and females.

Similarly, a quantitative study in Kenya established that educational attainment affects contraceptive method choice and use. Use of injectables decreased with an increase in high education attainment while the use of a barrier method tends to increase with education (Magadi and Curtis, 2003). The willingness to use a contraceptive is more prevalent among adolescents with a high literacy level. Contraceptive use increases with an increase in education. The Oginni et al., (2015) study in Nigeria revealed that young women with primary education were more likely to

have an unmet need for family planning than those with no education. Women with unmet needs are those who want to stop or delay childbearing but are not using any method of contraception. Also, as expected, providing adolescents and young people with accurate sexual health information impacts on their use of contraceptives. A study in four African countries found that adolescents who had seen a demonstration of condom application and use and had received sex education, had correct knowledge of condom use as compared to their peers (Bankole et al., 2015). The study revealed that adolescent males who received sex education were 1.3-1.7 times more likely to know how to use condoms correctly than their peers who had not received sex education. This strongly justifies the reason why sex education should be promoted among adolescents.

**Age**

Studies have found that age is a strong predictor of adolescent access and use of family planning services (Bankole, et al., 2015, Hall, et al., 2012, Hargreaves, et al., 2010, Hendriksen, et al., 2007, Obare, et al., 2011; Oginni, et al., 2015). A quantitative study in the USA to investigate socio-demographic determinants of condom use among young adults aged 15-24 years. revealed that condom use and consistency of use decrease with increase in age (Chimbindi et al., 2010). Likewise, Hall et al., (2012) using a multivariate regression analysis found that age was a strong predictor of service use among young women in the USA. The probability of using the pill and to some extent injectables tend to decline with age (Magadi and Curtis, 2003).

On the contrary, a study in four African countries (Burkina Faso, Ghana, Malawi, and Uganda) found that young men aged 18-19 were 30-37% more likely to know how to correctly use condoms than younger adolescents 15-17 years of age. Young adolescents were less likely to have used a condom in their most recent sexual intercourse (Hendrikse et al., 2007). Less use of contraception among young adolescent girls and boys could better be linked to the fact that this group lack confidence and are less knowledgeable about available services. Also, a study in Kenya found that unmet needs for family planning was highest among young adolescent girls than the older group (Obare et al., 2011). This clearly explains why this group experience high negative sexual health outcomes and subsequent studies are needed to address it.

**Marital status**

Similarly, marital status is a determinant of contraceptive use among adolescents (Hargreaves, Morison et al., 2010; Hendriksen et al., 2007; Obare et al. 2011). Marrone et al. (2014) in a quantitative study in South Africa, revealed that young people who were married or were involved in any form of partnership were significantly less likely to have used a condom during their most recent intercourse (Hargreaves, 2010). The Obare et al (2011) study in Kenya observed that the proportion of unmarried adolescent girls currently using a modern method of contraception among those who had recent intercourse had increased from 20% in 1998 to 37% in 2003 but later declined to a level close to 1998 levels, while there had been a steady increase among married adolescents from 12% in 1998 to 15% in 2003 and 27% in 2008. However, Hergreaves (2010) found that currently married individuals were most likely to report condom use, although this was found not to be statistically significant. The study added that condom use was lower in spousal partnerships than non-spousal relationships. This could be attributed to the fact that as intercourse frequency and partnership duration increase, contraceptive use may drop. This may be the case if trust develops between partners or as the desire for pregnancy increases. Secondly, unmarried adolescents are more likely to face discriminatory attitudes from service providers, and some unmarried adolescents may tend to shy away from such services to avoid being seen to be sexually active. Oginni et al. (2015) found that women aged 25-49 were less likely to have an unmet need for spacing (Women with an unmet need for spacing are those who desire to postpone their next birth by a specified length of time and who do not currently use a contraceptive method) compared to those aged 15-19, and those currently married and who have ever been married were less likely to have an unmet need for spacing than those never married.

Moreover, studies have shown a strong association between gender and use of contraceptive among adolescents (Chimbindi et al., 2010, Hargreaves, et al., 2010, Oginni, et al., 2015). The study found that female adolescents were 40% less likely to use condoms consistently than males according to Chimbindi et al., (2010). Condom use was less commonly reported by female adolescents than their male counterparts (Hargreaves et al. 2010). The study added that males reported more frequent condom use during their last sexual encounter than females (Hargreaves et al., 2010).

**Mass media**

Mass and social media influence adolescents' and young people's use of sexual and reproductive health services (Bankole et al., 2015; Oginni et al., 2015; Olumide, 2016). Oginni et al. (2015) found that young women exposed to family planning messages were through mass media were less likely to have an unmet need for spacing than those not exposed. A study in Africa also confirmed that young men who were exposed to radio regularly in Burkina Faso and Uganda were also 1.4 and 1.5 times more likely to know how to correctly use condoms than those who had limited exposure. The same study in Burkina Faso, in contradiction, reported that adolescent males who read newspapers regularly were 43% less likely to have correct knowledge of condom use than their peers who do not read newspapers. A qualitative study in Nigeria disclosed that media technologies and reading novels influences an adolescent's knowledge and use of SRH services, especially on sexual health practices.

**Religion**

Religion plays a major role in adolescent use of services. In a study to determine the disparities in reproductive health service use among young women in the United States, religion was identified as one of the predictors of reproductive health service use (Hall et al., 2012). Another study revealed that Muslim women were the least receptive to contraceptive advice ($p<0.05$), although only 18% of the respondents were Muslims in this study (RAO, and Mathada, 2016). Ismal et al. (2015) asserted that parental (Amsalu et al., 2013; Meekers and Klein 2002) and social (Adih et al., 1999, Atelik, 2012) factors were found to be associated with higher levels of condom and contraceptive use. In Cameroon, adolescents who believe that their parents were in support of their use of condoms were 2.5 times more likely to report having ever used a condom than those who felt their parents were not supportive (Meekers and Klein 2002). Likewise, a quantitative study in Ghana among the youths found that young men who reported a high level of social support were 1.67 times more likely to use a condom than those who perceived limited social support (Adih et al., 1999). However, these findings cover only the boys' opinions, and girls' opinions were not represented. Individual cultural practices also affect their use of services. Chimbindi (2010) revealed that a number of partners, partner age difference, type of partner and having an older partner decreased likelihood ($p<0.01$) of ever using condoms. The Hall *et al.* (2012) study aligns with the Chimbindi (2010) study in so far as that number of partners affect SRH service use among young women.

**Risk perception**

Risk perception affects young people's knowledge and use of contraceptive services (Adih et al., 1999; Ngome et al. 2014; Meekers and Klein 2002). A study in Botswana to determine the use of condoms among adolescents found that consistent use of condoms among adolescents was associated with risk perception, i.e. being personally concerned about getting HIV (Ngome et al., 2012). The study added that self-efficacy was associated with adolescent use of a condom. A study in Ghana among youth revealed that higher personal risk and ability to convince a partner to use a contraceptive have strong determinants for the use of a condom (Adih et al., 1999). Despite focusing on urban young people, a study in Cameroon noted that adolescents' risk perception was seen to have an association with condom use. Adolescents who perceived themselves to be a risk of contracting HIV were 1.7 times and 2.0 times more likely to report the use of a condom (Meekers and Klein 2002).

**Wealth index**

Wealth index of household is a strong predictor of contraceptive use among married and unmarried adolescents both in developing and developed countries (Celik, and Esin, 2012; Chimbindi; et al., 2010; Kamal, 2012; Oginni et al., 2015; Salehi et al., 2014). Adolescents within high-income level households have a higher probability of affording their preferred contraceptive choice and are more likely to live in urban areas. Access and use of contraceptives are less limited these adolescents than to their peers from a lower socio-economic background who live in rural communities where access to a contraceptive is limited and culturally prohibited. The Chimbindi et al., (2010) study found that adolescent condom use and consistency of use were influenced by their socio-economic status. Those in a low socio-economic cadre tend to use contraception less than those at a high social, economic level. The Oginni et al., (2015) study in Nigeria among married and unmarried women showed an association between unmet needs for family planning and household wealth status. A study in the United States revealed that young women with more social resources had significant access to SRH services than those with fewer resources (Salehi et al., 2014). A related qualitative study in Turkey noted that the socio-economic level of the family affects the adolescent's use of SRH services (Çelik and Esin, 2012). A quantitative study examining the role of community-level factors in explaining geographical variations in modern contraceptive use in six African countries affirmed that wealth index in the community was an important

determinant of contraceptive use in Burkina Faso (Stephenson et al. 2007). Kaggwa et al. (2008) in a quantitative study in Mali found a similar association between odds of using contraceptives and wealth index. Similar findings among young women were recorded in low and middle-income countries. This study found that young women living in wealthier communities were more likely to be using a modern contraceptive method than those living in poor communities (Mutumba et al., 2018).

**Sex of Household head**

Sex of household head was significantly associated with contraceptive use. Palamulen (2017) investigated the trends and determinants of contraceptive use among female adolescents in Malawi. The study found that contraceptive use was higher (58%) among female adolescents residing in a male-headed household than those living in female-headed households. Conversely, research in the Benin Republic among sexually active women aged 15-45 by Dansou et al. (2017) found that women in households headed by females were more likely to use contraceptives, especially modern contraceptives, than those in a male-headed household.

#### 2.3.2.2 Community and other contextual-level factors

**Place of residence**

Adolescents' place of residence and geographical location influence their knowledge and use of contraceptives (Bankole, et al., 2015, Hall, et al., 2012, Magadi and Curtis, 2003; Obare, et al.,2011; Oginni et al., 2015; Marrone et al., 2014, Salehi et al., 2014). In a quantitative study in Kenya which aimed at understanding the use of contraceptives among adolescent girls, the study found that variations exist in contraceptives method choice due to the place of residence. Adolescent girls who reside in rural areas were less likely to use modern contraceptive methods (injections) than their counterparts in urban areas (Obare et al., 2011). The study added that adolescents of a low socio-economic background obtain their methods mostly from private facilities. However, this study focused on adolescent girls aged 15-19 in Kenya; meaning that the findings represent the opinion of female adolescents and not their male counterparts. In the United States, adolescents' and young women's disparities in the use of reproductive health services have a strong link with their place of birth (Hall et al., 2012).

**Region of residence**

Regional variation also affects contraceptive use and unmet needs for family planning. A study in Nigeria among married and sexually active unmarried women aged 15-49 found that women in Southern Nigeria were less likely to have an unmet need for spacing than those in the Northern region (Oginni et al., 2015). The use of injectables was associated with rural residence while the use of IUD was associated with the urban residence. People who live in Nairobi and the Easter part of the country were more likely to use the pill while use of injectables was highest in the Rift valley and Nyanza, Kenya (Magadi and Curtis 2003). Likewise, the Obare et al., (2011) study to determine adolescent contraceptive use in Kenya noted the substantial variation in trends in contraceptive method choice by place of residence. This is arguably due to availability, access, and information. Adolescents who were born or live in urban geographical areas were more likely to have adequate information and access to different contraceptives than those in rural areas. Similar findings in a study by Palamulen (2017) in Malawi showed that the region of residence was significantly related to the use of contraceptive.

Ejembi (2015) in a quantitative study explored the contextual factors that influence modern contraceptive use among women aged 15-49 in Nigeria. This study using a multilevel modelling approach found that region of residence, community level religion, community-level access to the facility were a significant predictor of contraceptive use. The study found that except the Southern Zone, women who live in other zones had lower odds of modern contraceptive use. Place of residence and poverty level in the community were not significantly associated with modern contraceptive use. However, it is worth noting here that this study focused on women aged 15-49 and the opinion expressed here does not reflect only that of adolescents.

**Community-level educational years**

Community-level educational years is a determinant of contraceptive use among adolescents. The Ngome and Odimegwu (2014) quantitative study to examine the influence of both individual, household and community variables influencing adolescent contraceptive use among non-pregnant adolescent women aged 15 to 19 years in Zimbabwe showed that living in a community with a higher mean number of school years for women was associated with adolescent women's lower odds of using a modern contraceptive method. The odds of using modern

contraceptives were also lower among young women residing in a community with a higher proportion of women with at least secondary education (odds ratio, 0.5). Similarly, Mutumba et al (2018) in a cross-sectional multi-country analysis examining the effect of community-level factors on modern contraceptive use among female youth in LMICs, showed that young women who live in communities with a higher education attainment of women were more likely to use contraceptives than their counterparts who live in communities with low educational attainment. Also, Stephenson et al. (2007) in a quantitative study confirmed similar association in Tanzania where years of education in the community was a significant predictor of contraceptive use.

**Community-level Media exposure messages**

Kaggwa et al., (2008) in a multilevel analysis study investigating the role of individual and community factors on contraceptive use among women in Mali. The study found that at the community level the odds of modern contraceptive use increased with the proportion of women who were exposed to family planning messages. However, this variable ceased to be significant when the individual and community-level factors were combined. This association of exposure to media messages was also noted in a study by Mutumba et al. (2018). The study found that mass media exposure was negatively associated with modern contraceptive use in the African region, the Americas and South East Asia but positively associated with modern contraceptive use in Europe and the Western Pacific region.

Other community-level factors identified to influence contraceptive use include societal stigma, religious belief in the community, and high community rates of unemployment. The Silumbwe et al. (2018) study further revealed other community-level factors that influence family planning (FP) practice in Zambia, such as myths, misconceptions, societal stigma, women's experience with contraceptive side effects, and negative traditional and religious beliefs in the community. In a quantitative study examining the role of community-level factors in explaining geographical variations in modern contraceptive use in six African countries, the study showed that in Malawi, participants who live in a predominantly Protestant community were more likely to use contraceptives compared with communities with a mixture of religions (Stephenson et al. 2007). According to the Grady et al., (1993) study, community characteristics associated with higher levels of contraceptive effectiveness were high rates of unemployment, elevated levels of religious

affiliation and high socioeconomic status. However, this study was among currently married white women in the United States.

#### 2.3.2.3 Facility/Institutional level factors

Some studies have argued that contraceptive service availability (Orji and Onwudiegwu, 2002; Magadi and Curtis, 2003) and providers' attitudes (Orji and Ownudiegwu, 2002) are predictors of adolescents' service use. A study in Nigeria found that young women's awareness of a method of contraception did not determine contraceptive use but rather that the use of services was strongly determined by proximity to the sources of family planning services (Orji and Onwudiegwu 2002). Availability was suggested to be the reason why the increased use of injectables as against intrauterine devices (IUD) among women of reproductive age in rural Kenya (Magadi and Curtis, 2003). The attitude of family planning providers was seen to affect adolescent use of services (Orji and Ownudiegwu, 2002). Silumbwe et al. (2018) in a study on the effect of health system barriers and enablers on family planning (FP) in Zambia found that proximity to healthcare facilities, preferred contraceptive methods out of stock, lack of policies facilitating contraceptive provision in schools, and undesirable provider attitudes were key institutional barriers affecting contraceptive use. This is because, in most settings like Nigeria, service providers often display a judgemental attitude towards adolescents. They sometimes lack the skills and knowledge to deliver sexual health services to an adolescent. This because it is considered a sensitive area and at times restricted by law to provide SRH services to adolescents.

## 2.4 Gaps/deficiencies in the literature

This review, apart from identifying the disparity in adolescents' and providers' perspectives on access and use of SRH information and services, has disclosed areas of further research on adolescent access and use of SRH services and its determinants. This is because only one study (Johnston *et al.* 2015) in the review looks at the perspective of adolescents and service providers together in a single study. However, this study was conducted in Queensland Australia. Apart from the regional and cultural differences, the study focused on the barriers adolescents face when accessing SRH services with limited focus on other areas of adolescent sexual health needs. Examples of such preferences are in terms of where and how to source information and services and whom they prefer to deliver services to, their views on sex education, abortion, STIs including

HIV/AIDS and contraceptive related issues. Secondly, the study integrated the opinions of both married and unmarried young people. This may not reflect the actual views of unmarried adolescents as experiences of both differ in sexual health issues. Also, it was not clear from this study what the characteristics were of the group of young people under examination such as whether the young people were in-school or out-of-school as they may not have the same experience in accessing services. Also, the study used an online survey to ascertain the opinion of young people in the study, which arguably is not appropriate to capture in detail the views of this group, resulting in less helpful for informing policies.

Furthermore, four studies (Bamgbala, 2006; Herbet 2013; Omobuwa, 2012; Temin, 1999) in the first section of the review were conducted in Nigeria. Apart from their methodological flaws as explained in the appraisal section, two studies (Bamgbala, 2006; Herbet 2013) looked at the private medical and family planning providers' perspectives on family planning in Nigeria. The studies were conducted in one out of 36 states in Nigeria, and the other two studies (Omobuwa, 2012; Temin, 1999) assessed the sexual health knowledge including HIV/AIDS and perception of adolescents. Both studies focused on in-school adolescents aged 15-20; meaning that out-of-school adolescents were excluded from the study. Participants in this study were predominantly Christians (76%) in a country where half of the population are Muslims; making the findings religiously biased. This review clearly shows that no single study in Nigeria has robustly and jointly explored the views and perceptions of adolescents and professionals using a mixed method approach on sexual and reproductive health issues.

Most of the studies in Nigeria (Bamgbala, 2006; Herbet 2013; Omobuwa, 2012; Temin, 1999) posited that young people preferred to access services through public or government-owned clinics, and that social media was their primary source of sexual health information. However, based on the review, no study has explored why they preferred public clinics and their experiences in using them, including mass media platforms (National call centre, my question database). Also, an additional study in Nigeria is needed because the youth-friendly features recommended in youth-friendly centres are those determined by international studies, which might not be appropriate to apply in Nigeria due to socio-cultural diversities between these countries or continents. No local study has explored youth friendly characteristics as perceived or viewed by adolescents in Nigeria.

In addition, all the studies identified in this review in relation to determinants of comprehensive adolescent knowledge of HIV/AIDS were done in East Africa (Ochako et al 2013; Oljira et al 2013; Teshome et al. 2016; Lwelamira et al 2012; Ciampa, et al., 2012; Sahile, et al., 2015) and Asia (Zainiddinov and Habibov, 2016; Khanal, 2013; Yadav, et al., 2015). No study in West Africa, let alone Nigeria, was identified at the time of this review that looked at the factors influencing comprehensive knowledge of HIV/AIDS among adolescents; making it imperative to consider a study in West Africa, more precisely Nigeria, which would address this gap. This is needed because Nigeria apart from being culturally diverse, is the most populous black nation in the world, as well as having the second highest HIV/AIDS burden in the world with an estimated 3.4 million people living with HIV/AIDS (NACA, 2015). These areas of study are essential in high HIV endemic countries as adolescents' chances of engaging in high-risk sexual behaviour increases significantly with lack of CKH (Lwelamira *et al*. 2012).

Lastly, concerning the determinants of adolescent access and use of sexual and reproductive health services, the review identified only two studies (Oginni et al., 2015; Orji and Onwudiegwu, 2002) that were conducted in Nigeria. Both studies focused on married and unmarried women of reproductive age 15-49. Orji and Onwudiegwu's (2002) study examined the determinants of contraceptive practice among women using a cross-sectional survey. The study took place in an urban area of the Igboya district in Osun state, Nigeria with only a sample-size of 500 women aged 15-49 and disregarded rural young women. Hence, the finding is arguably not a true representation and seeks to a greater extent the opinion of married women who are more experienced in reproductive health issues than the unmarried group. Also, the Oginni et al. (2015) study examined the trends and determinants of unmet needs for family planning among women of reproductive age 15-49 in Nigeria with limited focus on the knowledge, sources, and use of contraceptives among unmarried adolescents.

Therefore, considering the above gaps and limitations of the previous studies, the current study is poised to explore the views of unmarried adolescents aged 10-19 and service providers on access and use of SRH information and services in Nigeria. This is because no other study has used this approach to examine these issues. Secondly, previous studies on CKH and contraceptive use in Nigeria have not gone beyond the individual and family level factors to other interelated

contextual level factors that infleucne comprehensive knowledge of HIV/AIDS, as well as the use of contraceptives among unmarried adolescents in Nigeria.

## 2.5 Theoretical Framework

This study uses the Social Ecological Model (SEM) to explore the individual and contextual level factors that influence adolescents' use of SRH services in Nigeria. SEM is a theoretical model that helps gain an understanding of the complex interactive effects of individual and environmental factors that shape behaviour. The concept of SEM focuses on the multiple levels of influence and the idea that behaviours are shaped by the social environment as hypothesised in this study. The idea of SEM emerged from the work of previous scholars like Bronfenbrenner's ecological theory (1979); Kenneth Mc Leroy's Ecological model of Health Behaviour (1988) and the Daniel Stokols Social Ecological Model of Health Promotion (1992; 2003). Bronfenbrenner's initial work (1974, 1977, 1979) provided a framework for to understanding the multifaceted and interactive effects of personal and environmental factors that determine a person's behaviour and development (Bronfenbrenner, 1994). The theory holds that a person encounters different environmental factors throughout his/her lifespan that may influence his/her behaviour in varying degrees. The Ecological model, although it was initially developed to understand the factors influencing child behaviour, has been adopted in other areas, such as Public Health, Psychology and Sociology (Tudge et al., 2009).

The choice of SEM rather than other models, such as the Health Belief Model, the Theory of Reasoned Action and Social Cognitive Theory and the Mosley and Chen framework, the essentialist theory, and the biosocial view theory is premised on the fact that SEM recognises that individual health behaviours are influenced at different levels (individual, family, community and societal) within a complex environment (Green and Kreuter, 2005). While the Health Belief Model, Social Cognitive Theory and Theory of Reasoned Action focus on individual level effects on health behaviour, Mosley and Chen's framework focuses on determinants of child survival in developing countries and not the SRH predictors (Mosley and Chen, 1984). With reference to the Essentialist theory and Biosocial view theory, the former focuses on the crucial role of genetics in hormones and other aspects of biological function in determining behaviour while the latter acknowledges both the influence of biological and social forces in shaping behaviour. Both theories are not

appropriate to the current study as it does not recognise the contextual factors that influence behaviour (Moore and Rosenthal, 2006); making is unsuitable for this study.

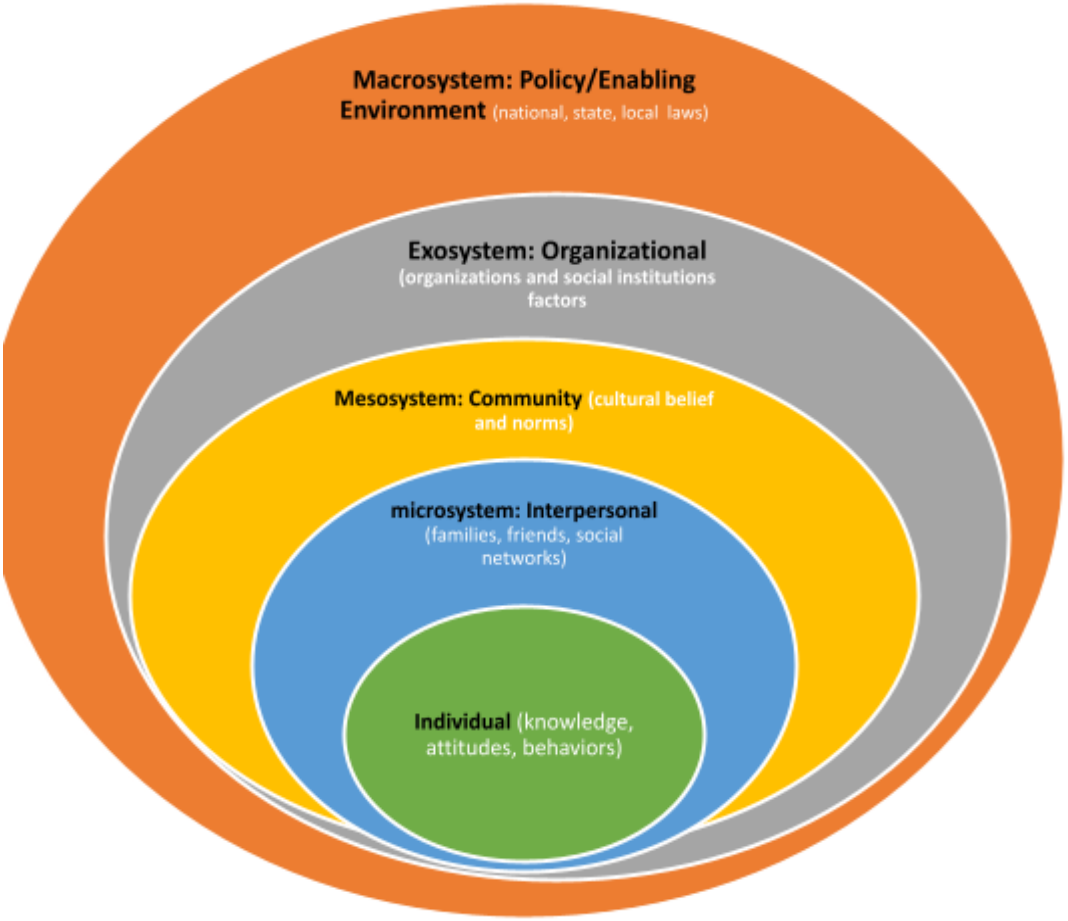



Figure 2.3: Theoretical Framework-Social Ecological Model

Source: Adapted from the Centres for Disease Control and Prevention 2015.

SEM framework believes that since individuals exist in a social-ecological system, changing individual-level behaviours and creating new social norms requires removing blockages that prevent change at the family, community, societal or state levels. This model views adolescent access and use of sexual health services as the outcome of interaction among many factors (family, community and societal) and not just the individual factors (Stokolls, 1996; Elder et al., 2007). Other studies (Mutumba 2018; Stephenson 2005; Grandy 1993 etc.) have applied the SEM principle in examining the determinants of contraceptive use among adolescents. One of the strengths of SEM is the possibility of multilevel analysis of individual, community and social factors that influence SRH use among adolescents, as shown by Reifsnider et al., (2005), although the

incorporation of multilevel analysis could be difficult and complex if not properly designed and articulated.

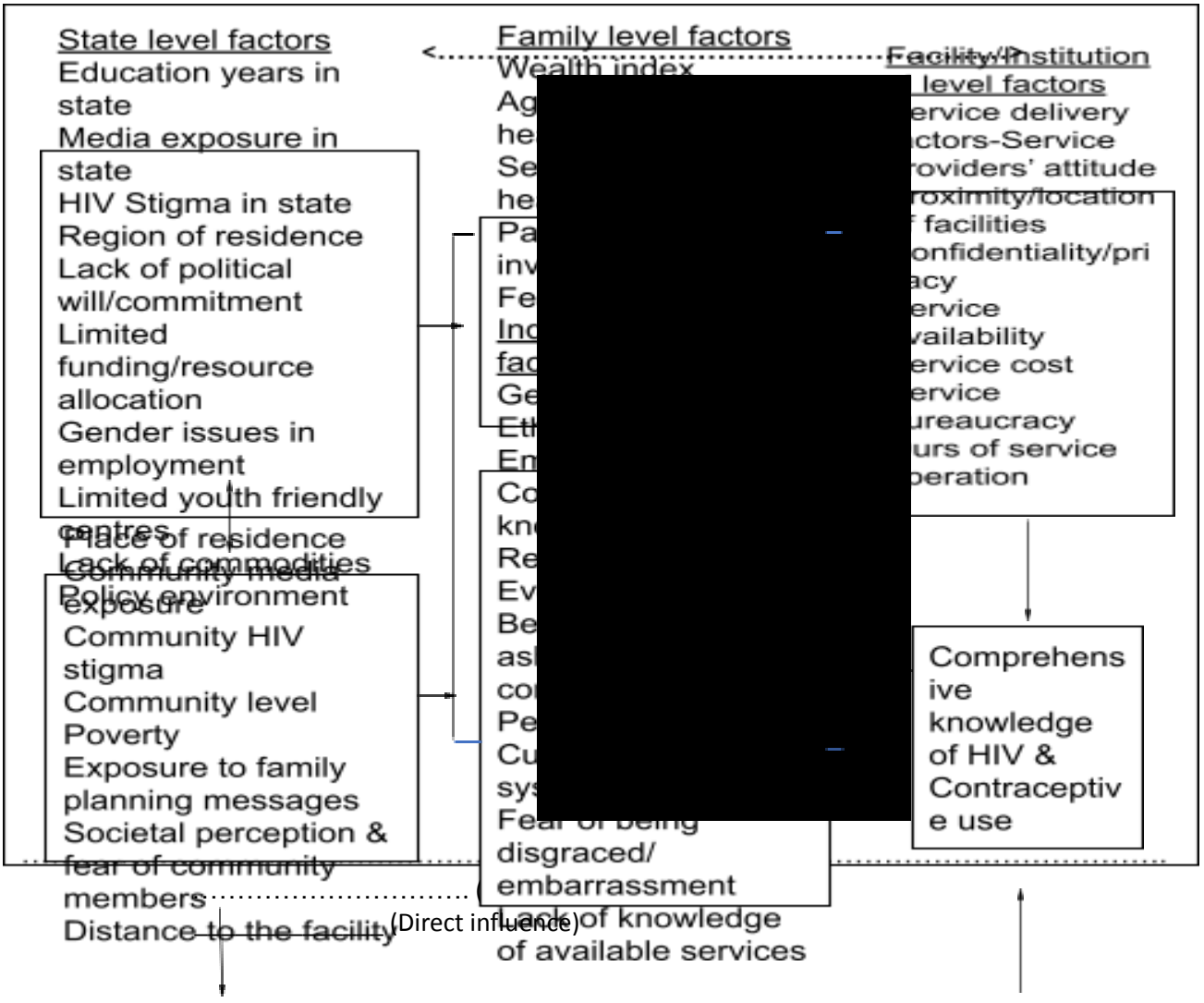
In additional to the SEM theoretical model, which helps to gain broader understanding of the interconnected factors that influence adolescents sexual and reproductive health behaviour, the qualitative strand of the study was supported by Foucault theory of sexuality. I came across this theory when I was thinking about the theoretical context for the qualitative findings. This theory was adopted due to Foucault application of social constructionist ideas in understanding the concept of sexuality and sexual behaviour (Foucault, 1978). It emphasises social and cultural influences as a decisive factor in explaining human sexual behaviour (Foucault, 1978; 1983). Specifically, the theory helps in understanding the views and perceptions of service providers on adolescents' sexuality in Nigeria, and the underlying factors that influence services providers decision in providing SRH services to adolescents. See more details of how the qualitative findings support the theory in section in section 8.5.2.

## 2.6 Conceptual Framework

Figure 2.4 below provides a conceptual framework for the analysis of the determinants of comprehensive knowledge of HIV and the use of contraceptives among adolescents. This is with the recognition that the utilisation of SRH services, such as use of contraception being dependent on contextual factors, which in turn influences individual behaviour (Salazar et al. 2009). What is important in this framework is the acknowledgement that in addition to individual-level factors, adolescents' use of sexual health services is influenced by the family, community, institutional and state-level factors. The use of sexual health services is influenced by individual age, gender, marital status, religion, education, contraceptive knowledge and the individual having ever been tested for HIV (Hall; et al., 2012; Kamal, 2012; Bicetre, 2004; Obare et al., 2011). Secondly, individual-level factors are influenced by their family circumstances, such as wealth index, having HIV patients in the family, the age of household head and sex of household head (Chimbindi; *et al*., 2010; Salehi *et al.,* 2014; Palamulen, 2017).

Third, these individual and family level factors are believed to be influenced by the community where they live. The prevailing cultural and general belief in the community can affect family and individual access and use of sexual health services. The community-level factors in this study

include place of residence, poverty level, unemployment level in the community and community-level stigma (Bankole *et al.,* 2015; Oginni *et al.,* 2015). Lastly, the policies and political structure at the societal and state/regional level can influence sexual health service availability and in turn affect the individual usage of service (Orji and Onwudiegwu, 2002). In a Federal system such as Nigeria with a high level of decentralisation, it is reasonable to think in terms of variations in health policies and priorities across the states and regions. For instance, a policy at the national level requires all states to implement the Family Life HIV Education (FLHE). However, the programme evaluation shows variations in implementation across the 36 states and zones. It was reported that there were more FLHE activities in the South than in the North of Nigeria (Udegbe *et al.,* 2015). This will influence the knowledge level of sexual health services among adolescents in different states.



_____ (Direct influence)
……. (Indirect influence)

Figure 2.4: Conceptual Framework showing the relationship between the explanatory variables and outcome variables (Literature informed)

However, it is worth noting that while the factors that influence both outcomes (contraceptive use and CKH) may be similar, their pathways may also vary due to where the services are delivered, who delivers them and the stigma around each outcome. For example, the delivery of HIV education occurs mainly via the school, media and community outreaches, while contraceptive services are offered at the health facility/private clinics. Also, the stigma surrounding non-marital sexual activity in the community may influence contraceptive use by adolescents (Chandra-Mauli et al., 2017) and delivery by providers, however, it may not necessarily impact on their CKH as both occur at different settings and delivered differently.

State-level factors such as policies and resource allocation may vary across the two outcomes. For example, the government commitment and resource allocation to increase CKH among adolescent in order to decrease the risk of HIV/AIDS infection may be stronger and higher compared to educating adolescents on contraceptive use as this is a contentious area in Nigeria and is barely prioritised. Also, the Family Life and HIV Education (FLHE) may increase the knowledge or sources of contraceptive among adolescents, but it may however, not improve contraceptive use among this group due to restricted policies to make contraceptives available to adolescents and service providers attitude. For example, knowledge of modern contraceptive methods among sexually active unmarried women was 98%, while only 28% sexually active unmarried women were using modern contraceptive in Nigeria (NDHS, 2018).

Finally, facility and family-level factors such as service providers attitude may influence both outcomes differently. Service providers and parents are more open to discuss HIV/AIDS issues with adolescents than contraceptive matters due to their personal beliefs and biases, cultural and religious factors (Chandra-Mauli et al., 2017). While services charge (cost) may hinder adolescents from accessing contraceptive, it may not influence their access to CKH as HIV education is provided free of charge via the media, in schools and community outreaches.

## 2.7 Research questions

The gaps in the literature led to the formulation of the research questions below:

i. What are the individual, community and state level factors that influence unmarried adolescents' comprehensive knowledge of HIV/AIDS in Nigeria?

ii. To what extent do the individual, community and state level factors influence unmarried adolescent use of contraceptive services in Nigeria?

iii. To what extent do contraceptive use and CKH vary among unmarried adolescents in the same communities and states in Nigeria?

iv. What are the views of service providers on adolescent access and use of sexual and reproductive health services in Nigeria?

v. What are the perceptions of adolescent boys and girls on access and use of sexual and reproductive health services?

## 2.8 Conclusion

Both sections of the literature review have critiqued and summarised what is already known. It has given an up-to-date presentation of the knowledge on what has been done previously on the determinants of adolescents' sexual and reproductive health; revealing the views held by adolescents and service providers regarding adolescent access and use of sexual and reproductive health information and services. The review shows the perspective of adolescents and providers on a key range of sexual and reproductive health issues and the complexities of factors that affect adolescent access and use of sexual health services. It provides empirical evidence on critical hindrances and markers of adolescent access to sexual and reproductive health services and also the socio-economic and demographic factors that influence adolescent use of services. The review in addition to examining what is already known about the subject area has also helped to identify the need to explore the determinants of SRH service use among unmarried adolescents aged 15-19 in Nigeria and to assess whether their views in terms of access and use of SRH services differ

from providers of the services. The next chapter provides a detailed account of the methodology and method for addressing the above gaps.

# Chapter 3: Research methodology

## 3.1 Introduction

This study adopts a mixed-method approach examining the determinants of adolescents' access to and use of SRH services in Nigeria. Mixed-methods research has emerged as an alternative to qualitative and quantitative traditions in previous decades (Teddlie and Tashakkori, 2009). It is regarded as a third research paradigm (Johnson and Onwuegbuzie, 2004), or methodological movement (Teddlie and Tashakkori, 2003). This chapter provides a detailed account of the methodological procedure and establishes the ontological and epistemological position of the study. It describes the design used and explains the instrument for data collection, analysis, and the ethical processes as well as the extent to which rigour was ensured during the research process.

## 3.2 Research methodology

Traditionally, in Health and Social Sciences, there are three methodological approaches; quantitative, qualitative and mixed methods (Teddlie and Tashakkori, 2009). The quantitatively oriented movement works within the positivist paradigm and is primarily concerned with the numerical data and the various analyses of it. The qualitative oriented movement works within the constructivist paradigm and mainly focuses on narrative data and analysis. Finally, the mixed methodologist works mostly within the pragmatist paradigm, and concerns both narrative and numerical data, and their analysis (Teddlie and Tashakkori, 2009). However, the current study focuses on the mixed methodologist paradigm. In this paradigm, both the quantitative and qualitative (Quant+Qual) research methods, approaches and techniques are used (Johnson and Onwuegbuzie, 2013). Wisdom and Creswell (2013) refer to it as a growing methodology of research that advances the systematic integration of quantitative and qualitative data within a single investigation or inquiry. The above definition explains to a certain extent what a mixed-method approach is; however, Bulsara (2010) gave a more interesting description that better fits with the purpose of this study. According to Bursara (2010); a mixed-method approach is a procedure for collecting, analysing and integrating both qualitative and quantitative data at a certain stage of the research process within a single study to gain a better understanding of the

research problem. The premise for mixing both are grounded in the fact that neither quantitative nor qualitative approaches on their own are sufficient to address the research problem. When mixed, they complement each other and allow for more robust analysis, taking advantage of the strengths of each approach (Creswell and Plano Clark, 2011; Tashakkori and Teddlie, 1998).

## 3.3 The philosophical/theoretical underpinning research method

Different philosophical assumptions have been developed over the years to give a better explanation of what constitutes valid knowledge and how we can obtain it (epistemology), as well as what constitutes reality and how we can understand existence (ontology) (Teddlie and Tashakkori, 2009). As a result, two traditional paradigms were established: Positivist and Constructivist (Lincoln and Guba, 1985). Ontologically, positivists believe that there is a single reality, whereas constructivists believe that there are multiple constructed realities. Epistemologically, positivists believe that the knower and the known are independent, whereas constructivist believes that the knower and what is known are inseparable (Teddlie and Tashakkori, 2009). Qualitative research is based on interpretivism, constructivism, and inductivism (Sumner, 2006). Its focus is to explore the subjective meaning through which people see and interpret their world and how reality is constructed in a particular context. While the quantitative method is based on a positivist paradigm through deductivism, believing that observable evidence is the only form of defensible scientific findings, those who take an interpretivist view/approach believe reality is socially constructed. Epistemological debate exists about the relative qualities of inductive and deductive; an inductive approach looks for patterns and associations derived from observations of the world whereas a deductive approach generates propositions and hypotheses theoretically through a logically derived process.

However, this discussion is not about the quantitative and qualitative philosophical traditions but rather the philosophical paradigm that governs a mixed-method study. Mixed methods research is often associated with pragmatic philosophical orientation (Biesta and Burbules 2003; Johnson and Onwuegbuuzie, 2004; Tashakkori and Teddlie, 1998) and transformative perspective (Mertens, 2003). Although both paradigms have some characteristics that are quite divergent, the former focuses on the consequences of research on the primary importance of the question asked rather than on the methods and the use of multiple approaches of data collection to inform the problem under study while the latter considers the intersections of individual identity with social

constructions of difference (Mertens et al., 2010). Thus, this study adopts pragmatism as the philosophical paradigm because pragmatists believe that decisions regarding the use of either or both quantitative and qualitative methods depend on the current statement of research questions and the ongoing phase of the inductive-deductive research cycle (Tashakkori and Teddlie, 2003a). It is believed that research on any given question falls somewhere within the inductive-deductive research cycle. The focus of pragmatism is on the consequences of research, on the primary importance of the question asked, rather than on the method and the use of multiple approaches of data collection to inform the problems under study. Hence, it is pluralistic and oriented towards what works in practice (Creswell and Clark, 2011). Researchers in this paradigm claim that the only way we can acquire knowledge is through the combination of action and reflection.

The rationale for the pragmatic stance for mixed methods lies in its response to the traditional epistemological stances that purport issues of paradigmatic incommensurability when conducting a mixed-methods inquiry (Greene, 2008). Although the pragmatic stance is at odds with the traditional a priori assumption of incommensurability, it does not fully eschew the philosophical traditions. Rather, the pragmatic stance positions philosophical traditions and multiple perspectives in the service of the inquiry problem at hand. Because of its epistemological and methodological flexibility, the popularity of and potential for pragmatism to become the paradigm of choice for mixed methods inquiry comes as no surprise (Greene, 2008).

## 3.4 Research design/approach

There are four major types of mixed method designs: Triangulation, Embedded, Exploratory and Explanatory (Creswell 2003). Triangulation is a single-phase design where both qualitative and quantitative run concurrently within the same time frame with equal weight (Creswell and Clark 2003). In embedded single-phase design, one data set provides a supportive role in a study based purely on other data type. E.g. the qualitative strand is added to enhance the quantitative strand vice versa. The design is based on the premise that a single data set is insufficient. In addition, the exploratory design is a two-phase design where the result of the first method (qualitative) helps to develop the second method (quantitative) and vice versa. This design is appropriate where the phenomenon of interest is not well known or there is no principle guiding theory. Finally, the last design is an explanatory design which this study adopts. This is a two-phase mixed method design where the qualitative data helps to explain the quantitative data. This study starts with the

collection and analysis of quantitative data, which is followed by the collection of qualitative data, thus, making the former (Triangulation and embedded) inappropriate for the study. This design has two variants: The follow-up explanations model and the participant selection model. The former focuses on more examination of the results while the latter focuses on the appropriateness of participants to be selected. However, this study adopts the former on the assertion that this design would help the quantitative result to be further examined and explained using the qualitative data.

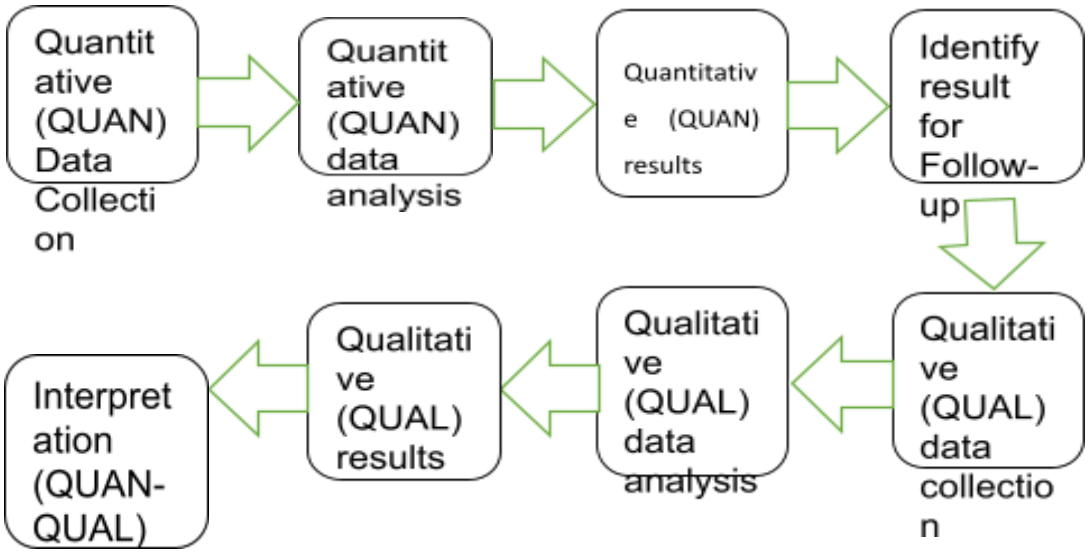



Figure 3.1: Explanatory Sequential design

## 3.5 Research methods

Scholars occasionally use the term methodology and method interchangeably. The former refers to the philosophy, and the latter refers to technical procedures applied to conduct research (McGregor and Murnane, 2010). Succinctly put, methodology refers to how each of logic, reality, values and what counts as knowledge inform research. On the other hand, methods are the techniques and procedures followed in conducting research and are determined by the methodology (i.e., sampling, data collection, data analysis and results reporting (McGregor and Murnane, 2010). This section is discussed in two parts (The quantitative and qualitative components) to distinguish it from the study methods.

### 3.5.1 Quantitative component

The quantitative component of the study is based on secondary analysis using the Nigeria Demographic Health Survey (NDHS) data of 2003, 2008 and 2013. These three datasets were used in order to measure the trends and changes over time in comprehensive knowledge of HIV and contraceptive use among adolescents in Nigeria, and to have a reasonable sample size for sub-group analysis. The NDHS are nationally-representative household surveys that provide data for a wide range of population health monitoring indicators. The NDHS provides up-to-date information on background/demographic characteristics of the studied participants. Specifically, information is collected on family planning methods, awareness, attitudes and comprehensive knowledge of HIV/AIDS, as well as maternal health service use. The NDHS focuses on women and men aged 15-49 in randomly selected households across Nigeria. However, the current study focuses on male and female adolescents aged 10-19 who are unmarried. The quantitative analysis examined only unmarried adolescents aged 15-19, while the qualitative component covered unmarried both young (10-14) and older (15-19) adolescents. This is because the NDHS data did not include younger adolescents aged 10-14, which is one of the limitations of using the dataset.

#### 3.5.1.1 Sampling process of the secondary data

The sampling frame used for the NDHS consists of lists of enumeration areas (EAs). These lists were provided by the National Population Commission (NPC) and prepared for the 2006 Population Census of the Federal Republic of Nigeria. The sampling process for the NDHS 2003; 2008 and 2013 was the same. The sample for the NDHS carried out in each of these three years was a stratified sample, selected separately in three stages from the sampling frame as mentioned above. Each stage was stratified into rural and urban areas.

For example, in 2013, 893 localities were selected with probability proportional to the size and with independent selection in each sampling stratum in the first stage. In the second stage, one EA was randomly selected and in total, 904 EAs were selected (NDHS, 2013). This was followed with a household listing exercise for the selected EAs. In the third stage of selection, a fixed number of 45 households were selected in every urban and rural cluster through equal probability systematic sampling based on the household listing. The sample allocation features an equal size allocation with small adjustments. Among the 904 clusters, 372 were in urban areas, and 532 were in rural

areas. The total number of households sampled was 40,680; i.e. 16,740 from urban areas and 23,940 from rural areas (The detailed account of the household listing and mapping exercise is provided in the NDHS 2013 report (Nigeria Demographic Health Survey, 2013).

#### 3.5.1.2 Sample size and Response rates of the secondary data

In 2013, 2008 and 2003, a common set of questionnaires was used to interview randomly selected participants. A total of 38, 522, 34,070 and 7225 participants were interviewed in 2013, 2008 and 2003 respectively, with a response rate of 98-99%. For each of the surveys carried out, the percentage of people who responded to the interview were slightly lower in urban areas than in rural areas. Among the respondents interviewed in 2013, 11,439 participants were between age 15-19, of which 7,820 were girls, and 3,619 were boys. Unmarried adolescents aged 15-19 consisted of 5,505 boys and 3571 for girls. Similarly, in 2008, amongst the respondents interviewed, 9,064 were within the age range of 15-19 of which 6493 were girls, and 2,571 were boys. Unmarried adolescents aged 15-19 consisted of 4537 girls and 2542 boys. Finally, in 2003, amongst the respondents interviewed, 2,169 were within the age range 15-19 of which 1,716 were girls, and 453 were boys. Unmarried adolescents aged 15-19 consisted of 1240 girls and 448 boys. Overall, a total sample size of 6664 and 11591 for male and female adolescents collected from 365, 795 and 904 clusters in 2003, 2008 and 2013 respectively, were included in the analyses.

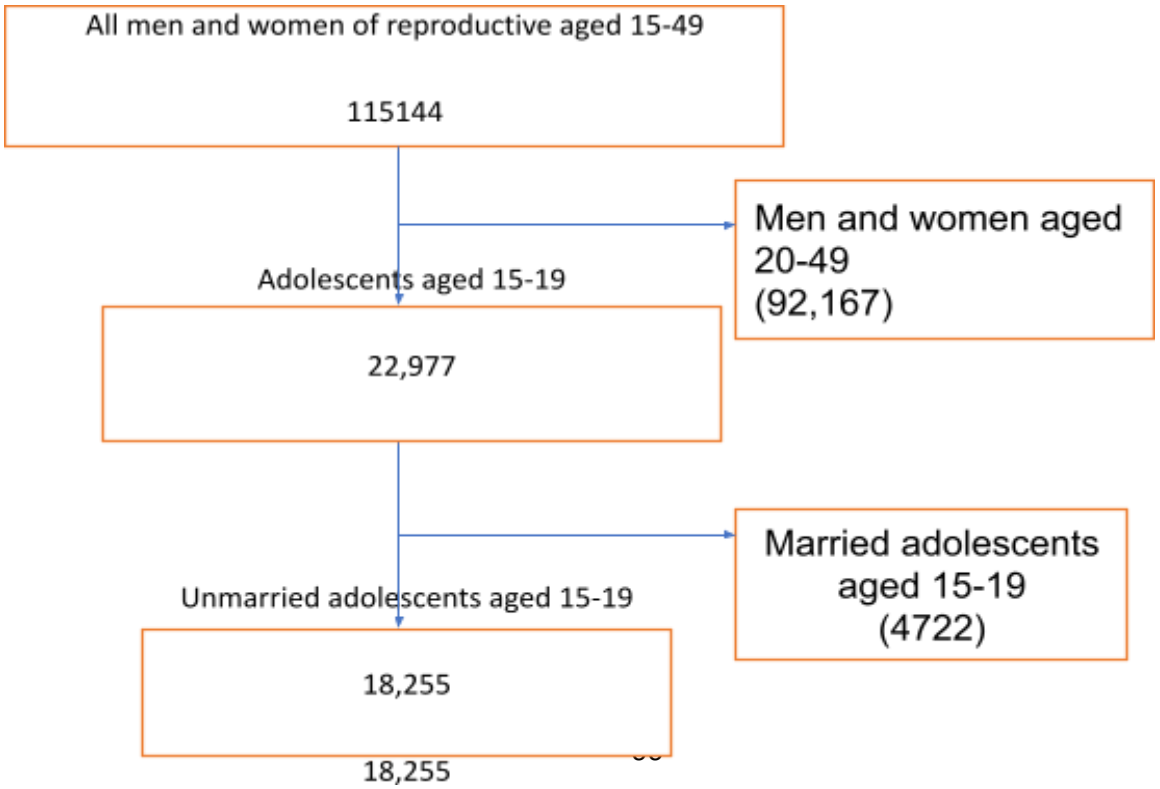


Figure 3.2: Sample derivation flow chart

#### 3.5.1.3 Study variables (dependent and independent)

The dependent variables examined in this study were:

a. The dependent variable (CKH) is defined as knowledge of the two correct methods of preventing HIV and three local misconceptions about HIV. To ascertain the level of CKH among adolescents, each participant was asked the following, the responses yes/no/I don't know:

1. Can people reduce their chance of getting the AIDS virus by using a condom every time they have sex?
2. Can people reduce their chance of getting the AIDS virus by having just one uninfected sex partner who has no other sex partners?
3. Is it possible for a healthy-looking person to have the AIDS virus?
4. Can people get the AIDS virus from mosquito bites?
5. Can people get the AIDS virus by sharing food with a person who has AIDS? Source: NDHS, 2013 questionnaire).

The dependent variable "CKH" (Coded as V751) was computed by summing up responses of participants who said "Yes" to Q1, 2 &3 and "No" to Q4 and 5. Hence, a dichotomous variable of having CKH or not was created. (Yes=1 and No=0). Only respondents who answered correctly in all five prompted questions were considered to have comprehensive knowledge of HIV. The definition of CKH used in this study is consistent with other studies in SSA (Oginni, et al., 2017; Ochako et al., 2013; Oljira et al. 2013; Teshome et al. 2016) and Asia (Zainiddinov and Habibov, 2016; Khanal, 2013; Yadav, et al., 2015). Having CKH cannot only help in ending stigma and discrimination of infected and affected persons (Ochako et al., 2013) but will help adolescent and young people adopt safer sexual behaviour, avoid risk thereby minimising HIV infection and increase use of contraceptives like condom (UNAIDS and WHO, 2013). A study among women living in rural Ethiopia found that higher knowledge of HIV was associated with more self-efficacy for condom use and more perceived vulnerability to HIV infection (Bogale et al., 2011).

b. The dependent variable (contraceptive use) is defined as current use of any method of contraceptives (Modern method, traditional method, or a folkloric method). Current contraceptive use was dichotomous, denoting users and nonusers of contraceptive methods by grouping non-users of contraceptive as “0” and those who have currently used any method (Modern method, traditional method, or a folkloric method) as “1”. (No=0 and Yes=1).

**Definition of methods:** The modern method includes: Pill, IUD, Injections, Diaphragm, Condom, Female Sterilization, Male Sterilization, Implants, female condom, Foam/Jelly and lactational amenorrhea. **The traditional methods** explicitly include: Periodic Abstinence (Rhythm), Withdrawal, and Abstinence and finally **Folkloric methods** are the category "other" which included the use of herbs, amulets, gris-gris.

The independent variables included in this study were:

**Individual and Family level variables**

**Gender:** This variable was used to assess the differences in CKH and contraceptive use between male and female adolescents. This is a categorical variable coded as 1=male and 2=female

**Age:** This is the single year age of respondents, which was categorised into two groups; 1=15-17 and 2=18-19. The categories in ages were chosen because in Nigeria the Child’s Rights Act 2003 defines a child as one who is below the age of eighteen years. Making it reasonable to separate older adolescents (aged 18-19) from younger adolescents (aged 15-17) as their experiences may differ.

**Ethnicity:** This is a self-reported ethnic group at the time of the survey. The variable compares the difference in CKH and contraceptive use based on respondents’ ethnic group. The NDHS classified this variable into 398 ethnic groups. However, this variable was recoded into four categories representing the predominant three ethnic groups in Nigeria (Hausa; Igbo; Yoruba and Others).

**Education:** This variable measures the respondents’ highest level of education at the time of the survey. It is an important variable to assess the socio-economic status of the individuals. This variable was originally coded into four categories (no education, primary, secondary and tertiary education). However, due to the limited sample size for the tertiary category, the variable was recoded into 3 categories (No education, Primary, and Secondary and tertiary).

**Employment:** This variable measures the employment status of the respondent. This variable is used to assess the effect of economic independence on contraceptive use and CKH. It is a binary measure coded as 1= employed and 0=Unemployed.

**Ever tested for HIV:** Adolescents aged 15-19 who have ever been tested for HIV/AIDS before the survey. This variable was used to measure the risk perception of adolescents and its influence in using both contraceptives and CKH. Although, while it is sensible to think that CKH could also influence HIV testing, however, limited studies exist that have reported the influence of CKH on HIV testing but rather the opposite (Wang et al., 2012). Hence, the reason ever tested for HIV was considered as an explanatory variable in this study. This variable is a binary measure coded as 1=Yes and 0=No.

**Knows someone who has died of or has AIDS**: This is a dichotomous variable that assesses adolescents aged 15-19 who know someone who has died of or has AIDS. The variable is a binary measure coded as 1=Yes and 0=No

**Contraceptive knowledge:** This variable measures an adolescent's knowledge of at least one method of contraception. It measures the influence of contraceptive knowledge on contraceptive use.

**Religion:** This is self-reported religious affiliation of the respondents. It is a categorical variable that measures the influence of religious affiliation on adolescents´ use of contraceptives and CKH. The variable was recoded into four categories (Catholics, Christians, Islam and others).

**Age of household head:** This variable was used to predict the age of the household head at the time of the survey. This variable was used to assess whether respondents who live in a youth headed household (Less than 25years) behaves differently from those in an adult headed household (25 years and above) in accessing health services. The variable is recoded into four categories (15-24, 25-39, 40-59 and 60 and above).

**Sex of household head:** This variable was used to determine the sex of the household head at the time of the survey. This is with the assumption that women who are household heads may be more autonomous and have more control over resources. Also, Nigeria being a patriarchal society, this variable will help to determine the effect of this on adolescents´ use of contraception and CKH.

**Wealth index:** This variable is a measure of the household standard of living. This variable was constructed by the DHS using the principal components based on assets in a household, such as a household with television or access to sanitation facilities. The households are grouped into five wealth quantiles (Poorest, Poorer, Middle, Richer and Richest). This variable was used to show the relationship between household income or wealth, and comprehensive knowledge of HIV and the use of contraceptive among adolescents.

**Community and state level variables**

The only contextual-level factors captured during the survey were place of residence and region of residence. Other contextual-level factors used in this study were derived from individual level measures in the overall sample as it was not available in the NDHS data. The low, mid and high are used for the categories to denote those who fall in the lower category, middle category and higher category of the measured outcome.

**Community Poverty level**: This variable measures the prevalence of poverty in the community. It was derived from the wealth index variable, where the poorest, poorer and middle index households were classified as being in poverty while those in richer and richest households were classified as being above the poverty line. This decision was underpinned by the data that showed that in 2010, over 60.9% of Nigerians live below the poverty line (Below $1.90 in a day) (United Nations, 2017; World Bank, 2015). Respondents in the poorest, poorer and middle household quintiles were regarded as being in poverty as they made up 59.9% of the total population, which is within the 60.9% threshold by the World Bank while those in the richer and richest household quintiles were grouped as being above the poverty line (40.1%). Hence, a dichotomous variable; poverty level Yes=1 and 0=No). This variable was further aggregated (Mean) by cluster and ranked into 3 categories (Low, Mid and High).

**Community-level Stigma:** This is a composite variable derived the following four questions from the NDHS: 1. Are you willing to care for a family member with HIV in your home? 2. Would you buy fresh vegetables from a shopkeeper with HIV? 3. Should a female teacher with HIV who is not sick be allowed to continue teaching? 4. Would you keep it secret that a family member is HIV-positive? (NDHS, 2013). HIV stigma was computed by summing up responses of participants who said Yes to Q4 and No to Q1, 2 and 3. Hence a dichotomous variable for HIV stigma was

created (Yes=1 and No=0). This variable was further aggregated (Mean) by cluster and ranked into 3 (Low, Mid and High).

**Community place of residence**

This variable measure deals with whether the respondent resides in a rural or urban area. The variable measures the difference between urban and rural dwellers in the use of contraceptive and CKH. This variable was coded as 1= Urban and 2=Rural. This variable was further aggregated (Mean) by cluster and ranked into 3 (Low, Mid and High).

**Family planning (FP) message exposure in the community:** This variable measured the proportion of individuals at the community level who were exposed to FP messages. This variable was derived from three questions: Heard about family planning on radio in last few months, heard about family planning on TV in last few months and heard about family planning in a newspaper in last few months. Respondents who answered yes to the 3 questions were regarded as being exposed to FP messages and were coded as Yes, whereas others were coded No. This variable was further aggregated (Mean) by cluster and ranked into 3 categorical variables (Low, Mid and High).

**Community unemployment level:** This variable was used to assess the effect of community unemployment on CKH and Contraceptive use. It was a binary measure coded as 1= unemployed and 0=employed. This variable was further aggregated (Mean) and ranked into 3 categories (Low, Mid and High).

**State level media exposure:** This variable measured at the proportion of individuals who were exposed to mass media messages at the state level. This variable was derived from three questions: The frequency of watching TV, reading the newspaper and listening to the radio. Each question was categorised into 0=Not at all, 1= Less than once a week, 2= At least once a week, 3=Almost every day. The responses were further recoded into 0=0 (No) 1 through 3=1 (Yes). State level exposure to media was computed by summing up responses of participants who said Yes to the recoded variable. Hence a dichotomous variable was created (Yes=1 and No=0). This variable was further aggregated (Mean) by state and ranked into 3 categories (Low, Mid and High).

**State Stigma level:** This variable measures the proportion of individuals at the state level who have a stigmatising attitude towards a person with HIV/AIDS. The derivation and categorisation of this variable were the same as the community stigma level variable explained above.

**Educational years in the state:** This variable measures the proportion of individual highest years of education completed at each level (primary, secondary and tertiary) in the state. This variable is a continuous variable aggregated by state and ranked into 3 categories: low, mid and high educational years.

**Region:** This variable measures the region in which the respondent was interviewed. The region was coded into 6 categorical variables (North East; North Central; North West; South East; South West and South-South).

Table 3.1: Description of variables used in the analysis

| Variables | Coding |
|---|---|
| Outcome variables | |
| Comprehensive Knowledge of HIV | Comprehensive knowledge of HIV coded as 1=Yes and 0=No |
| Contraceptive use | Contraceptive use coded as 1=Yes and 0=No |
| Individual-level variables | |
| Year | Codes as 1=2003, 2=2008 and 3=2013 |
| Gender | 1=male and 2=female |
| Age | Respondent's age coded as 1=15-17; 2 =18-19 |
| Ethnicity | Ethnicity coded as 1=Hausa; 2=Igbo; 3=Yoruba and 4= Others |
| Education | Level of educational level attained 0=No education; 1=Primary education and 3=Secondary and tertiary education |
| Employment | Employment status coded as 0=Unemployed and 1=Employed |
| Ever tested for HIV | Ever been tested for HIV coded as 0=No and 1=Yes |
| Knows someone who has died or has AIDS. | knows someone who has died or has AIDS codes as 0=No and 1=Yes |
| Contraceptive knowledge | It is a binary measure coded as 1=yes and 0=No. |
| Religion | Participants religion Coded as 1=Catholics; 2= Other Christians; 3=Islam; 4= others |
| Family level variables | |
| Age of household head | Age of household head coded as 1=15-24; 2=25-39; 3=40-59 and 4=60 and above |

| | |
|---|---|
| Sex of household head | Sex of Household head coded as 1=Male and 2=Female |
| Wealth index | Family wealth index coded as 1=Poorest; 2=Poorer; 3=Middle; 4= Richer and 5=Richest |
| Community-level variables | |
| Community-level place of residence | Community-level place of residence coded as 1=Urban; 2 =Mid rural and 3=Rural |
| Community-level poverty | Community Level poverty coded as 1=low; 2 =Mid and 3=High |
| Community Stigma level | Community level Stigma coded as 1=low; 2 =Mid and 3=High |
| Family Planning (FP) messages exposure | Community-level FP coded 1=Low; 2 =Mid and 3=High |
| Unemployment level | Community level unemployment 1= low; 2 =Mid and 3=High |
| State level factors | |
| Media exposure | State level Media exposure coded as 1= low; 2 =Mid and 3=High |
| Stigma level | State level Stigma coded as 1=low; 2 =Mid and 3=High |
| Educational years | State level educational years coded as 1=low; 2 =Mid and 3=High |
| Region | The region of residence coded as 1=North East; 2= North Central; 3=North West; 4=South East; 5=South West and 6=South-South. |

#### 3.5.1.4 Data analytical methods

**Multilevel Modelling techniques**

This thesis employed a multilevel analytical approach to examine the effects of both individual and contextual level factors on adolescents´ use of contraceptive and comprehensive knowledge of HIV/AIDS in Nigeria. According to Diez and Aiello (2005), multilevel modelling is a statistical method in which both individual and community-level information is included in order to understand both their discrete and combined effects on the outcome. Multilevel modelling, also referred to as hierarchical regression, is a statistical approach that can be used to analyse clustered data (Browne and Rasbash, 2004). This model provides a useful framework for thinking about the hierarchical structures in the analysis. This approach requires the use of two or more levels of relationship among variables. This model could be applied to examine patients within clinics or pupils within schools (Rasbash, 2004).

In social and health sciences, the collection of hierarchical data is now universal. For example, adolescents selected at random from the same community may be more alike than adolescents selected at random from different communities. These adolescents may further be nested in a geographically defined community. The multilevel model recognises the existence of such data levels by permitting each residual component at each level in the data hierarchy (Rasbash, 2018; Browne and Rasbash, 2004). For instance, a two-level model which allows for grouping of the adolescent contraceptive outcome within a community would include residuals at the adolescent-level and community-level. Therefore, the residual variance is partitioned into a "between-community" component (The variance of the community level effects) and a "within-community" component (variance at the adolescent's level effects). The community effects represent the unobserved community factors that affect an adolescent's contraceptive outcome. It is these unobserved variables which lead to a correlation between outcomes from the same community.

The quantitative component of this study used the NDHS data 2003-2013. This data is hierarchical as it contains individual, family, community and state levels of information. The hierarchical nature of this data shows that observation of the dataset may not be independent as assumed in a traditional multiple regression analysis. In this study, the study population within the community (level 2) and the population within the state (level 3) had common characteristics. Since adolescent boys and girls are nested within the family, and family clustering within the community, and the community within the state, there is a need for a technique that allows for an explicit method for measuring the influence of community/state level effects and unobserved contextual-level factors on the use of contraceptives and CKH by unmarried adolescents in Nigeria (Diez-Roux, 2001; Diez-Roux, 2005).

There were many reasons why multilevel modelling was preferred in this study rather than traditional multiple regression analysis techniques. First, making correct inferences for an adolescent's SRH health outcomes–Multilevel modelling treat units of analysis as independent observations. One assumption of a single level multiple regression model is that the measurement units are independent, which means that the residuals $e_i$ are uncorrelated with one another. Non-recognition of the hierarchical structures will lead to underestimation of standard errors of regression coefficients leading to an overstatement of statistical significance (Steele, 2008;

Rasbash, 2018). Obtaining the correct standard error was one of the reasons for using multilevel modelling in this study (Steele, 2008).

Second, the multilevel model allowed estimation of community effects simultaneously with the effects of community/state level factors. The use of dummy variables is an alternative way to allow group effect in a traditional regression model known as a fixed effect model. In the majority of the cases, there will be factors at the community level. In a fixed effect model, the effect of community-level factors is confounded with that of the community dummy variables because it is not possible to separate both due to observed and unobserved community characteristics. However, in a multilevel model, the effects of both variables can be estimated and accounted for as the approach allows investigation of the nature of group variability and the effect of group-level characteristics on an individual´s outcome. Finally, multilevel analysis enabled an explicit understanding of where and how the effects of the community and state level factors were occurring in the model to influence the odds of contraceptive use and CKH (Rasbash et al., 2009). The univariate and bivariate analyses were undertaken in SPSS version 24, while the multilevel analysis was undertaken in MLwiN version 3.0.

The data for this study were weighted during analysis to adjust for differences in probability of selection and non-response, and to make the sample data representative of the national population (Rustein and Rojas, 2006). The weight variable used for women is v005 and for men is mv005. This weight variables for both men and women were divided by 1,000,000 (For women, computed as Weight=v005/1000000. and for men, computed as Weight=mv005/1000000.), which was applied before running the statistical analyses.

**Univariate and Bivariate analyses**

A univariate analysis (frequency distribution table) was used to determine the distribution of the variables for 2003-2013 NDHS datasets. The sample in this analysis was unmarried adolescents aged 15-19. The purpose of the univariate analysis technique in this study was to show the pattern and distribution of the background characteristics of the unmarried adolescents' samples in the dataset and to compare them with the rest of the population for meaningful result interpretation.

This was followed by a bivariate analysis to determine the significant relationship between the explanatory variables and outcome variables (Contraceptive use and CKH). Cross-tabulations and

Pearson's chi-square ($\chi 2$) analyses were used to assess the distribution of CKH and Contraceptive use with socio-demographic characteristics of the respondents. The p-value threshold for measuring significant associations was set at 0.05. This applies to each of the three years in which the survey was carried out for meaningful comparison. The bivariate analysis was used to meet the first objective of this study by examining the trends in contraceptive use among unmarried adolescents and the comprehensive knowledge of HIV/AIDS among unmarried adolescents in Nigeria. Also, it was used to assess the percentage distribution of contraceptive use and CKH among adolescents by the community and state level factors. Both univariate and bivariate analysis used 18,255 samples from unmarried adolescents aged 15-19 respectively

**Multivariate logistic regression analysis**

A multilevel logistic regression analysis was used to determine individual and contextual community and state-level factors that influence adolescents´ SRH service use. The two main dependent variables in this study (Comprehensive knowledge of HIV and Contraceptive use) were all binary making the use of a 3-level logistic regression method appropriate. The multilevel analysis was undertaken in MLwiN. For the multilevel analysis, a three-level multivariate logistic regression was fitted to examine the relationship between individual characteristics and CKH/contraceptive use, then secondly, to explore the effect of community-level factors on CKH/Contraceptive use. Lastly, it was employed to assess the state level effect on comprehensive knowledge of HIV and contraceptive use among adolescents in Nigeria. The nature of the NDHS data supports the use of multilevel logistic regression based on the hierarchical nature of the multi-stage sampling design applied in NDHS. Here, adolescents are nested within the household that is further clustered within the community. The community is further nested within the states (36 states), making it reasonable to apply an analytical method that considers the effects of both individual and contextual level factors on the outcome variable. It is worth acknowledging here that the household was not taken to be a level of analysis because the average number of unmarried adolescents in a household who have comprehensive knowledge of HIV/AIDS or use a method of contraceptive was small.

Since unmarried adolescents are nested within the community and the community clustering with the state, the three-level logistic regression is thus suitable to obtain individual, community and

state-level factors related to CKH and contraceptive use. The three-level random intercepts multilevel logistic regression in this analysis takes the form:

Logit ($\pi ijk$) = Log [$\pi ijk$/ (1−$\pi ijk$)] = $\beta_0 + \beta_1 X_{1ijk} + vk + ujk + \varepsilon ijk$

Where ($\pi ijk$) is the probability of adolescent i, in the $j^{th}$ community and $k^{th}$ state having CKH or using a method of contraceptive. $\beta_o$ is the intercept coefficient, $X_{1ijk}$ is the vector of independent variables at individuals, communities and state-level; $\beta$ 1 is the associated vector of usual regression parameter estimates, and is shared by all communities and states. The random effect, $u_{jk}$ is random variance at community levels, while vk is a random variance (effect) at the state level (Steele, 2008; Goldstein, 2003).

**Intra-cluster Correlation**

The odds ratio measured the effect of the fixed component of the model while the random component of the model was assessed using the intra-cluster correlation coefficient (ICC). The ICC is defined as the ratio of the between-cluster variance to the total variance, i.e. between and within clusters. Also, it reveals how much of the variation in the outcome is at different levels.

ICC has a value between 0 and 1 and measures the similarity of elements within the community or cluster. intra-cluster correlation coefficient of 0 means that individuals within the community are not similar to each other compared with individuals from the different community, while the ICC of '1' shows that individuals within the same community all have similar outcomes, i.e. individuals are homogenous (Ejembi et al 2015; Ngome and Odimegwu, 2014; Siddiqui et al., 1996). The ICC in this study was assessed before and after including the explanatory variations. The choice of the formula used to assess the intra-class correlation was premised on the notion that since communities are within states i.e. individuals within the same community, are within the same state, the intra-community correlation includes the variances in state.

The intra-community ($\rho_u$) and intra-state ($\rho_v$) correlation coefficients are represented respectively as follows:

$\rho_u = \sigma u^2 + \sigma v^2 / (\sigma v^2 + \sigma u^2 + \sigma_e^2)$ and $\rho_v = \sigma v^2 / (\sigma v^2 + \sigma u^2 + \sigma_e^2)$

Where $\sigma v^2$ is the variance between States; $\sigma u^2$ is the variance between community (Cluster) within state; and $\sigma_e^2$ is the variance associated with adolescents within community and state (Siddiqui et

al., 1996; Magadi 2017; Murray and Hannan; 1990). It is assumed that within community variation among adolescents is constant. I.e. $\sigma_e^2$ is a constant, estimated at $\pi^2/3$ or 3.29 (Ejembi, 2015; Murray and Hannan; 1990).

**Estimation of parameters**

The multilevel estimation procedure for discrete response was based on quasi-likelihood methods. In this analysis, the default first-order Marginal Quasi-Likelihood (MQL) estimates were first used, and finally, the second-order Penalised Quasi-Likelihood (PQL) estimates were used upon convergence. This is premised on the fact that the second-order PQL estimates are a considerable improvement since the fixed parameter estimates are close to their correct values (Rodriguez and Goldman, 1995; Zainiddinov and Habibov, 2016). However, this method is less stable, and convergence problems may be encountered (Goldstein et al., 2003). The multilevel analysis was preceded with multicollinearity test. This occurs when two or more predictors in the model are correlated and provide redundant information about the response. The test indicated a low correlation between explanatory variables considered in the analysis with Variance Inflation Factor (VIF) less than 2, which was considered non-problematic.

#### 3.5.1.5 Quantitative data validation and Rigour

Following a rigorous process to obtain validity and reliable data is also paramount in the quantitative study. In quantitative research, validity means that the scores received from participants are a meaningful indicator of the construct being measured (Creswell and Plano Clark, 2011). While reliability means that scores received from participants are consistent and stable over time. The quantitative component of this study used data from the NDHS. This data is reliable and valid as the instrument used went through many stages of validation (content, construct and criterion, etc.). The content of the questionnaires was based on a model questionnaire developed by the MEASURE DHS programme. The questionnaire for the survey was developed with proper consultation and great input of key stakeholders (National Planning Commission, the Federal Ministry of Health, the World Bank, the National Bureau of Statistics and USAID, UNFPA, UNICEF, WHO country representatives). These experts made inputs into the content (content validity) of the questionnaire that helped to revise the final instrument (questionnaire) used for the data

collection. The survey was carried out across all the 36 states in Nigeria, making the findings in the current study representative and externally valid.

The NDHS technical team was involved in recruiting and training field staff that were drawn from the 36 states in Nigeria. A substantial number of the field staff members had experience working in previous NDHS surveys. The training was conducted according to the standard DHS training procedures. Interviews were performed only if the respondent provided voluntary informed consent. The sample was representative covering all the 36 states in Nigeria. Furthermore, the questions to assess comprehensive knowledge of HIV were also valid and relevant as the following agencies and surveys (UNAIDS general population survey; DHS AIDS module, UNICEF,) have used the same itemised questions to assess comprehensive knowledge of HIV among adolescents and young people, as well as measuring the knowledge, source, and use of family planning methods. Also, credible studies (Oginni et al., 2017; Ochako et al., 2011; Teshome, 2016; Oljira et al., 2013, Hendriksen, et al., 2007; Obare et al. 2011) have assessed comprehensive knowledge of HIV, and contraceptive use using the above-specified questions. Therefore, for the above reasons, the listed questions are considered valid for the proposed study.

### 3.5.2 Qualitative components

Qualitative research approaches used in qualitative research include, but are not limited to the following; Ethnography, Grounded theory, Phenomenology, Symbolic Interactionism, more recently hermeneutics, critical theory, feminism, post-colonial theory and cultural studies (Braun and Clarke, 2006; Corbin & Strauss, 2008). The first three are the most commonly used in social science and health (Patton, 2002). Traditionally, ethnography is the cultural dimensions of life and behaviour. According to Hammersley and Atkinson (1983), it is a qualitative research approach in which the researcher takes part in people everyday lives for a sustained period, watching what happens, listening to what people say and asking questions. It interprets ethnic, cultural and social groups. Grounded theory according to Corbin and Strauss (2008), is a set of techniques used to identify concepts and categories within text that are then linked into formal theoretical models. It is a set of methods that involves systematic but flexible guidelines for collecting and analysing qualitative data to generate a theory that is embedded in the data themselves (Charmz, 2006). Also, Given, (2008) defined phenomenology as the study of lived or experiential meaning and attempts to describe and interpret these meanings in the ways that they emerge and are shaped

by conscious presuppositions. It focuses in understanding individual lived experiences and the behaviour and social meaning these experiences have for them (Smith, 2009).

Considering the features and theoretical assumptions of each approach, this study adopts a phenomenological approach to better understand the views and perceptions of adolescents and service providers on adolescents used of SRH services. This is premised on the fact that phenomenology as explained above focuses on individual experiences, beliefs and perception unlike ethnographic that integrates the cultural context into the phenomenon of interest or grounded theory that aims to generate a theory of phenomena that is grounded in data (Mcleod, 2001). Phenomenological approach using primarily In-depth Interviews (IDIs) and Focus Group Discuss (FGD) provides rich and complete description of human experiences and data emerge naturally rather than being enforced by the researcher. Although the weakness of this approach is that the quality of data depends on the skills of the researcher; making it vital to use an experienced qualitative data collector (Mcleod, 2001).

Also, one the reasons for adopting a research approach in this study is because the thematic analysis is not integrated or part of any pre-existing theoretical framework, and so it can be used within different theoretical frameworks (Braun and Clarke (2006). Likewise, Ryan and Bernard (2000) argued thematic analysis to be a process performed within traditional analytic procedures. Also, thematic analysis can be either essentialist, which reports experiences, meanings and the reality of participants, or it can be a constructionist method, which examines how events, realities and so on are the effects of a range of discourses operating within society. However, the focus of the approach is on the former rather than the latter. This is because the study is not aimed at developing theories but rather aims to identify, analyse, and report patterns within data (Braun and Clarke, 2006). This approach followed rigorous, but inductive procedures to identify and examine themes from the in-depth interview**s** and FGDs in a way that is transparent and credible (Guest, 2012).

#### 3.5.2.1 Recruitment and selection criteria

The qualitative part of the study focused on primary data collected from Abuja Nigeria covering both the urban and rural adolescents and service providers. Abuja is the capital of Nigeria, making it highly multi-racial, multi-ethnic, multi-cultural and multi-faith. Apart from the cosmopolitan

nature of the city, it has a high prevalence of HIV within the country. The Global AIDS Response Country Progress Report (2014) records that Abuja has a prevalence of 7.5% against the national prevalence of 3.4%. Also, the NDHS (2013) report makes it clear that knowledge of contraceptive methods and use family planning methods are lowest for women in the Northern part of Nigeria, in which Abuja is located.

The recruitment of participants was purposive. Purposive sampling is a deliberate non-random method of sampling which aims to sample a group of people with particular characteristics (Bowling, 2009). The choice of this method over other sampling methods (Snowballing, Theoretical and Convenient sampling) was based on the fact that it helped to recruit participants with appropriate knowledge that were valuable to the research process (Bowling, 2009) and helped to capture diverse characteristics of participants that promoted good interaction (Patton, 1990). The participants (service providers) for this study were mainly recruited from Primary Health Centers across Abuja, Nigeria. Also, adolescents were primarily recruited from three area councils in Abuja, Nigeria with the help of research assistants who work at a Youth Friendly centre in Abuja.

Participants (adolescents) for this study were rural and urban unmarried adolescents aged 10-19 who were Nigerians. While the service providers were those working in a PHC or hospital or Youth-friendly centres or drug shop where SRH/family planning information and services are provided. The exclusion criteria included people who were married, not within the age of 10-19 at the time of the data collection and providers not working in a setting where SRH services are provided.

#### 3.5.2.2 Data collection Instrument (In-depth Interview and FGDs)

In this study, two qualitative tools were used separately to collect data from both adolescents and providers on access and use of sexual health services. In-depth Interviews (IDIs) involved the collection of data by talking to respondents and recording their responses (Bowling, 2009). IDIs are conducted through face-to-face interaction or over the telephone. However, a face-to-face semi-structured interview was used to collect data from the sexual health service providers working across four areas/area councils in Abuja, Nigeria. Although, this method could be expensive, time-consuming and have the potential for interviewer bias. The choice of IDIs was because interviewers can probe thoroughly for responses and clarify any ambiguity, ask

complicated and detailed questions and check on/clarify misinterpretations and inconsistencies. Also, an in-depth interview seeks deep information and understanding. Sixteen service providers were purposively selected to explore their views on the range of adolescent sexual health issues in Nigeria. The use of IDIs to explore providers views on adolescent's access and use of SRH services was because due to the shift pattern of health professionals in Nigeria, it is difficult to get health professionals together for an FGDs. Secondly, group dynamics of FGDs may hinder junior service providers from sharing their views about the delivery of SRH services to adolescents in the presence of their senior colleagues as this may be used against them in practice and perhaps, potential implication for bias to the data. Also, the senior colleagues may feel disrespected to sit with their junior colleagues to discuss any issue and may not be able to share their views. This challenge has been recognised in a similar study in the UK, where group dynamics hindered junior staff from sharing their perspectives amongst senior colleagues (Gott et al., 2013). The use of FGDs would have affected the quality data collected in this study.

Also, Focus Group Discussions (FGDs) were used to collect data from adolescents on their views and perceptions on their access and use of SRH services. FGDs are unstructured interviews with a small group of people who interact with each other. It depends on the exchange of ideas among participants as they answer questions from the interviewer (Ulin et al., 2005). The choice of FGDs to explore the views of adolescents in this study was based on small group dynamics theory in order to stimulate discussion, gain insight and generate ideas to pursue the topic in great depth with the service providers (Gott et al., 2013). Also, to understand the meaning that lies behind the collective views/ideas shared by adolescents. Most importantly, FGD helps to provide safe discussion in which to explore sensitive subjects, which might be perceived as embarrassing to discuss in a personal one-to-one interview with adolescents. This tool was appropriate for this study because the selected participants shared their views or opinions held by their peers on sexual health issues rather than their own experiences. This seemed appropriate for this topic of study around adolescent access and use of sexual and reproductive health services.

As discussed in section 3.4, this study adopted an explanatory design, where the qualitative data underpinned and helped to explain the quantitative data. Both the interview and FGD guides were largely informed by the results of the quantitative results, the literature and the researcher's personal experiences of working with adolescents in the past. For example, the observed trends in

CKH and contraceptive use among adolescents influenced the questions around sources of SRH information such as the use of "MyQuestion database", "the reasons why adolescents use of contraceptives have not improved since 2003 and the reasons for the stall in CKH since 2008 in Nigeria. The low contraceptive use among adolescents shown in chapter 5 shaped the questions around the barriers and facilitators of SRH access and use to better understand the reasons why this group are not accessing these services. Also, the quantitative results show that 95.1% of adolescents preferred accessing contraceptives from the private clinic and local pharmacy stores as opposed to 4.9% that preferred public (government) clinics. This influenced the exploration of the reasons why adolescents prefer private clinic to government/public clinic during the FGDs and IDIs.

Also, some of the questions used in the interview and FGDs were adapted from the protocol of a study conducted among adolescent in Nepal that assessed the supply side constraints affecting the quality of adolescent friendly health services and the barriers for Service utilization in Nepal. This study was conducted by the Center for Research on Environment Health and Population Activities (CREHPA) with support from the United Nations Population Fund (UNFPA) Nepal office, UNICEF and Ministry of Health Nepal (UNFPA_Nepal, 2015).

Furthermore, the FGD guide was developed following Krueger and Casey's (2009) guide on developing effective focus group questions. The detailed account of the participants' stratification is provided in chapter 7. Participants in the study were rewarded accordingly via the provision of refreshments after the study. Those with transportation challenges were supported while taking into consideration local customs and expectations. The schedules adopted a logical structure by grouping questions into sections and proceeding from the general to specific. See appendix 1 and 2 for details.

#### 3.5.2.3 Pilot testing

Pilot studies were conducted to assess the feasibility of the research protocol and examine the reliability and validity of outcome measures (Song et al. 2010). This was because comprehensive pilot testing encompasses such a diverse array of purposes, it requires a diverse collection of research methods and data sources from which researchers may choose the ones most suited to those purposes. The interview and FGDs guide were piloted among colleagues, research assistants and developed in close consultations with the supervisory team for appropriateness of the

questions. This was to ensure that the interview and FGD guides were workable, realistic and tested adequacy of the instruments proposed. Also, as explained in chapters 6 and 7, there was a slight modification of the tools after the first two interviews in order to suit the research context.

#### 3.5.2.4 Qualitative Data analysis

Data analysis in a mixed methods approach involves analysing the quantitative data separately using a quantitative approach and the qualitative data using a qualitative method (Creswell and Clark, 2011). The data collected through the audio recording of the semi-structured interviews and FGDs were transcribed accordingly and analysed thematically (Boyatzis, 1998). Thematic analysis is not a specific method but a tool to use across different methods (Boyatzis, 1998). Thematic analysis varies from other qualitative analytic methods used to describe the pattern of data, such as thematic decomposition analysis, thematic discourse analysis, etc. The basis for this approach is because it provides a flexible and useful research tool, which can help provide a rich and detailed account of data. As thematic analysis does not require the detailed theoretical and technological knowledge of approaches, such as grounded theory, it can offer a more accessible form of analysis, particularly for those who are at an early stage in a qualitative research careers (Braun and Clarke, 2006).

Braun and Clarke, (2006), explain six steps to thematic analysis, which can be followed to do a good thematic analysis. Though, some of these steps are similar to the steps of other qualitative research. The process begins when the analyst starts to notice and look for patterns of meaning and issues of potential interest in the data (Braun and Clarke, 2006). Also, NVIVO statistical software was used to organise the data, analyse word frequency in the transcribed document, code the data and developed the themes.

Considering the trustworthiness, reliability, and subjectivity discourse around qualitative analysis, the thematic approach to the data analysis was also guided by Gioia inductive analytical framework (Gioia *et al.,* 2013). Gioia framework is a systematic approach of moving from raw data to aggregate dimensions to ensure rigour. The reason for integrating this approach with the thematic analysis process is to diagrammatically show the rigorous methods of the data analysis, and the transition from raw data to interpretation, which is not usually revealed in a thematic analysis (Gioia *et al.,* 2013). More information is provided in chapters 6 and 7.

**Phases of thematic analysis**

a. Familiarising oneself with the data collected: This phase started with transcribing the Interview and FGD data, reading and rereading the data to make sense the patterns. Here, I was actively searching for meanings and patterns in the data.
b. Generating initial codes: After understanding the patterns, interesting features in the data were coded carefully across the entire data set, collating data relevant to each code (Boyatzis, 1998 p63).

c. Searching for themes: After all the data were initially coded, the long list of different codes identified across the data set were grouped into themes.

d. Reviewing themes: This step started after devising a set of provisional themes, and refinement of the themes. The themes were checked with the coded extracts. Diagrammatic representation of the coding process guided by Gioia analytical framework was demonstrated here (Gioia *et al.,* 2013).

e. Defining and naming themes: After the data collection has been satisfactorily mapped thematically, there was an ongoing analysis to refine the specifics of each theme, and the overall story the analysis reveals; generating clear definitions and names for each theme. This was carried out with the help of the supervisory team.
f. The final opportunity for analysis. At this stage, good extracts were selected. This was followed by relating the analysis to the research question and literature, and producing the result chapter of the analysis. The above six steps were adapted from Braun and Clarke, (2006) and applied to this study.

#### 3.5.2.5 Validity and Reliability-Rigour

The quality of research is not only based on the findings but also the process that is taken to obtain the results. Rigour in a research study denotes the extent to which the researcher worked in order to enhance the quality of the studies (Heale and Twycross, 2015). This is achieved through measurement of the validity and reliability of the instrument used in a study (Heale and Twycross, 2015). Validity and reliability are part of the research language use across disciplines. Although,

this differs in a quantitative and qualitative research, in both approaches it serves the aim of checking the quality of the data, the results, and the interpretations (Creswell and Clark, 2011). The term validity is defined as the accuracy and trustworthiness of instruments, data and findings in research (Bernard, 2000, p 46). Validity shows how strong and sound the research is, while reliability assesses the extent to which the scale item measures the same construct, free from random error and repeatability (Bowling, 2009 p. 162). It focuses on the degree to which the result of a study is consistent and representative over time.

The rigour in this study was achieved mainly through Triangulation and member checking strategy. Triangulation refers to the process of using multiple sources of data to enhance the credibility of a research study (Amber and Detzner, 1995; Bryne, 2001). Both quantitative and qualitative data were used to explore the determinants of adolescents' use of SRH services in Nigeria. For example, the Nigerian Demographic Health Survey (NDHS) data was used to examine the factors that influence both contraceptive use and CKH of HIV among adolescents in Nigeria, whereas the data from the semi-structured interviews and Focus Group Discussions (FGDs) were used to explain the quantitative results and to explore an adolescent's sexual health concerns, barriers and enablers of service use from the perspective of service providers and adolescents respectively. The use of these multiple sources helped to deeply explore the determinants of adolescents' use of SRH services from different perspectives; and the convergence of the results validate the claim of the credibility and accuracy of the results as presented in this study (Amber and Detzner, 1995; Bryne, 2001).

Secondly, the confirmability in the study was ensured through the use of member checking. Confirmability refers to the neutrality of the findings and absence of a researcher's perspectives (Prion and Adamson, 2014; Bryne, 2001). Throughout the data collection, transcription and analysis in this study, both supervisors were actively involved. The first two interviews were reviewed by both supervisors, and their suggestions and guidance helped with the subsequent interviews. The supervisors were duly consulted during the coding and data analysis process to discuss the emerging patterns in the data. They commented on the initial codes, themes and categories generated and suggested some codes be revised. The several consultative meetings held with the supervisors during the analysis substantiate that the results presented in this study are a true reflection of accounts given by the study participants.

Finally, the interpretation of the findings in this study were validated during a Policy Communication Fellowship Programme in Malawi in June 2018, sponsored by the Population Reference Bureau. This programme gave an opportunity for researchers in Africa to present their research findings, and to give an interpretation of them. This process helped the results of the current study to be validated and the interpretations confirmed by four SRH experts from Nigeria who attended the programme. The interpretations and conclusion of the findings align with the impressions of these local researchers from Nigeria. The results of this study are also transferable to other settings with other settings to Nigeria. This is because the issues identified in the course of this study with reference to factors influencing an adolescent's use of sexual and reproductive health services are consistent with the issues identified by other researchers from Uganda, Kenya and Ghana who attended the programme in Malawi. This shows that the results presented here are transferable and therefore are dependable as the methodology was clearly explained (Prion and Adamson, 2014).

#### 3.5.2.6 Ethical considerations

Research ethics are the standards of professional conduct that researchers are expected to maintain in their dealings with colleagues, research participants, and the wider community. These include responsibilities to ensure research projects are designed and conducted safely, fairly and with integrity (Thomas and Hodges, 2010). The overall ethical principle governing research is that participants should not be harmed as a result of participating in research and should give their informed consent to take part (Bowling, 2009). For this reason, this study adopted the biomedical ethical approach as developed by Beauchamp and Childress in the Principle of Biomedical Ethics. As stated above, this study involved adolescents aged 10-19. Those under 18 are according to the Federal Ministry of Health Nigeria considered minors, except in the case of emancipation (FMoH, 2014). The safety of this group was paramount in this study. Therefore, the focus group discussion was designed to take place in a recognised institution with which the participants were familiar.

For example, the FGDs among in-school adolescents took place in a secondary school environment while the out-of-school adolescent FDGs took place at the Youth friendly centre in Abuja with which adolescents were familiar. Due to the minors involved in this study, the Beauchamp and Childress Principle of Biomedical Ethics was followed to ensure participants, especially the minors in this study, were protected. These include autonomy, beneficence, non-maleficence and justice (Beauchamp and Childress, 1994).

**Autonomy:** This is based on the principle of respect for research participants (Garrett et al., 1993). Autonomy is the principle that a person should be free to make his or her own decisions (Iserson, 2006). This study ensured that all persons taking part in the study were well informed of the nature of the study and the possible risks and benefits.

Also, it ensured participants were competent to make decisions and decisions made by participants were not coerced. An information sheet was provided to all participants before the interview which contained the research aim, objectives, type of question that was asked and the right to withdraw at any point in the research process. They were also informed that their involvement was voluntary.

**Beneficence:** The principle of beneficence requires research of this nature to act in the best interests of the participants. This study acted in the best interests of participants by ensuring they were protected from any form of physical or psychological harm during the research process. Although no incidence was recorded, the arrangement was made to signpost participants to a specialist counselling team if they felt emotionally distressed. Also, although there were no direct benefits for participants, the outcomes of the study would help improve the sexual health services in the country which may yield benefits for participants in the future. The data in this study was collected and analysed following an explicit safeguarding principle; ensuring participants names were not mentioned, and pseudonyms were used throughout the analysis process (Beauchamp and Childress, 1994).

**Non-maleficence:** The principle of non-maleficence requires researchers to avoid harming the research participants, or involving themselves in anything what could be against the participant's interests. This study ensured participants were not inflicted with direct harm or pain. The data from the interview and FGDs were tape recorded, transcribed verbatim and stored in my laptop (Both audios and transcripts). The computer was password protected to avoid third-party access. To ensure the names of participants were not recorded for confidentiality issues, each transcript was assigned a code. The “results chapters” were written under pseudonyms with the intention of avoiding identification of the participants (Beauchamp and Childress, 1994).

**Justice:** The principle relies on fairness and equity and ensures participants are not treated unjustly. The participants in this study were treated fairly and equally. This study ensured that no participant was treated unjustly in the cause of the research whether during the selection process or during rewards provided for taking part in the study.

#### 3.5.2.7 Informed consent/Information sheet

Ethical approval for this study was obtained from the Research Ethics committee of the School of Education and Social Sciences, University of Hull (See appendix 7) and the National Health Research Ethics Committee Nigeria (NHREC) (Appendix 8). Adolescents aged 10-19 years and all the sixteen service providers interviewed gave their informed consent. The NHREC guideline for young people participating in research in SRH stipulated that for non-therapeutic research (Not involving treatment, or collection of bodily samples), persons aged 10–12 require parental consent as well as their own permission. However, persons aged 13 and above and emancipated minors can consent for themselves without parental consent (Federal Ministry of Health, 2014).

However, in this study permission was obtained from minors aged 10-14, as well from their parents or guardians. Consent was also obtained from the gate-keepers where adolescents were recruited (Schools, Youth Friendly center and community Local NGOs). The research assistants oversaw the consent process for the out-of-school and in-school adolescents. Participants' information sheets (see appendix 3, 4 & 5) were provided to both service providers and adolescents with the research aim, participants' role in the study, possible risk and how participants and information provided will be safeguarded.

The participants were briefed about the study through the information sheet. The information sheet was disseminated to all the recruitment sites in Abuja through the help of research assistants where necessary. Three different information sheets were developed for adolescents (10-19), parents/guardians and service providers. Adolescents aged 10-19 were informed about the study via their school clubs and the information sheet was disseminated to guide their decision-making process. All adolescents below 15 years of age with interest in the study were given a separate information sheet and consent form for their parents or guardians to sign. Although based on the FMoH guidelines, those aged 13 and above can consent to take part in the study. However, the decision to extend parental consent to those 13 and above was to avoid any local issues by community members by including those minors with their parental involvement.

The signed consent form was returned through the school clubs to the assigned gatekeepers. Adolescents who returned their signed copy from their parents or guardians were included in the study. Also, adolescents aged 15-19 were informed of the study in their various school clubs. Those

interested were asked to sign and return the consent form to the local research assistants/assigned gatekeepers. Also, oral consent was obtained from all adolescents before the FGDs. For out-of-school adolescents the research assistants took the information sheet to the hot spot centres where they were briefed about the purpose of the study. Interested participants also signed the consent form and details were collected afterward for future contacts.

The service providers were personally approached by the researcher in their various centres through the help of one of the chief nurses in Abuja who gave contacts of most providers at the PHC centre in Abuja, Nigeria. Selected PHC centres were visited and the information sheet disseminated to inform the participants about the study. Details of interested participants were collected for future contact to arrange for one-to-one interviews. Information sheet for service providers is provided in appendix 3.

All the participants who indicated interest for the study were formally contacted through the contact details they provided to arrange for an interview or inform them of the date of the FGDs. Also, gatekeepers were used to inform participants within their care on the FGD date, schedules, places and time. The interviews took place at service providers´ places of work, while the FGD for in-school adolescents took place in schools. FGDs for out-of-school adolescents took place at the Youth friendly centre in Abuja.

#### 3.5.2.8 Training of research assistants

Two research assistants (one male and female) were recruited for this study. A 2-day comprehensive training was conducted to provide and to keep them abreast of the ethos of the study and how their role can influence the study positively or negatively. Within this time, the data collection tool was piloted among the research assistants. The training took place in Kuje, Abuja, Nigeria on the 15$^{th}$ and 16$^{th}$ of June, 2017. The field work commenced immediately after the training on the 17$^{th}$ of June, 2017. The above date gave enough room for quantitative analysis to be completed in a reasonable time so that some patterns were followed up in the field via an in-depth interview and FGD. The data collection exercise lasted for 14-16 weeks. While the lead researcher was responsible for directing the discussions, the research assistants were monitoring the tape recorder and also taking notes in case of technology failure. In one of the female FGDs, the female research assistant played an active role, which did not undermine the role of the lead researcher.

## 3.6 Conclusion

This chapter explains the research methodology and method undertaken to address the research questions. It describes the research designs and clarifies the instruments used to collect and analyse data. It further demonstrates the statistical techniques used to examine the data, the ethical processes and rigour. The next chapter provides results of the bivariate and multivariate analyses of the predictors of adolescents´ CKH.

# Chapter 4: Trends and Determinants of Comprehensive Knowledge of HIV/AIDS among Unmarried Adolescents in Nigeria

## 4.1 Introduction

This chapter examines the determinants of comprehensive knowledge of HIV/AIDS (CKH) among unmarried adolescents in Nigeria. Comprehensive knowledge of HIV is one of the key strategies in the prevention and control of HIV/AIDS in Nigeria. This chapter adds to the overall thesis by revealing the interconnected factors that influence adolescents CKH, which is one of the Sexual and Reproductive Health (SRH) indicators used in this study to provide an overview of SRH access and use in Nigeria. The chapter starts with a brief rationale for the research and background information to contextualise the study. This was followed by the details of statistical analyses that were used to examine the determinants of CKH and the variables included in the analyses. The chapter presents the results of the univariate, bivariate and multivariate analyses of the determinants of CKH among unmarried adolescents. These results are discussed in line with the current literature, followed by conclusion.

## 4.2 Background

Evidence from the Nigeria HIV/AIDS Indicator and Impact Survey (NAIIS) shows that overall, there is a decline in HIV prevalence in Nigeria. However, this is not the same for younger age group, with young women aged 20–24 years more than three times as likely to be living with HIV as compared to young men in the same age group (UNAIDS, 2019). The increase in burden of HIV among this group arguably could be due to low CKH as substantial evidence exits that shows correlation between increased CKH and reduction in HIV prevalence (UNAIDS, 2010), perhaps due to perceived vulnerability to HIV infection (Bogale et al., 2011).

Although knowledge of HIV/AIDS has increased globally, however, this has not been the case in Nigeria as only 22% of adolescents and 27% of young people have CKH (NACA and UNICEF, 2016). This is far lower than the 95% global target set out at the UNGASS Declaration of Commitment in 2010. The Nigeria government recognising the positive impact of CKH in reducing stigma and adopting safer sexual behaviour developed the National Family Life and HIV Education (FLHE) curriculum in 2003 with the aim of increasing CKH and provides adolescents with information and

skills necessary for rational decision making about their sexual health. Also, other pragmatic interventions like “MyQuestion and Answer (MyQ&A)” and The National Call Centre for HIV/AIDS and Related Diseases (NCCD) were introduced to further expand young people’s access to HIV and SRH information. The National Agency for Control of AIDS (NACA) in the revised National HIV Strategic Framework 2019-2021 has acknowledged the need to increase CKH by addressing some of the obstacles that limit adolescents from gaining CKH.

Evidence from the literature review shows that out of the limited studies that have examined the determinants of CKH among unmarried adolescents, only few have actually gone beyond the individual and household level factors to interconnected contextual-level factors that influence unmarried adolescents’ CKH (Oginni, et al., 2017; Ochako *et al.,* 2013; Oljira et al. 2013; Teshome *et al.* 2016; Sahile *et al.,* 2015; Zainiddinov and Habibov, 2016; Khanal, 2013; Yadav, *et al.,* 2015).

Therefore, this chapter made a unique contribution to the overall study by examining the predictors of one of the SRH indicators identified by the WHO to provide an overview of SRH situations in terms of access and use in both developed and developing countries like Nigeria (WHO, 2006). This indicator is critical in understanding the overall determinants of adolescent’s access to services in Nigeria. This is because CKH is associated with safer sexual behaviour and attitudes (Swenson et al., 2010) and more self-efficacy for condom use (Bogale et al., 2011) among adolescents. Effective use of condom offers dual protection against STIs including HIV and unwanted pregnancy. Unwanted pregnancy is one of the strongest predictors of unsafe abortion (Oyefabi et al., 2016), which is the leading cause of maternal mortality in this age group (Ganatra et al., 2017).

Also, this chapter using the multilevel modelling, unveils the community and state level contextual factors that influence CKH among adolescents in Nigeria. Not recognising these factors has serous policy implication in informing a robust development of tailored interventions not just at the individual level but at the community/state levels to dispel misconceptions and ingrained stigmatising attitudes towards a person living with HIV/AIDS and galvanise a supportive social and political climate to reduce the burden of HIV and risky sexual behaviour among adolescents.

## 4.3 Research Objectives

The research objectives in this chapter are to:

i. Examine the trends in comprehensive knowledge of HIV among unmarried adolescents in Nigeria.
ii. Explore the individual, community and state level factors that influence adolescents' comprehensive knowledge of HIV/AIDS in Nigeria.
iii. Examine state-level variations in CKH among unmarried adolescents in Nigeria.

## 4.4 Methods: Data used

As explained in chapter 3, this chapter is based on a secondary analysis of data from the NDHS conducted in 2003, 2008 and 2013. The NDHS, amidst collecting information on the demographic characteristics, also collects reliable information on knowledge and attitudes regarding HIV/AIDS, as well as other sexually transmitted diseases. The study used an individual dataset (men and women) from the 2003, 2008 and 2013 NDHS to show the trends in CKH among unmarried adolescents in Nigeria, while the multivariate analysis used a pooled dataset from each of the three years. The univariate and bivariate analyses used the total sampled size of 6664 and 11591 for male and female adolescents respectively collected from 365, 795 and 904 clusters in 2003, 2008 and 2013 respectively, while the multivariate analysis used a total of 14921 cases due to the exclusion of the missing cases before running a multivariate analysis in MLwiN.

### 4.4.1 Study variables: dependent variable

As explained in chapter 3, the dependent variable used in the analysis was comprehensive knowledge of HIV, coded as Yes=1 and No=0.

### 4.4.2 Independent variables: Individual level and contextual (community/state) variables

The independent (explanatory) variables used in this study include:

1. Individual-level factors: Survey year, gender, age, education, employment, ever tested for HIV, contraceptive knowledge, religion, ethnicity.
2. Family level factors: Age of household head, sex of household head, wealth index

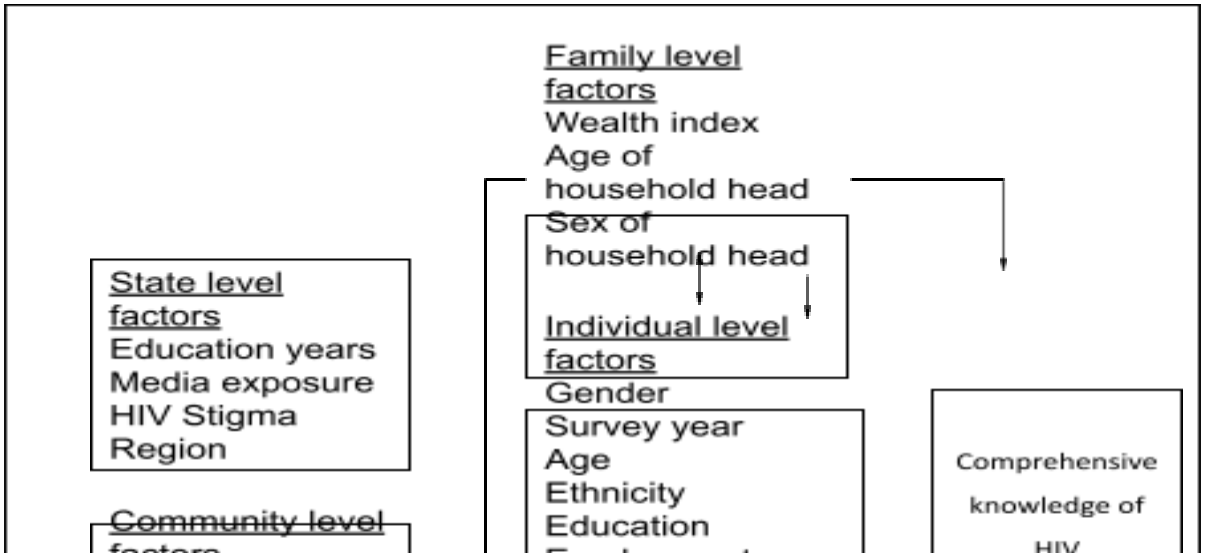
3. Community-level factors (Community place of residence, Community poverty level, community stigma level, Community FP message exposure, community unemployment level)
4. State level factors (Media exposure in the state, Stigma level in the state, Educational years in the state and Region).

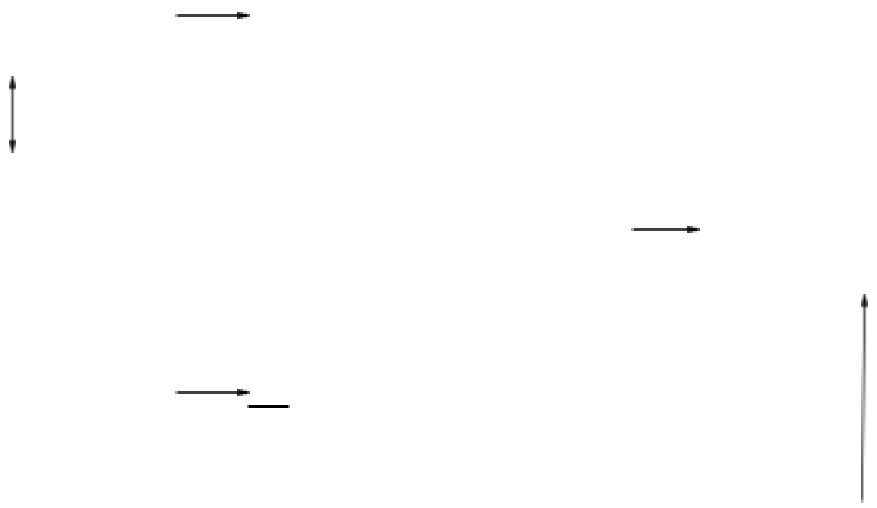
### 4.4.3 Operational framework for data analysis

Figure 4.1 shows the operational framework adopted for the multivariate analysis. The conceptual framework in chapter 2 provides the variables the literature suggests that influence the outcome of interest (CKH and Contraceptive use). This is different from the operational framework presented in this chapter as the latter introduced only the variables included in the multivariate model due to the fact that some of the variables reported in the conceptual framework were not available in the DHS dataset. For example, facility-level factors that influence adolescents' use of SRH services, as reviewed in the literature, were limited in the dataset. However, the qualitative component explored this in detail. As explained in chapter three (section 3.5.1.4), a three-level multivariate logistic regression was fitted to examine the individual, community effects on CKH and to assess the state level variations on CKH among unmarried adolescents in Nigeria. The three-level random intercepts' multilevel logistic regression in this analysis takes the form:

$$\text{Logit}(\pi ijk) = \text{Log}[\pi ijk/(1-\pi ijk)] = \beta_0 + \beta_1 X_{1ijk} + vk + ujk + \varepsilon ijk$$

Where (πijk) is the probability of adolescent i, in the $j^{th}$ community and $k^{th}$ state having CKH. $\beta_o$ is the intercept coefficient, $X_{1ijk}$ is the vector of independent variables at individuals, communities and state-level; $\beta$ 1 is the associated vector of usual regression parameter estimates, and is shared by all communities and states. The random effect, uijk is the random variance at community levels, while $v_k$ is a random variance (effect) at the state level.





…… (Indirect influence)
_____ (Direct influence)

Figure 4.1: Operational Framework for the analysis of determinants of CKH among unmarried adolescents in Nigeria

## 4.5 Results

### 4.5.1 Background characteristics of the sample

Table 4.1 presents the background description of 18,255 samples of unmarried adolescents aged 15-19 from the Nigeria Demographic Health Survey (NDHS) during the period 2003-2013. The results showed that only 32.1% of adolescents had comprehensive knowledge of HIV (CKH). Less than 40% of the NDHS samples were male while the rest were female. The proportion of male among unmarried adolescents is slightly higher than the proportion of male among adults aged 20-49. Also, 75.2% of the unmarried adolescents sampled had secondary education and above while almost 10.6% and 14.2% had no education and primary education respectively. This distribution seems not to reflect the distribution of education in the rest of the population for those aged 20-49 where almost 42% had no education, and only 36% had secondary education and above. The results showed that 36% of the respondents were aged 18-19; the rest (64%) were

15-17 years. Concerning ethnic affiliation, only 17.4% of unmarried adolescents were Hausa, 17.5% were Igbo, 18.1% were Yoruba which mirrors the three major ethnic groups in Nigeria.

Also, 28% of adolescents were in employment while 72% were unemployed. For the rest of the population (those aged 20-49), 78% were employed. Surprisingly, only 5.8% of the sample population (adolescents) had ever been tested for HIV while 94% had not. Both Catholics and other Christians made up 61% of the sample while 38% were Muslims. This distribution did not reflect the overall population sample. For the rest of the population, the results showed that 54% were Muslims while 45% were Christians. The population of adolescents in the sample appeared to be evenly distributed across the region with 55% being from the rural settlement. As expected in a patriarchal society, 76.6% of the household heads were male with more than half between 40-59 years of age. HIV stigmatising attitude was high among adolescents (87%) and the rest of the population (84%). Media exposure among adolescents (42.5%) is higher than the rest of the population (33.6%) whereas exposure to overall family planning messages was low among adolescents (5%) as well as the rest of the population (8.5%).

Table 4.1: Background samples characteristics

| | Unmarried Adolescents aged 15-19 | | Adults aged 20-49 | |
|---|---|---|---|---|
| Variables | Unweighted cases | Weighted (%) | Unweighted cases | Weighted (%) |
| **Comprehensive knowledge of HIV** | | | | |
| Yes | 5038 | 31.2 | 22608 | 33.7 |
| No | 11020 | 68.8 | 43982 | 66.3 |
| **Year** | | | | |
| 2003 | 1688 | 9.2 | 6275 | 8.4 |
| 2008 | 7079 | 38.8 | 32337 | 43.4 |
| 2013 | 9488 | 52.0 | 35831 | 48.1 |
| **Gender** | | | | |
| Male | 6664 | 36.7 | 19072 | 25.6 |
| Female | 11591 | 63.3 | 55371 | 74.4 |
| **Ethnicity** | | | | |
| Hausa | 2496 | 17.4 | 17697 | 27.8 |
| Igbo | 2730 | 17.5 | 7799 | 12.3 |
| Yoruba | 2953 | 18.1 | 9512 | 15.1 |
| Others | 8836 | 47.0 | 34412 | 44.9 |
| **Education** | | | | |
| No education | 1877 | 10.6 | 31279 | 41.6 |
| Primary | 2689 | 14.2 | 16966 | 22.4 |
| Secondary and above | 13689 | 75.2 | 26198 | 36.1 |

| | | | | |
|---|---|---|---|---|
| **Employment** | | | | |
| Unemployed | 13028 | 72.1 | 16415 | 22.1 |
| Employed | 5073 | 27.9 | 57718 | 77.9 |
| **Ever tested for HIV** | | | | |
| Yes | 983 | 5.8 | 17683 | 23.8 |
| No | 16686 | 94.2 | 54393 | 73.1 |
| **Knowing someone who has died of HIV/AIDS** | | | | |
| Yes | 2539 | 15.6 | 12949 | 19.4 |
| No | 13550 | 84.4 | 53694 | 80.6 |
| **Religion** | | | | |
| Catholic | 2623 | 15.0 | 7009 | 9.8 |
| Other Christians | 9013 | 46.4 | 26699 | 34.2 |
| Islam | 6445 | 37.6 | 39135 | 54.0 |
| Others/traditionalist | 174 | 1.0 | 1600 | 2.0 |
| **Age of household head** | | | | |
| 15-24 | 920 | 5.3 | 1664 | 2.3 |
| 25-39 | 2081 | 11.3 | 29952 | 40.8 |
| 40-59 | 9732 | 54.1 | 35123 | 47.1 |
| 60 and above | 5494 | 29.3 | 7580 | 9.8 |
| **Sex of Household head** | | | | |
| Male | 14111 | 77.8 | 66801 | 89.9 |
| Female | 4144 | 22.2 | 7642 | 10.1 |
| **Wealth index** | | | | |
| Poorest | 2259 | 11.8 | 16279 | 21.0 |
| Poorer | 3045 | 15.7 | 15655 | 20.3 |
| Middle | 4216 | 22.1 | 14521 | 18.6 |
| Richer | 4632 | 25.0 | 14153 | 19.0 |
| Richest | 4103 | 25.5 | 13835 | 21.1 |
| **HIV Stigma** | | | | |
| Yes | 14141 | 87.2 | 56032 | 84.1 |
| No | 2037 | 12.8 | 11048 | 15.9 |
| **FP exposure** | | | | |
| Yes | 899 | 5.0 | 6051 | 8.5 |
| No | 17313 | 95.0 | 68206 | 91.5 |
| **Media exposure** | | | | |
| Yes | 7631 | 42.5 | 24314 | 33.6 |
| No | 10505 | 57.5 | 49479 | 66.4 |
| **Place of residence** | | | | |
| Urban | 7644 | 45.5 | 24875 | 35.7 |
| Rural | 10611 | 54.8 | 49508 | 64.3 |
| **Region** | | | | |
| North Central | 3411 | 15.9 | 13033 | 14.5 |
| Northeast | 2502 | 10.8 | 14450 | 15.5 |
| Northwest | 2800 | 19.5 | 19730 | 30.7 |
| Southeast | 2568 | 14.4 | 6785 | 9.3 |
| South-South | 3637 | 19.5 | 9589 | 12.7 |
| South West | 3337 | 20.3 | 10856 | 17.3 |

Total cases for adolescents= 18255 and the rest of the population 74645. Some variables did not sum up to these figures due to missing cases.

As explained in section 3.4.1.3, the community and state level variables were aggregated and ranked into three groups in SPSS: lower, middle and higher, which was shortened in this study as low, mid and high. Ranked cases seemed not to be evenly distributed, this could be due to tied cases in the NDHS data. However, the margin was not too wide. Using unemployment as an example, low unemployment represents community where small number of people are unemployed. Middle unemployment represents community where a reasonable number of individuals are unemployed, and high unemployment represents communities where high number of individuals are unemployed.

At the community level (not presented in table 4.1), variables were categorised as having mid and high levels of poverty (35% and 25.5% respectively), compared to 39% having low poverty. Similarly, unemployment was at mid and high levels in most communities (37% and 33.2%, respectively), compared to 29.8% at a moderate level of unemployment. This trend was similar regarding the exposure to family planning messages. Stigma was low and mid in most communities (37.7%, 31.7% respectively), compared to a 30.6% having high stigma. At the state level, media exposure variable was categorised as having low and mid-media exposure (25% and 31.3%), compared to 43.7% high media exposure. Similarly, year of education in single year was low and mid in most states (20.3% and 38.6% respectively), compared to 41.1% having high year of education in single years. Stigma was low and mid in most states (34% and 36.4%), compared to 29.6% having high level of stigma.

## 4.6 Bivariate analysis results

### 4.6.1 Trends in comprehensive knowledge of HIV and AIDS

One of the objectives of this chapter is to examine the trends in comprehensive knowledge of HIV among unmarried adolescents in Nigeria. Figure 4.2 shows the overall trends in CKH by gender among unmarried adolescents aged 15-19 from 2003 to 2013. Overall, CKH among unmarried adolescents more or less doubled from 2003 to 2008, then stalled in 2013. There was a significant increase from 19.5% to 35.6% and 20.8% to 30.4% between 2003 and 2008 for male and female

adolescents respectively (p<0.001). There was no apparent increase in CKH for both male and female adolescents since 2008. The proportion of adolescents aged 15-19 with CKH seemed to be relatively constant for both male and female adolescents from 2008 to 2013. In 2003, CKH was higher among female adolescents compared to their male counterparts, but the trend reversed in 2008 and 2013 where the adolescent males were observed to have more CKH than their female counterparts.

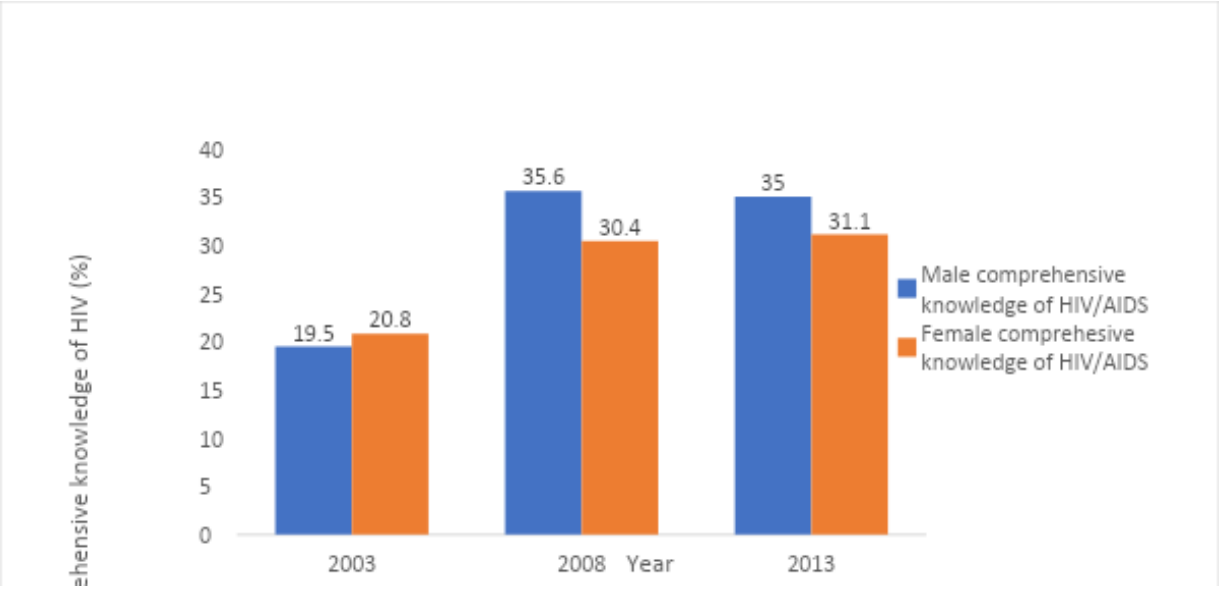



Figure 4.2: Trends in CKH among unmarried adolescents aged 15-19 by Survey year, according to Gender in Nigeria

### 4.6.2 Individual and family level factors

**Ever tested for HIV**

Tables 4.2 and 4.3 show that adolescent males and females who had ever been tested for HIV have more CKH than those never tested for HIV. Comprehensive Knowledge of HIV among unmarried adolescents who had been tested for HIV doubled between 2003 and 2008 (18.7% to 47.2% for females and 21.1% to 50.5% for the males) and declined in 2013 for both groups of respondents (37.7% for females and 41.4% for males). However, there was no significant association for both male (p<0.424) and female (p<0.424), in 2003 and male respondents in 2013 (p=0.282).

**Knows someone who has died or has HIV/AIDS**

The bivariate results (Table 4.2 and 4.3) showed there was no significant association between knowing someone who has died of having HIV and having CKH in 2003 and 2008 for both female and male unmarried adolescents (p=0.984, 0.973 and 0.279, 0.425), except in 2013 where there was a significant positive association between knowing someone who had HIV and CKH for both groups (p<0.01).

**Ethnicity**

Comprehensive knowledge of HIV doubled among both female and male adolescents who were of Hausa and Igbo ethnic origin, but declined among adolescents from Yoruba ethnic group from 2003 to 2008 (p<0.001). There was a stall in CKH in 2013 among both male and female adolescents across all three major ethnic groups in Nigeria. Overall, unmarried adolescents from Hausa ethnic group were the most likely to have CKH, while those from the Igbo ethnic group were the least likely to have comprehensive knowledge of HIV (p<0.001).

**Education**

Tables 4.2 and 4.3 show that CKH increases with an increase in the level of education across the three years for both male and female adolescents. Unmarried adolescents with secondary education and above are more likely to have CKH than those with primary or no education (p<0.001). CKH tripled among female and male adolescents with no education and primary education, and doubled among those with secondary education and above from 2003 to 2008, but stalled in 2013 for female adolescents and showed a slight increase of 10% on average for their male counterparts (p<0.001).

Table 4.2: Percentage distribution of CKH among female adolescents aged 15-19 by selected individual/family level factors in Nigeria, 2003-2013 NDHS

| Characteristics | 2003 WT (%) | UWT cases | P-value | 2008 WT (%) | UWT cases | P-value | 2013 WT (%) | UWT cases | P-value |
|---|---|---|---|---|---|---|---|---|---|
| Knows someone who has died or has AIDS | | | Ns | | | Ns | | | <0.01 |
| Yes | 15.4 | 324 | | 29.3 | 409 | | 30.7 | 4313 | |
| No | 15.5 | 549 | | 29.4 | 3654 | | 36.8 | 4556 | |
| Ever been tested for HIV | | | Ns | | | <0.001 | | | <0.01 |
| Yes | 18.8 | 32 | | 47.2 | 214 | | 37.7 | 453 | |
| No | 15.2 | 849 | | 28.4 | 3854 | | 30.9 | 4570 | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Ethnicity | | | <0.001 | | | <0.001 | | | <0.001 |
| Hausa | 20.0 | 80 | | 26.9 | 312 | | 28.2 | 915 | |
| Igbo | 11.4 | 202 | | 29.9 | 972 | | 21.5 | 999 | |
| Yoruba | 26.1 | 134 | | 25.0 | 997 | | 32.4 | 940 | |
| Others | 13.1 | 464 | | 32.1 | 1794 | | 37.2 | 2165 | |
| Educational level | | | <0.001 | | | <0.001 | | | <0.001 |
| No education | 4.6 | 65 | | 17.1 | 152 | | 19.4 | 382 | |
| Primary | 6.3 | 160 | | 18.6 | 506 | | 24.4 | 491 | |
| Secondary and above | 18.5 | 655 | | 31.6 | 3423 | | 33.5 | 4156 | |
| Religion | | | Ns | | | Ns | | | Ns |
| Catholic | 11.8 | 187 | | 27.0 | 689 | | 25.8 | 792 | |
| Protestant/Others Christians | 14.8 | 458 | | 31.2 | 2399 | | 33.2 | 2339 | |
| Islam/others | 18.5 | 232 | | 26.4 | 963 | | 32.2 | 1845 | |
| Mass media exposure | | | | | | | | | |
| Exposure to newspaper | | | <0.001 | | | <0.001 | | | <0.001 |
| Not at all | 10.2 | 530 | | 25.7 | 2499 | | 30.0 | 3252 | |
| Less than once a week | 21.6 | 176 | | 35.0 | 842 | | 35.3 | 1071 | |
| At least once a week or more | 25.0 | 172 | | 36.6 | 710 | | 32.8 | 685 | |
| Exposure to radio | | | <0.001 | | | <0.001 | | | <0.001 |
| Not at all | 8.3 | 156 | | 23.4 | 822 | | 25.6 | 1275 | |
| Less than once a week | 8.6 | 151 | | 30.6 | 702 | | 29.5 | 1494 | |
| At least once a week or more | 18.8 | 569 | | 31.1 | 2543 | | 36.2 | 2246 | |
| Exposure to TV | | | <0.001 | | | <0.001 | | | <0.001 |
| Not at all | 9.8 | 255 | | 22.4 | 1060 | | 25.2 | 1229 | |
| Less than once a week | 9.4 | 127 | | 27.7 | 591 | | 30.1 | 1306 | |
| At least once a week or more | 19.6 | 499 | | 33.0 | 2421 | | 35.4 | 2480 | |
| Wealth Index | | | <0.001 | | | <0.001 | | | <0.001 |
| Poorest | 10.6 | 85 | | 18.1 | 293 | | 17.8 | 331 | |
| Poorer | 10.1 | 109 | | 21.2 | 532 | | 24.4 | 693 | |
| Middle | 11.0 | 173 | | 25.8 | 896 | | 28.9 | 1139 | |
| Richer | 15.5 | 238 | | 32.0 | 1098 | | 33.0 | 1364 | |
| Richest | 21.7 | 277 | | 36.0 | 1263 | | 38.5 | 1502 | |
| Age of household head | | | Ns | | | Ns | | | <0.001 |
| 15-24 | 8.7 | 20 | | 32.6 | 169 | | 35.3 | 169 | |
| 25-39 | 13.0 | 102 | | 28.8 | 507 | | 27.7 | 582 | |
| 40-59 | 16.2 | 515 | | 29.7 | 2073 | | 32.6 | 2959 | |
| 60+ | 15.8 | 305 | | 28.8 | 1194 | | 30.3 | 1563 | |
| Sex of Household head | | | Ns | | | Ns | | | Ns |
| Male | 15.4 | 708 | | 29.2 | 2911 | | 31.9 | 3874 | |
| Female | 15.0 | 236 | | 30 | 1040 | | 30.3 | 1404 | |
| Type of place of residence | | | <0.001 | | | <0.001 | | | <0.001 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Urban | 21.8 | 377 | | 33.7 | 1838 | | 33.3 | 2853 | |
| Rural | 10.5 | 504 | | 25.9 | 2243 | | 29.2 | 2175 | |
| *****Unweighted=UWT; Weighted=WT; ns=Non-significant | | | | | | | | | |

**Religion**

Religion influences CKH. Tables 4.2 and 4.3 show that CKH tripled across the three predominant religious groups in Nigeria (Catholic, Protestants/Other Christians and Islam) for both female and male unmarried adolescents (15%, 16% and 7%) and (30%, 22% and 19%) from 2003 to 2008 and declined in 2013 for both groups ($p<0.05$). Those who were Catholic were less likely to have CKH compared to non-Catholics for both groups. However, this was not significant except for male adolescents in 2013.

**Mass Media**

The bivariate results also showed that CKH increases significantly with an increase in mass media exposure for both male and female respondents from 2003 to 2008 and slightly in 2013 for both groups ($p<0.001$). Adolescents who were exposed to mass media at least once a week or more (newspaper, radio and TV) were twice as likely to have CKH than those who were not exposed to mass media for both male and female in 2003 and 2008. The trend stalled in 2013 where there was no noticeable difference between adolescents who read or listened to newspaper, radio or TV once a week or more and those not exposed to mass media at all.

Unmarried male and female adolescents who read print media (Newspapers) were more likely to have more CKH than those who listened to TV and radio while those who listened or are exposed to radio were less likely to have comprehensive knowledge of HIV for both the male and female adolescents ($p<0.001$). There was a significant increase in CKH among unmarried adolescents who have not been exposed to any mass media (newspaper, radio and TV) from 2003 to 2013 compared to their counterparts who had at least been exposed to media less than once or more than once a week for both groups.

Table 4.3: Percentage distribution of CKH among male adolescents 15-19 by selected individual/family level factors in Nigeria, 2003-2013 NDHS

| Characteristics | 2003 WT (%) | UWT cases | P-value | 2008 WT (%) | UWT cases | P-value | 2013 WT (%) | UWT Cases | p-value |
|---|---|---|---|---|---|---|---|---|---|
| Knows someone who has died or has AIDS | | | Ns | | | Ns | | | <0.01 |
| Yes | 12.0 | 133 | | 36.2 | 365 | | 32.0 | 500 | |
| No | 16.1 | 267 | | 34.0 | 1827 | | 38.2 | 2656 | |
| Ever been tested for HIV | | | Ns | | | <0.001 | | | Ns |
| Yes | 21.1 | 19 | | 50.5 | 109 | | 41.4 | 162 | |
| No | 14.4 | 382 | | 33.6 | 2091 | | 37.2 | 3022 | |
| Ethnicity | | | <0.001 | | | <0.001 | | | <0.001 |
| Hausa | 10.3 | 87 | | 37.5 | 403 | | 50.4 | 900 | |
| Igbo | 13.8 | 58 | | 34.6 | 341 | | 36.0 | 491 | |
| Yoruba | 35.3 | 51 | | 31.1 | 424 | | 29.5 | 461 | |
| Others | 11.8 | 203 | | 34.4 | 1027 | | 31.8 | 1332 | |
| Educational level | | | <0.001 | | | <0.001 | | | <0.001 |
| No education | 0.0 | 37 | | 12.6 | 199 | | 29.0 | 411 | |
| Primary | 6.7 | 89 | | 23.6 | 339 | | 31.7 | 388 | |
| Secondary and above | 19.5 | 275 | | 33.9 | 1663 | | 39.8 | 2384 | |
| Religion | | | Ns | | | Ns | | | <0.05 |
| Catholic | 8.2 | 73 | | 37.7 | 316 | | 32.9 | 450 | |
| Protestant/other Christians | 11.8 | 51 | | 35.2 | 1024 | | 34.4 | 1135 | |
| Islam/others | 13.3 | 180 | | 32.4 | 846 | | 40.2 | 587 | |
| Mass media exposure | | | | | | | | | |
| Exposure to newspaper | | | <0.001 | | | <0.001 | | | |
| Not at all | 7.1 | 225 | | 28.1 | 1233 | | 36.1 | 2245 | <0.001 |
| Less than once a week | 22.9 | 96 | | 43.9 | 465 | | 43.6 | 573 | |
| At least once a week | 11.7 | 79 | | 41.5 | 496 | | 36.1 | 355 | |
| Exposure to radio | | | Ns | | | <0.001 | | | |
| Not at all | 0.0 | 18 | | 18.5 | 248 | | 46.1 | 857 | <0.001 |
| Less than once a week | 9.5 | 63 | | 23.9 | 234 | | 33.8 | 831 | |
| At least once a week | 16.6 | 319 | | 38.1 | 1714 | | 34.4 | 1494 | |
| Exposure to TV | | | <0.001 | | | <0.001 | | | |
| Not at all | 7.1 | 84 | | 22.3 | 555 | | 35.3 | 784 | <0.001 |
| Less than once a week | 11.3 | 97 | | 37 | 416 | | 42.3 | 1158 | |
| At least once a week | 19.5 | 220 | | 39 | 1226 | | 36.4 | 795 | |
| Wealth Index | | | <0.001 | | | <0.001 | | | <0.001 |
| Poorest | 4.5 | 67 | | 19.2 | 281 | | 28.0 | 478 | |
| Poorer | 8.0 | 75 | | 26.0 | 362 | | 34.1 | 525 | |
| Middle | 12.7 | 71 | | 34.5 | 470 | | 36.7 | 738 | |
| Richer | 15.4 | 104 | | 41.6 | 570 | | 39.7 | 731 | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Richest | 29.8 | 84 | | 42.0 | 490 | | 44.3 | 713 | |
| Age of Household head | | | Ns | | | <0.001 | | | <0.001 |
| 15-24 | 20.0 | 28 | | 36.7 | 232 | | 40.7 | 214 | |
| 25-39 | 18.8 | 51 | | 34.9 | 263 | | 31.7 | 334 | |
| 40-59 | 13.3 | 206 | | 35.0 | 1077 | | 37.7 | 1753 | |
| 60 and above | 13.6 | 113 | | 31.8 | 650 | | 38.1 | 957 | |
| Sex of Household head | | | <0.05 | | | Ns | | | Ns |
| Male | 12.9 | 318 | | 34.3 | 1839 | | 37.1 | 2639 | |
| Female | 23.0 | 81 | | 33.8 | 385 | | 38.6 | 623 | |
| Place of residence | | | <0.001 | | | <0.001 | | | <0.001 |
| Urban | 19.5 | 154 | | 40.8 | 852 | | 42.7 | 1509 | |
| Rural | 11.7 | 247 | | 30.3 | 1349 | | 32.5 | 1675 | |
| | | *****Unweighted=UWT; Weighted=WT | | | | | | | |

**Wealth**

Comprehensive knowledge of HIV among unmarried male and female adolescents increased with an increase in wealth index (Tables 4.2 and 4.3). Unmarried adolescents from high income (richest) families were twice as likely to have CKH across the three survey years (21.7%, 36%, 38.5%) than those from poorest families (10.6%, 18.1%, 17.8%) ($p<0.001$). There was a considerable increase in CKH from 2003 to 2008 for both male and female adolescents and a stall in 2013, especially among those from high wealth index households.

**Place of residence**

As expected, female adolescents in urban areas have more CKH (21.8%, 33.7% and 33.3%) than their rural counterparts (10.5%, 25.9% and 29.2%). Similarly, male adolescents who reside in urban areas have more CKH (19.4%, 40.8% and 42.7%) than their rural peers (11.7%, 30.3% and 32.5%) ($p<0.001$) in each of the survey years.

**Age of household head**

Age of household head was significantly associated with CKH. The results showed that adolescents in a youth headed household (15-24) were more likely to have CKH than those in an adult headed household (60 and above) across the three years survey except for female adolescents in 2003

where those in a youth headed household had lower CKH (15-24) than those in an adult headed household (60 and above) (P<0.001).

**Sex of Household head**

Sex of household head was not significantly associated with CKH among adolescents except for the boys in 2003 where it showed that adolescents in a female headed household (23%) were more likely to have CKH than those in a male headed household (12.9%) (p<0.05).

### 4.6.3 Contextual level factors (Community and state)

The bivariate results in table 4.4 showed that all the community and state level factors were significantly associated with CKH. Adolescents who live in a community with a high proportion of the population living in urban areas were more likely to have comprehensive knowledge of HIV (34.3%) than those who live in a community where a high proportion of individuals live in the mid-rural (32.1) and rural (29%) communities. Adolescents who live in a community with a low proportion of the population in poverty were more likely to have CKH than those who live in communities where the proportion of individuals live in mid (32.6%) and high poverty (26.2%) (p<0.001). Adolescents who live in a community with a low proportion of individuals with stigmatising attitude were more likely to have CKH (34.9%) than those who live in communities with a mid (32%) and high (28.9%) stigmatising attitude. Adolescents who live in communities with low proportion of individuals exposed to family planning (FP) messages were less likely to have CKH (27.5%) than those who live in a community where a high proportion of individuals have mid (31.8%) and high (33.1%) FP message exposure (p<0.001). Community-level unemployment showed a similar trend.

Table 4.4: Percentage distribution of CKH among adolescents aged 15-19 by community and state level factors in Nigeria, 2003-2013 NDHS

| Characteristics | Weighted % | Unweighted Cases | P-Value |
|---|---|---|---|
| Community level factors | | | |
| Community place of residence | | | <0.001 |
| Urban | 34.1 | 6473 | |
| Mid-Rural | 32.1 | 4871 | |
| Rural | 29.0 | 4446 | |
| Poverty level | | | |
| Low | 34.9 | 6629 | |

| | | | |
|---|---|---|---|
| Mid | 32.6 | 5467 | |
| High | 26.2 | 3695 | |
| Stigma level | | | <0.001 |
| Low | 34.9 | 5816 | |
| Mid | 32 | 5117 | |
| High | 28.9 | 4858 | |
| FP message exposure | | | <0.001 |
| Low | 27.5 | 3991 | |
| Mid | 31.8 | 5399 | |
| High | 33.1 | 6402 | |
| Unemployment level | | | |
| Low | 28.6 | 4906 | <0.001 |
| Mid | 30.4 | 5481 | |
| High | 34.5 | 5404 | |
| State level factors | | | |
| Media exposure | | | <0.001 |
| Low | 35.8 | 3902 | |
| Mid | 30.7 | 5138 | |
| High | 29.0 | 6751 | |
| Stigma level | | | <0.001 |
| Low | 31.4 | 5555 | |
| Mid | 28.9 | 4862 | |
| High | 31.2 | 5373 | |
| Educational years | | | <0.001 |
| Low | 34.3 | 3537 | |
| Mid | 31.3 | 5453 | |
| High | 31.2 | 6800 | |

At the state level, media exposure, stigma educational years and Region were significantly associated with CKH. Adolescents who live in states with a low proportion of individuals exposed to mass media messages were more likely to have CKH (35.8%%) than those who live in states where a proportion of individuals have mid (30.7%) and high (29%) mass media exposure ($p<0.001$). A similar trend applies to both the state level stigma and educational years in the state (See table 4.4).

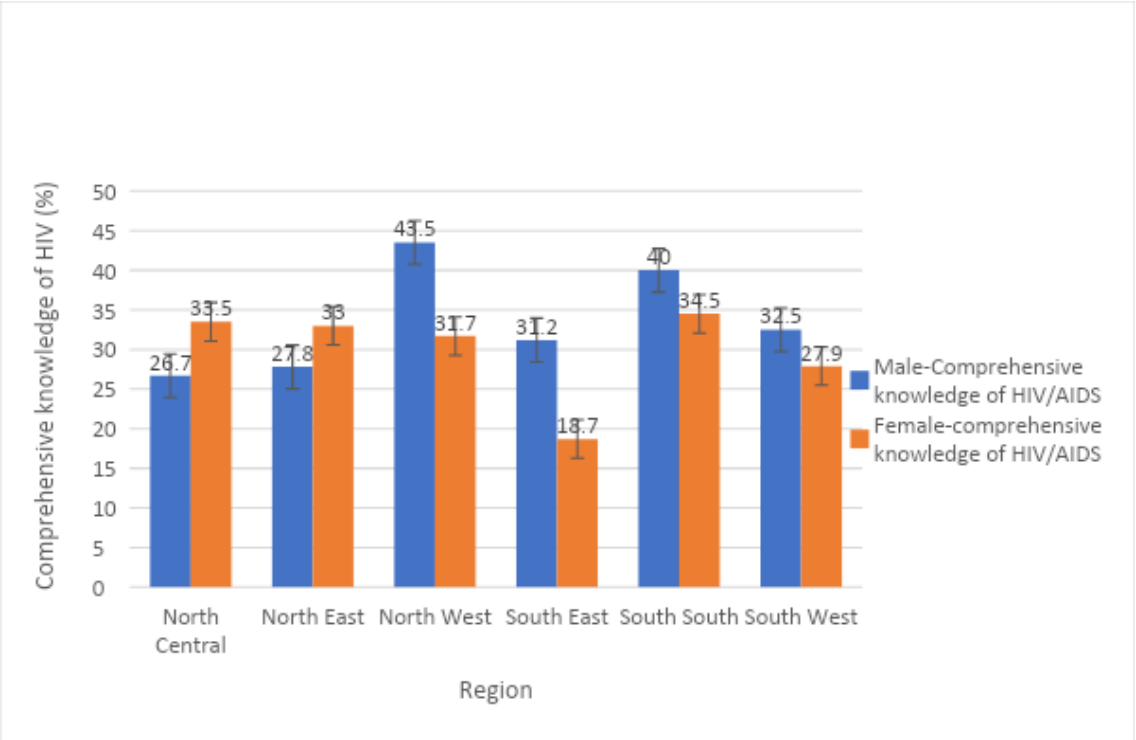



Figure 4.3: Regional distribution of Comprehensive Knowledge of HIV by gender, Nigeria DHS 2003-2013.

Also, figure 3 shows variation in CKH among unmarried male and female adolescents across the six geo-political zones in Nigeria, from 2003 to 2013. Overall, CKH across the regions for both male and female adolescent was less than 44%. Against expectation, CKH was highest among the boys in the North-Western regions (44.5%) and lowest among the girls in South Eastern region (18.7%). Unmarried adolescents' boys who live in the North-Western part of Nigeria were almost twice (43.5%) more likely than their peers in North-Central (26.7%) to have CKH ($p<0.001$). Likewise, adolescents' girls who live in the South-Southern region (34.5%) were also twice more likely than their counterparts in the South-Eastern region (18.7%) to have CKH ($p<0.001$).

### 4.6.4 Multilevel analysis results

This section presents the results of the multivariate analysis of CKH. The multivariate analysis was undertaken in this study as a means of controlling potential confounders that may distort the relationship between CKH and the key explanatory variables in this study (Aschengrau and Seage, 2009).

Table 4.5 shows the odds' ratios associated with CKH for unmarried adolescents in Nigeria. This study examines how the variation in CKH could be attributed to different sets of individual, family,

community and state level factors. The association between CKH and independent variables was measured using the odds' ratios (ORs). An odds' ratio that is more than 1 depicts a positive association while less than 1 depicts a negative association. The community and state level effects were assessed using the intracluster/state correlations (See section 4.4.2 for the contextual measures included in the models). Model 0 is an empty model with no variable added. Its purpose is to test for the random effect of cluster (community) and state variability. The result showed the intra-community (cluster) and intra-state correlation coefficient of the empty model (No variable included) to be 23.2% (0.446+0.547)/(0.547+0.446+3.29) and 12.8% (0.547/(0.547+0.446+3.29), respectively. With only the year of the survey included in the empty model, the results showed that adolescents were three times more likely to have CKH in 2008 and 2013 than in the 2003 survey.

In Model 1, only the individual level variables were included. When all the individual level variables were included into the model, the results showed that gender, age, ethnicity, education, religion, employment status, ever tested for HIV and contraceptive knowledge were significantly associated with having comprehensive knowledge of HIV. Adolescent females had lower odds of having CKH than their male counterparts (OR=0.83; 95% CI: 0.76-0.90; $p<0.05$). Adolescents aged 18-19 were 1.3 times more likely to have CKH than younger adolescents (aged 15-17). Those who were of Igbo, Yoruba and Other ethnic extraction were 59%, 56% and 23% less likely to have CKH than those of Hausa ethnic group ($p<0.05$), respectively. Comprehensive Knowledge of HIV increases with an increase in the level of education. Adolescents with primary, and secondary education and above were 1.4 and 2.4 times more likely to have CKH than those with no education.

Adolescents who were employed were less likely to have CKH than those unemployed (OR=0.71; 95%CI: 0.65-0.79; $p<0.05$). Those who had ever been tested for HIV and those who know of a method of contraception were 1.6 times and 2.3 times more likely to had CKH compared to those never tested for HIV or do not know any contraceptive method respectively. Adolescents of other Christian faith (Protestants/Pentecostal) (OR=1.12; 95%CI: 0.97-1.28; $p<0.05$) and the Islamic faith (OR=1.04; 95%CI: 0.87-1.24; $p<0.05$) were more likely to have CKH than those of Catholic faith.

In addition, the level 2 effect was estimated in model 1 (Estimate=0.508, SE=0.124, i.e. Z-value of 3.9 at 1% sig. level). After controlling for the individual level variables, the intra-community correlation (ICC) decreased from 23.2% in the empty model to 21.7% (0.508+0.408)/

(0.508+0.408+3.29) in Model 1. Also, the ICC for the state decreased from 12.8% in the empty Model to 9.7% (0.408/ (0.408+0.508+3.29) in Model 1.

Model 2 controlled for the family level factors. The results showed that the individual level factors remained significantly associated with having CKH when the family level factors were added into the model. Wealth index and age of the household head were significantly associated with CKH. Adolescents who live in an adult headed household (25-39 years old) were less likely to have CKH than those who live in a youth headed household (15-24 years old). There was no significant association between adolescents who live in a family where the household head was 40 years old and above and those in a youth headed household (Aged 15-24) years old. Sex of household head showed no significant association with CKH. Increase in the level of wealth index increases the odds of having CKH. Adolescents in the richest wealth quintile were almost three times as likely to have CKH compared to those in the poorest wealth quintile. However, there was no significant association in having CKH among adolescents from the poorer and poorest wealth quintiles.

Also, controlling for the family level variables, the ICC decreased from 21.73% in Model 1 to 20.9% (0.554+0.317)/(0.554+0.317+3.29) in Model 2. Also, the intra-state correlation decreased from 9.7% in Model 1 to 7.6% (0.317/0.317+0.554+3.29) in Model 2.

Table 4.5: Multilevel odds ratios of individual and contextual factors of CKH among unmarried adolescents in Nigeria 2003-2-13 NDHS

| | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| PARAMETER | OR (95% CI) | OR (95% CI) | OR (95% CI) | OR (95% CI) |
| Cons | | | | |
| Year (2003) | | | | |
| 2008 | 3.02(2.19-4.17)* | 3.05(2.21-4.20)* | 3.01(2.17-4.16)* | 3.00(2.17-4.16)* |
| 2013 | 2.72(1.98-3.74)* | 2.68(1.95-3.69)* | 2.66(1.93-3.67)* | 2.64(1.91-3.64)* |
| Gender (Male) | | | | |
| Female) | 0.83(0.76-0.90)* | 0.80(0.74-0.88)* | 0.80(0.74-0.88)* | 0.80(0.73-0.87)* |
| Year (15-17) | | | | |
| 18-19 | 1.33(1.22-1.45)* | 1.32(1.21-1.43)* | 1.31(1.21-1.43)* | 1.31(1.21-1.43)* |
| Ethnicity (Hausa) | | | | |
| Igbo | 0.49(0.40-0.61)* | 0.45(0.36-0.55)* | 0.47(0.38-0.58)* | 1.22(0.91-1.61) |
| Yoruba | 0.44(0.39-0.57)* | 0.40(0.33-0.48)* | 0.43(0.35-0.52)* | 0.71(0.54-0.91)* |
| Others | 0.77(0.65-0.90)* | 0.76(0.64-0.90)* | 0.77(0.65-0.91)* | 1.07(0.86-1.33) |
| Education (No education) | | | | |
| Primary | 1.43(1.14-1.79)* | 1.26(1.00-1.58)* | 1.28(1.02-1.61)* | 1.23(0.98-1.55) |
| Secondary and above | 2.44(2.00-2.98)* | 1.86(1.50-2.29)* | 1.88(1.52-2.32)* | 1.81(1.47-2.24)* |

| | | | | |
|---|---|---|---|---|
| Employment (unemployed) | | | | |
| Employed | 0.71(0.65-0.79)* | 0.76(0.69-0.84)* | 0.77(0.70-0.85)* | 0.77(0.70-0.85)* |
| Ever tested for HIV (No) | | | | |
| Yes | 1.58(1.35-1.85)* | 1.50(1.28-1.75)* | 1.50(1.28-1.76)* | 1.50(1.28-1.75)* |
| Contraceptive knowledge (No) | | | | |
| Yes | 2.34(2.05-2.68)* | 2.25(1.97-2.57)* | 2.25(1.97-2.57)* | 2.27(1.98-2.60)* |
| Religion (Catholic) | | | | |
| Other Christians | 1.12(0.97-1.28) | 1.10(0.96-1.26) | 1.09(0.95-1.25) | 1.10(0.95-1.26) |
| Islam | 1.04(0.87-1.24) | 1.00(0.84-1.19) | 0.99(0.83-1.19) | 1.00(0.84-1.20) |
| Others/traditionalist | 1.16(0.71-1.91) | 1.19(0.72-1.96) | 1.18(0.72-1.95) | 1.17(0.71-1.93) |
| Age of household head (15-24) | | | | |
| 25-39 | | 0.82(0.67-1.01)* | 0.82(0.67-1.01)* | 0.82(0.67-1.02) |
| 40-59 | | 0.89(0.75-1.07) | 0.89(0.75-1.07) | 0.90(0.75-1.07) |
| 60 and above | | 0.89(0.74-1.08) | 0.89(0.74-1.08) | 0.90(0.74-1.08) |
| Sex of household head (female) | | | | |
| Male | | 1.06(0.96-1.17) | 1.06(0.96-1.17) | 1.06(0.96-1.17) |
| Wealth index (Poorest) | | | | |
| Poorer | | 1.17(0.96-1.41) | 1.15(0.95-1.40) | 1.16(0.95-1.40) |
| Middle | | 1.51(1.25-1.82)* | 1.45(1.20-1.76)* | 1.45(1.20-1.76)* |
| Richer | | 1.89(1.56-2.29)* | 1.78(1.46-2.18)* | 1.78(1.46-2.17)* |
| Richest | | 2.55(2.09-3.11)* | 2.37(1.92-2.92)* | 2.37(1.92-2.93)* |
| Community level factors | | | | |
| Place of residence (Urban) | | | | |
| Mid rural | | | 1.08(0.96-1.23) | 1.08(0.96-1.23) |
| Rural | | | 1.07(0.93-1.24) | 1.07(0.92-1.23) |
| Poverty level (low) | | | | |
| Mid | | | 0.97(0.83-1.11) | 0.98(0.85-1.12) |
| High | | | 0.94(0.77-1.15) | 0.96(0.79-1.18) |
| Stigma level (low) | | | | |
| Mid | | | 0.97(0.86-1.09) | 0.98(0.87-1.10) |
| High | | | 0.95(0.84-1.07) | 0.93(0.82-1.06) |
| FP messages (Low) | | | | |
| Mid | | | 1.03(0.89-1.19) | 1.04(0.90-1.21) |
| High | | | 1.13(0.95-1.35) | 1.16(0.97-1.39) |
| Unemployment level (Low) | | | | |
| Mid | | | 1.06(0.94-1.20) | 1.06(0.94-1.20) |
| High | | | 1.17(1.03-1.33)* | 1.18(1.03-1.34)* |
| State level factors | | | | |
| Media exposure (Low) | | | | |
| Mid | | | | 0.63(0.52-0.77)* |
| High | | | | 0.62(0.50-0.76)* |

| | | | | |
|---|---|---|---|---|
| HIV Stigma level (Low) | | | | |
| Mid | | | | 0.94(0.81-1.09) |
| High | | | | 1.03(0.89-1.18) |
| Highest year of education level (Low) | | | | |
| Mid | | | | 1.52(1.21-1.92)* |
| Highest | | | | 1.38(1.02-1.85)* |
| Region (North Central) | | | | |
| Northeast | | | | 1.18(0.95-1.48) |
| Northwest | | | | 2.13(1,67-2.72)* |
| Southeast | | | | 0.46(0.34-0.62)* |
| South-South | | | | 1.06(0.86-1.32) |
| Southwest | | | | 0.74(0.58-0.96)* |
| Community level random variance | 0.508(0.124) * | 0.554(0.125) * | 0.563(0.125) * | 0.533(0.124) * |
| Intra-community Correlation=VPC | 21.7% | 20.9% | 20.6% | 19.4% |
| State Level Random Variance | 0.408(0.122) * | 0.317(0.122) * | 0.294(0.121) * | 0.260(0.121)* |
| Intra-State Correlation | 9.7% | 7.6% | 7.1% | 6.4% |
| Intra-class correlation (ICC), Variance partition coefficient (VPC) *Statistical significance at 5% level, P<0.05; Empty model=No variable included | | | | |

Model 3 in table 4.5 controlled for community-level factors. The results showed that the individual and family level factors remained significantly associated with having CKH, except the variables reported to be insignificant in Model 1 and 2. The odds for individual and family level variables slightly decreased except for education and employment status, where there was a slight increase in the odds of having comprehensive knowledge of HIV. Unemployment level at the community was the only variable found to be significantly associated with CKH among adolescents. Adolescents who live in a community with a high proportion of individuals who were unemployed were associated with increased odds of having CKH (OR=1.17; 95%CI: 1.03-1.33; p<0.05). Also, the intra-community correlation showed that 20.6% of the total unexplained variations in the odds of having CKH was attributable to the community level factors while 79.4% was attributable to other factors.

In the last model in table 4.5, the state level factors were controlled for. Including the state level factors in the model, the results showed that all the individual level factors, family and community

level factors remained significantly the same as observed in models 1-3 except religion and age of household head that ceased to be significant. Controlling for the state level factors revealed the effects of adolescents from the Igbo and those who had only primary level education such that both variables ceased to be significantly associated with CKH. Only the region, the state level media exposure and education years in the state were found to be significantly associated with CKH. Compared to adolescents who live in states with low exposure to mass media messages, those who live in the states with high proportion of individuals exposed to mass media messages were 38% less likely to have CKH. There was no significant difference in having CKH between those who were exposed to low and mid-level of mass media messages in the state. Also, compared to adolescents who live in a state where a proportional of individuals have low education years in a single year, those who live in the state with a mid and high educational years were 1.5 and 1.4 times more likely to have CKH.

Adolescents who live in Northwest were almost twice more likely to have CKH than those who live in North Central. Those who live in the South East and those who live in South West were 64% and 29% less likely to have CKH than those from the North Central region of Nigeria. There was no significant association in CKH among adolescents who live in North East, South-South and those from the North Central region of Nigeria. Finally, the intra-state correlation showed that 6.4% of the total unexplained variations in the odds of having comprehensive knowledge of HIV was attributable to the state level factors while 93.6% was attributable to others factors.

## 4.7 Discussion

This chapter investigates the trends and determinants of CKH among unmarried adolescents in Nigeria. Overall, the results showed a considerable increase in CKH from 2003 to 2008. The proportion of unmarried adolescents aged 15-19 with CKH seemed to be relatively constant for both male and female adolescents in 2008 to 2013. In 2003, CKH was highest among female adolescents than their male counterparts, but the trend reversed between 2008 and 2013 in which male adolescents were observed to have more CKH than their female counterparts. The changes in the patterns of CKH could be attributed to the observed variability in the implementation of National Family Life and HIV Education (FLHE) across states in Nigeria. The FLHE curriculum was developed in 2003 with the goal of creating awareness of HIV/AIDS and other SRH matters among adolescents in Nigeria. However, a review carried out after 12 years of implementation found that

many state governments embraced FLHE in Nigeria in the first 5 years and thereafter there was lacklustre execution of the programme. This was because the Federal Ministry of Health transferred the responsibility of implementation of FLHE to the State Ministry of Health, leading to a decline in nationwide rollout due to lack of financial, technical support and political will at the state level. This may explain why CKH was slightly higher among adolescent girls than boys in 2003 and why this was reversed in 2008 and 2013. It is believed that the delivery of FLHE in schools made it more accessible for girls who could not have access to sexual health information on social media due to financial constraints and institutional barriers, unlike the boys who could afford to engage with social media platforms. Bivariate analysis results of the percentage distribution of CKH among adolescents by socio-cultural, demographic and spatial factors in table 4.2 and 4.3 showed a similar trend in CKH. Almost all the factors examined in the study showed an appreciable increase from 2003 to 2008 and a stall in 2013.

Similar results were recorded in other studies in Nigeria (Oginni, et al., 2017), Bangladesh (Sheikh, 2017), Ghana (Fenny et al. 2017) and except in Kenya where there was a significant increase in CKH (Ochako et al., 2011). The quantitative study in Bangladesh found that women's knowledge about HIV/AIDS has been decreasing over the years from 2007 to 2014. In another study in Ghana, despite focusing on men and women, a significant decrease in CKH from 72% in 2008 to 59% was reported in 2013. Conversely, Ochako et al. (2011) in a study to determine the trends and determinants of CKH among urban young women in Kenya found a significant increase in CKH from 9% in 1993 to 54% in 2008/09. The decline in CKH among adolescents in the current study may suggest that the pre-2008 interventions had more impact on the sexual health of adolescents than the post-2008 interventions/programmes, therefore indicating that the Family Life HIV Education (FLHE) programmes need to be encouraged and widely supported across the states in Nigeria. Adolescents' SRH outcomes significantly improved during the period (from 2003-2008) that the FLHE programme was supported by many state governments and other critical stakeholders in Nigeria. Evidence has shown that School-based Sexuality Education is a cost-effective way to increase access and utilisation of SRH services by adolescents (Knopf et al., 2016).

Concerning My Question and Answer platform (MyQ&A) as explained in the background, the programme started in 2005 with an integration of the web component in 2007 and the National Call Centre for HIV/AIDS and other related diseases (NCCD). The results showed no appreciable

increase in CKH among unmarried adolescents from 2008 to 2013. These results may suggest that MyQ&A and the NCCD had little or no impact on an adolescent's CKH after 5 years of implementation (2008-2013). Although, some factors may have affected this. For example, the awareness of the programme may not have cut across all the states as at the time this nationally-representative data was collected across the 36 states in Nigeria. Therefore, the 2018 NDHS data is in a better position than the 2013 data to give a clear picture of the effectiveness of MyQ&A intervention in improving CKH as it would help to show impact after ten years (2008-2018) of implementation

The results showed that gender, age, ethnicity, education, employment status, ever tested for HIV, contraceptive knowledge were significantly associated with having CKH. Adolescent boys were more likely to have CKH than girls. The effect of gender was consistent with the studies conducted in other countries (Orjira et al. 2013; Yadav et al. 2015). A research by Orjira et al. (2013) in Eastern Ethiopia found that females were 40% less likely to have CKH than the males. Yadav et al. (2015) study in India among young people revealed a similar trend that CKH among the boys was higher compared to the girls. The study found that the girls were 48% less likely to have CKH than the boys. This could be due to the socio-economic and gender disparities that exist in our society. Female adolescents are more vulnerable and are more likely to have limited opportunities due to multiple family and household responsibilities. In some developing countries, girls are less likely to be in school and have less access to social media compared to the boys. Formal education may provide adolescent girls with the information required to make informed choices and motivate them to have some better career opportunities (Eric et al., 2009).

An adolescent's age was found to be significantly associated with having CKH. Older adolescents aged 18-19 were more likely to have CKH than their younger counterparts (aged 15-17) (OR=1.31; CI: 95% 1.21-1.43; P<0.05). The effect of age was similar to other studies in India (Megabiaw and Awoke, 2013), East African (Teshome and Youjie, 2016) and Sierra-Leone (Gebregergish, 2015). These studies found that older adolescents aged 20-24 had higher odds of having CKH than those aged 15-19. This was also the case in Kenya, where younger women were seen to have lower odds of CKH than older women. This is of course not coming as a surprise as older adolescents are more experienced in sexual health issues. Older adolescents may have had children which places them in a better position to visit a health clinic as opposed to younger ones who are culturally limited.

However, this study did not arrive at the same conclusions as other studies in Nicaragua (Manji *et al.,* 2007) and Bangladesh (Rahman *et al.* 2009). The contrast in findings could partly be explained because the study in Bangladesh compared young adolescents aged 10-14 with those aged 15-19, which is different from this study group, while the study by Manji *et al.,* (2007) examines only urban young people. These differences in the sample of interest could potentially give rise to the different findings and conclusions between the studies. The ethnic group of an adolescent boy or girl predicts their level of CKH. This study found that adolescents of Igbo and Yoruba ethnic group were less likely to have CKH than those from the Hausa ethnic group. It is worth mentioning that the Hausas are predominantly Muslims and reside mainly in the Northern part of Nigeria while the Igbos and Yoruba's are largely Christians and live in the Southern part of Nigeria. Economic indices have shown that the Southerners are more educated and social economically viable than the Northerners. So, one would expect adolescents who live in the Southern part of the country to have more CKH than those in the Northern part as they are more due to the influence of education attainment and wealth index on CKH (Habibov, 2016; Ciampa, *et al.,* 2012; Ochako, et al., 2011). This may mean that there are other factors influencing adolescents CKH beyond the socio-economic factors. Adolescent boys and girls who were of Catholic faith had less CKH than those from other faiths. This could be due to the attitude and stance of the Catholic church on adolescent's Sexual behaviour and Reproductive Health, which could limit adolescent's exposure to SRH information including CKH (Catholics for a Free Choice, 2004)

Several studies have found significantly higher odds of CKH among adolescents with higher educational attainment than those with no education or primary education (Khanal, 2013; Teshome, 2016; Oljira, et al., 2013, Zainiddinov and Habibov, 2016, Ciampa, *et al.,* 2012; Ochako, et al., 2011). The results presented here further establish that the odds of having CKH were higher among adolescents with higher education attainment than those with low education attainment. This is the same for both boys and girls. This disparity could be because formal education brings about better-informed choices, can strongly affect reasoning ability and improves adolescents' capacity to analyse and understand HIV risk-related behaviour (Baker *et al.* 2011). Also, it provides adolescents with the required information needed to prevent infection (Eric et al. 2009). Employment status was found to be a significant predictor of CKH. Adolescents who were employed have lower odds of having comprehensive knowledge of HIV/AIDS, possibly associated with education. In Nigeria, most adolescents aged 15-19 are usually in full-time education and

thereby do not undertake any employment activities while those who are employed are generally out of school. Those who are in school are more likely to be exposed to sexual education than the out-of-school adolescents. This explains the reason why those in employment were less likely to have CKH.

Adolescents who know at least one contraceptives method were more than twice as likely to have CKH than those who have no CKH. The bivariate results showed that adolescents who were exposed to mass media messages have higher odds of having CKH (Ciampa et al. 2012; Gupta and Miltra 1999; Khanal 2013; Oljira et al. 2013). This study found that household wealth was significantly associated with CKH. Adolescents in the richest wealth quintile are more than twice as likely to have CKH compared to those in the poorest wealth quintiles. Several studies in Kenya, Nepal and Ethiopia have found a similar association between wealth index and CKH (Gebregergish, 2015; Khanal, 2013; Oljira et al., 2013; Teshome, 2016; Zainiddinovand and Habibov, 2016). Most adolescents from high wealth index families are more likely to complete secondary education and above, thereby having more information to make informed choices. It is also believed that adolescents from households in higher wealth quintiles are more likely to have access to media messages via TV and radio. Evidence has shown that exposure to mass media influences adolescents' knowledge of HIV (Guptra and Miltra, 1999). Age of household head was found to be a significant determinant of CKH. Adolescent boys and girls were more likely to have a CKH if they live in a youth headed household. This could be because adolescents in youth headed households are possibly the head in these households and as a result, have more freedom and autonomy accessing relevant sexual health information. Mardi et al. (2018) in a qualitative study among teen women in Iran posited that lack of autonomy influences adolescent's use of SRH services.

At the community level, unemployment showed a significant correlation with CKH. Adolescents who live in a community with a high proportion of the population unemployed were more likely to have CKH. This observation in the study could be because, in Nigeria, regions with a high unemployment rate are masked with high poverty rate and in recent times, most interventions in Nigeria have focused on deprived areas such as this. Organisations delivering HIV/AIDS services due to limited resources focus more on less developed areas of the country where it is perceived that the prevalence of HIV/AIDS is high. For example, Education as Vaccine (EVA) is one of the leading NGOs in HIV prevention education. Administratively, they are located in Abuja but carry

out their HIV intervention work in deprived communities. This perhaps could explain why adolescents in the North were more likely to have CKH than those in the South.

At the state level, living in states with a high proportion of the population exposed to media messages was negatively associated with CKH. This shows that exposing the general population to media messages does not influence adolescents CKH. Although, most SRH information in Nigeria is communicated via the media (TV, radio and print media), and however, most times, these messages are tailored to appeal to young people using their preferred language and jargons, which other people in the community may not comprehend.

Similarly, living in states with high proportion of individuals with highest education years was correlated with having CKH. Evidence from studies (Khanal, 2013; Teshome, 2016; Oljira et al., 2013, Zainiddinov and Habibov, 2016, Ochako, et al., 2011) showed that CKH increases with an increase in the level of education. Adolescents who live in these communities could potentially be influenced positively, and this could impact on their SRH knowledge. Also, it was highlighted in the result that adolescents in the North were largely more likely to have CKH as against those in the South. This further supports the explanation on ethnicity and unemployment in the community where similar revelation was made.

Finally, the intra-community correlation in the analysis showed the community level variation in CKH. The study found significant community variations in CKH. The study found that about 19.4% of the total unexplained variation in CKH among unmarried adolescents in Nigeria was attributed to variances across communities and 6.4% of the total unexplained variation in CKH among unmarried adolescents were attributed to variance across states. These findings support the theoretical framework (Social Ecological model) used in the study, which suggest that factors at the mesosystem (community) and the macrosystem (state) affect individual health outcome (Salazar et al. 2009).

## 4.8 Conclusion

Overall, the findings showed a definite increase in CKH among unmarried male and female adolescents from 2003 to 2008 but stalled in 2013. This is a clear indication that the FLHE, “MyQuestion and MyAnswer (MyQ&A) and the National Call centre intervention” seem not to have a significant effect in improving unmarried adolescents’ CKH between 2008 to 2013. The

multivariate results showed the effect of the individual, family, community and state level factors on CKH. The multivariate results showed a relatively large variation across communities and states in Nigeria. The individual-level factors accounted for most of the variations than the contextual level factors. The unemployment level in the community was positively associated with CKH. This may suggest the need to focus interventions on the out-of-school adolescents especially in the northern part of Nigeria. Mass media exposure and educational years were negatively and positively associated with CKH. The evidence from the study shows that the "MyQuestion and Answer" media platform alone would not produce the appreciable outcome for CKH among young people in Nigeria. The FLHE programme in Nigeria should be revived and implemented across the states with the strong backing of all key public health actors at the local and national level. The next chapter examines the determinants of contraceptive use among adolescents in Nigeria.

# Chapter 5: Trends and determinants of contraceptive use among unmarried adolescents in Nigeria.

## 5.1 Introduction

This chapter presents the results of the trends and determinants of contraceptive use among unmarried adolescents in Nigeria. Contraceptive access and use are an integral component of women healthcare. This chapter adds to the overall thesis argument by providing empirical evidence to show the interrelated factors that influence and hinder adolescents access and use of contraceptive, which is one of the indicators of global monitoring of reproductive healthcare access and use among adolescents (WHO, 2006). The analyses in this chapter focus on all the unmarried adolescents aged 15-19 as they are arguably at the greatest risk of exposure to unwanted pregnancy, sexually transmitted diseases (STDs) and are often stigmatised in accessing Sexual and Reproductive Health (SRH) services in Nigeria. Averting unwanted pregnancy, HIV transmission and unsafe abortion among adolescents are public health priorities at the local, national and international level due to the high economic, social and health implications for the society and government (Solomon-Fears, 2015).

## 5.2 Family planning (contraceptive use): Nigerian context

Family planning through the use of modern contraceptives is one of the most cost-effective ways to prevent maternal, infant, and child mortality. It can reduce maternal mortality by reducing the number of unintended pregnancies, the number of abortions, and the proportion of births at high risk (Lule, *et al.* 2007). In 2011, the Federal Ministry of Health launched the family planning and child spacing programmes. This led to the approval of distribution of free family planning supplies in public health facilities and an increased commitment from reproductive health programmes (FMoH, 2013). This commitment was heightened further during the London Summit on Family Planning that focused mainly on increasing demand and support for family planning by removing barriers to its access and use. The aftermath of the summit led to the development of the Nigeria Family Planning Blueprint (NFPB). The NFPB is a well-articulated strategy that holistically addresses the gaps in the provision of high-quality family planning services in Nigeria (Federal Ministry of Health, 2014). This is with the expectation that this move will increase contraceptive prevalent rate

(CPR) from 15% to 36% and will help to avert 400,000 infant and 700,000 child deaths, as well as 1.6 million unintended pregnancies, especially among adolescents (Federal Ministry of Health, 2014). However, despite the above strategic plans and blueprint, the national CPR still stood at 16% in 2016. This indicates the need to understand the reasons for low uptake of contraceptive among adolescents.

Evidence from the literature shows that individual level factors (Amsalu-Felekeet et al., 2013; Hall; et al., 2012; Kamal, 2012; Bicetre, 2004; Obare, et al., 2011; Çelik, and Esin, 2012; Chimbindi; *et al*., 2010; Salehi, *et al.,* 2014) facility level factors (Orji and Onwudiegwu, 2002; Magadi and Curtis, 2003; Silumbwe et al. 2018), and community and state level factors (Kaggwa et al., 2008; Mutumba et al. 2018; Silumbwe et al. 2018; Grady et al., 1993) influence contraceptive use among adolescents and young people. However, existing studies in Nigeria have seldomly gone beyond individual-level factors to reveal the interrelated contextual factors that affect unmarried adolescents' use of contraceptive methods. Ignoring these contextual factors in a country like Nigeria has serious policy implications in understanding adolescents' SRH challenges and the effective design for family planning programmes. This is because since most communities in Nigeria are relatively conservative with deeply entrenched social norms and beliefs systems and wide socio-economic divide in terms of service provision across states, it is sensible, therefore, to think that the context in which adolescent lives may likely influence their use of SRH services.

This chapter makes a significant contribution to the overall thesis by using a multilevel modelling approach to unmask not only the individual level predictors, but the community and state-level factors that influence adolescent's contraceptive use (Ngome and Odimegwu, 2014; Ejembi et al. 2015). Understanding the contextual level influence to contraceptive access and use among adolescents is crucial in developing a robust and targeted community and state-level interventions and programmes that go beyond addressing individual-level challenges to countering community norms and perceptions that hinder access to contraceptive services. It will help to develop interventions that are culturally sensitive and context-specific in addressing adolescents challenges in accessing contraceptive in Nigeria.

Secondly, it is also worth assessing the trends in contraceptive use in Nigeria as no study has looked at this after the Federal government injection of a whopping $4million in family planning in recent years in the country (National Population Commission and ICF 2014). Timely estimates on

the trends in contraceptive use are critical for assessing current and future contraceptive service demand and setting policy priorities to ensure adolescents' access and use of contraceptive services. These underpin the need for the current chapter.

## 5.3 Research objectives

The specific objectives of this chapter are to:

i. Examine the trends in contraceptive use among unmarried adolescents in Nigeria;
ii. Explore the individual, community and state-level determinants of adolescents' contraceptive use in Nigeria; and
iii. Examine state-level variations in contraceptive use among unmarried adolescents in Nigeria.

## 5.4 Data and Methods

As explained in chapters 3 and 4, this study uses a pooled dataset extracted from the Nigeria Demographic Health Survey (NDHS) 2003-2013. The NDHS collects reliable and up-to-date information on the participant's knowledge, and the use of contraceptive services. The study uses individual datasets from the 2003, 2008 and 2013 NDHS to show the trends in contraceptive use among unmarried adolescents in Nigeria while the pooled dataset of the three years was used to model the predictors of contraceptive use among unmarried adolescents in Nigeria using the same sample size as reported in section 3.5.1.2. and 4.4. The decision to base the analyses on unmarried adolescents rather than those who are sexually active was primary because focusing on sexually active adolescent will limit the overall sample size used in modelling the predictors of contraceptive use and assess the variations across communities and states, which may also impact on meaningful sub-group analyses. A simple frequency analysis among sexually active adolescents showed in some cases limited cases at the cluster level. This makes it difficult to assess the cluster level variations in contraceptive use. Although, it makes sense to focus on those who are sexually active rather than all respondents. However, considering also the issue of social desirability bias, which has been acknowledged to exert a huge influence on studies that rely on self-reported sexual behaviour (Kelly et al., 2013). For example, DHS question asked respondents if they have had sex in the last 4 weeks? Most adolescents may recast their responses or may feel pressured to report that they never had sex due to stigma, cultural and social norms surrounding non-marital

sexual activity especially, given that the questionnaire was completed face to face with the research assistants. This may mean that most adolescents who reported never had sex may indeed be sexually active. Therefore, including all unmarried adolescents in the analyses may give a true picture of the trends and predictors of this outcome. Notwithstanding, a separate analysis was carried out to assess the trend in contraceptive use among those who are sexually active. See section 5.5.2.1.

**Dependent variable: Current Contraceptive Use**

The dependent variable (contraceptive use) is defined as current use of any method of contraceptives. Current contraceptive use was dichotomous, denoting users and nonusers of contraceptive methods by grouping non-users of contraceptive as “0” and those who have currently used any method as “1”. (No=0 and Yes=1).

**Independent variable**

The independent (explanatory) variables used in this study include:

- Individual-level factors: Gender, Age, Education, Employment, ever tested for HIV, Comprehensive Knowledge of HIV, Religion, Ethnicity.
- Family level factors: Age of household head, Sex of household head, Wealth index.
- Community-level factors (Community place of residence, Community poverty level, community HIV stigma level, Community FP message exposure, community unemployment level).
- State-level factors (Media exposure in the state, Stigma level in the state, Educational years in the state and Region).

### 5.4.1 An operational framework for data analysis

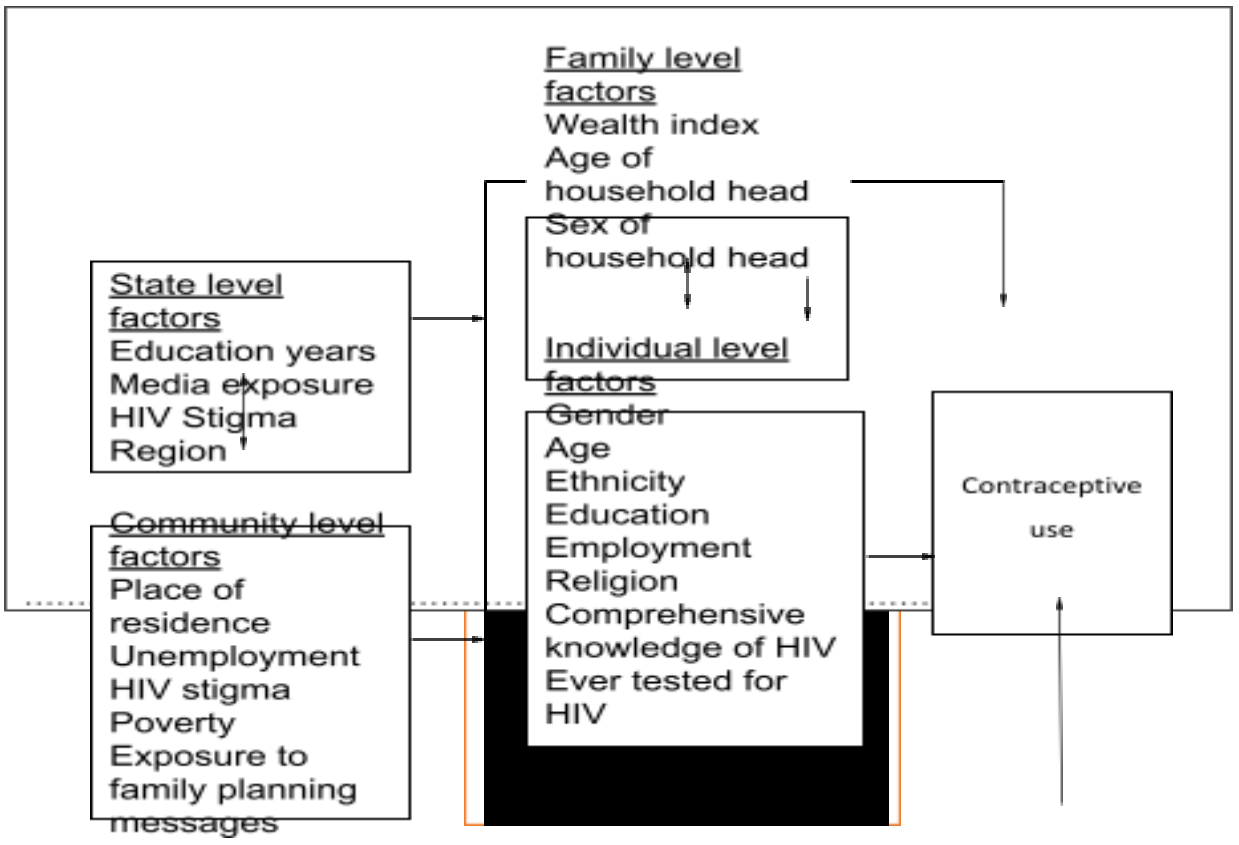
Figure 5.1 shows the operational framework adopted for the multivariate analysis. As explained in chapter 4, the conceptual framework is different from the operational framework reported in this chapter. This is because some of the variables reported in the conceptual framework were not available in the NDHS. Also, this chapter adopted the same analytical plans used in chapter 4. (See section 4.4.3 for details). A three-level multivariate logistic regression was fitted to examine the

individual, community and state level effects on contraceptive use and to assess the state level variations on contraceptive use among adolescents in Nigeria.

The three-level random intercepts multilevel logistic regression in this analysis takes the form:

Logit ($\pi ijk$) = Log [$\pi ijk$/ (1−$\pi ijk$)] = $\beta_0 + \beta_1 X_{1ijk} + vk + ujk + \varepsilon ijk$

Where ($\pi ijk$) is the probability of adolescent i, in the $j^{th}$ community and $k^{th}$ state using a method of contraceptive. $\beta_o$ is the intercept coefficient, $X_{1ijk}$ is the vector of independent variables at individual, community and state-level; $\beta$ 1 is the associated vector of usual regression parameter estimates, and is shared by all communities and states. The random effect, $u_{jk}$ is random variance at community levels, while vk is a random variance (effect) at the state level.



…….. (Indirect influence)
_____ (Direct influence)

Figure 5.1: Operational Framework for the analysis of the determinants of contraceptive use among unmarried adolescents in Nigeria.

## 5.5 Results:

### 5.5.1 Background characteristics of the sample

Table 4.1 in chapter four presents the background description of 18255 samples of unmarried adolescents aged 15-19 from the Nigeria Demographic Health Surveys (NDHS) during the period 2003-2013. This was not repeated here as both chapters share the same sample size and analytical approach. Therefore, the distribution of the background characteristics is the same except for the variables reported in Table 5.1. Table 5.1 shows that the overall contraceptive knowledge among unmarried adolescents in Nigeria is (78.1%). Only 7.6% of all unmarried adolescents in Nigeria were using a method of contraception. This is below the national prevalence of 16%. On splitting the data by gender, the results showed that the use of contraceptives was more prevalent among unmarried female adolescents (8.0%) than their male counterparts (6.9%). The table further shows that adolescents' use of a modern contraceptive method was higher (5.8%) than the traditional method (1.7%). Among the modern method of contraception used by unmarried adolescents in Nigeria, the condom was the most common choice of contraceptive (5.1%), followed by the pill (0.8) and the injectable (0.1%). Private clinic and local pharmacy stores were the preferred sources of contraceptive (95.1%) to public (government) clinics (4.9%) by unmarried adolescents. Overall, Table 5.1 shows that knowledge and use of contraceptive among adolescents (aged 15-19) was lower than the older population (Aged 20-49).

Table 5.1: Percentage distribution of contraceptive knowledge, use and sources among unmarried adolescents aged 15-19 and older men and women aged 20-49, Nigeria, 2003-2013.

| | 15-19 unmarried adolescents | Adults aged 20-49 |
|---|---|---|

| Variables | Weighted (%) | Unweighted Cases | Weighted (%) | Unweighted cases |
|---|---|---|---|---|
| Contraceptive knowledge | | | | |
| Yes | 78.1 | 14055 | 85.3 | 60852 |
| No | 21.9 | 4200 | 14.7 | 13591 |
| Contraceptive use | | | | |
| Yes | 7.6 | 1309 | 18.9 | 10736 |
| No | 92.4 | 16946 | 81.1 | 63707 |
| Contraceptive use by method | | | | |
| Modern | 5.8 | 1038 | 13.6 | 7231 |
| Pill | 0.5 | 84 | 1.8 | 1605 |
| Condom | 5.1 | 908 | 7.7 | 6795 |
| Injectable | 0.1 | 19 | 2.2 | 1962 |
| Traditional | 1.7 | 217 | 4.9 | 3505 |
| Sources of contraceptives | | | | |
| Public/government clinics | 4.9 | 47 | 21.1 | 1258 |
| Private clinic/shops | 95.1 | 910 | 78.9 | 5975 |

### 5.5.2 Bivariate analysis results

#### 5.5.2.1 Trends in contraceptive use among unmarried adolescents aged 15-19 in Nigeria.

One of the objectives of this chapter is to examine the trends in contraceptive use among unmarried adolescents in Nigeria. Figure 5.2 provides the results of further analysis by survey year and gender. The figure shows that the use of contraceptives decreased (10.3% to 7.1%) and increased (7.6% to 8.4%) between 2003 and 2008 for male and female adolescents respectively ($p=0.056$). A significant decrease was observed for both groups in 2013 ($p<0.006$). There was a consistent steady decrease in contraceptive use among adolescent boys but stalled among adolescent girls across the three years of the surveys. Comparing this with the sexually active unmarried adolescents aged 15-19, contraceptive use increased from 30.1% to 37.3% for the girls and declined from 54.1% to 37.4% for boys in 2003 and 2008 respectively. However, there was an observed increase for the girls (42.6%, $p<0.001$) and boys (50.2, $p<0.087$) in 2013.

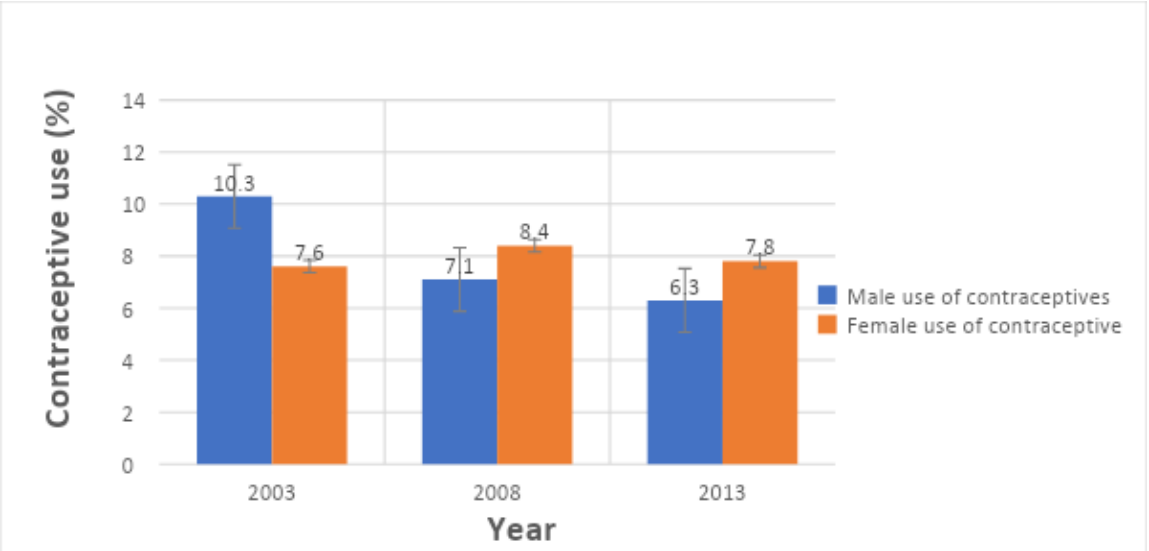



Figure 5.2: Trends in contraceptive use among unmarried adolescents aged 15-19 by survey year, according to gender, Nigeria 2003-2013.

### 5.5.3 Determinants of contraceptive use among unmarried adolescents aged 15-19

**Educational level**

Table 5.2 shows that unmarried adolescents with secondary education and above were more likely (9.4%) to use a contraceptive than those with primary education (3.4%) ($p<0.001$) and no education (0.7%) ($p<0.001$). Also, younger adolescents (Aged 15-17) were less likely to use contraceptive (3.9%) than older adolescents (aged 18-19) (13.7%). To use contraceptive. Contraceptive use was highest among unmarried adolescents from the Yoruba ethnic group (9.7%) and lowest among unmarried adolescents from Hausa ethnic group (0.5%) ($p<0.001$). Unmarried adolescents from the Yoruba ethnic group were nine times (9.7%) more likely to use a method of contraceptive than their peers from the Hausa ethnic group (0.5%) ($p<0.001$). Also, those from the Igbo ethnic group were more likely (8.4%) to use contraceptive than those from Hausa ethnic group (0.5%) ($p<0.001$).

Also, the results showed that the use of contraceptive method was highest among Protestants (non-Catholic Christians) (10.8%), followed by Catholics (8.6%) and Islam (3.3%) ($p<0.001$). Also, adolescents with CKH (10.1%) were more likely to use any method of contraception than their peers with no CKH (7.3%) ($p<0.001$). Unmarried male and female adolescents who knew someone who has died or has AIDS were more likely to use contraception (10.1%) than those who did not know someone who has died of HIV or has AIDS (8.0%). Similarly, adolescents who have ever been

tested for HIV were almost three-times (20.3%) more likely to use contraception than their peers who have not been tested for HIV (7.0%) (p<0.01). Unmarried adolescents who heard about family planning through newspapers (16.6%) were more likely to use contraception than those who heard about family planning from the radio (12.1%) and TV (14.6%) (p<0.001).

Furthermore, Table 5.2 shows that contraceptive use among male and female unmarried adolescents increased with increase in wealth index. Unmarried adolescents from the richest wealth index families were three times more likely to use any method of contraception (9.4%) than their counterparts from the poorest wealth index (3.2%) (p<0.001). Also, sex of household head and age of household head were significantly associated with contraceptive use. Adolescents in a youth headed households (aged 15-24) were more than twice as (15.8%) likely to use contraception than their counterparts who live in a household headed by adults aged 60 and above (6.2%) (P<0.001). Also, those in a female-headed household were more likely (10.3%) to use contraception than those who live in male-headed households (6.5%) (p<0.01).

Table 5.2: Percentage distribution of contraceptive use among unmarried adolescents by individual and family level factors

| Variables | Weighted (%) | Unweighted cases | P-value | Variables | Weighted (%) | Unweighted cases | P-value |
|---|---|---|---|---|---|---|---|
| Year | | | =0.105 | Sources of family planning (FP) information | | | |
| 2003 | 8.3 | 1688 | | Heard FP on radio | | | <0.01 |
| 2008 | 7.9 | 7079 | | Yes | 12.1 | 5718 | |
| 2013 | 7.2 | 9488 | | No | 5.5 | 12514 | |
| Gender | | | <0.01 | Heard FP on TV | | | <0.01 |
| Male | 6.9 | 6664 | | Yes | 14.6 | 3419 | |
| Female | 8.0 | 11591 | | No | 6.0 | 14801 | |
| Age | | | | Heard of FP on newspaper | | | <0.001 |
| 15-17 | 3.9% | 11995 | | Yes | 16.6 | 1224 | |
| 18-19 | 13.7% | 6260 | | No | 6.9 | 16977 | |
| Religion | | | <0.001 | Age of household head | | | <0.001 |
| Catholic | 8.6 | 2838 | | 15-24 | 15.8 | 920 | |
| Protestant/Other Christians | 10.8 | 8426 | | 25-39 | 9.1 | 2081 | |
| Islam/others | 3.3 | 6990 | | 40-59 | 6.7 | 9732 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Comprehensive knowledge of HIV | | | <0.001 | 60 and above | 6.2 | 5494 | |
| Yes | 10.4 | 5038 | | Sex of house hold head | | | <0.01 |
| No | 7.3 | 11020 | | Male | 6.5 | 14111 | |
| Ethnicity | | 3337 | <0.001 | Female | 10.3 | 4144 | |
| Hausa | 0.5 | 2496 | | Knows someone who has died or has AIDS | | | <0.001 |
| Igbo | 8.4 | 2730 | | Yes | 10.1 | 983 | |
| Yoruba | 9.7 | 2953 | | No | 8.0 | 16702 | |
| Others | 9.1 | 8836 | | | | | |
| Type of place of residence | | | <0.01 | Wealth index | | | <0.001 |
| Urban | 8.2 | 7644 | | Poorest | 3.2 | 2259 | |
| Rural | 7.1 | 10611 | | Poorer | 5.4 | 3045 | |
| Educational level | | | <0.001 | Middle | 7.9 | 4216 | |
| No education | 0.7 | 1877 | | Richer | 9.0 | 4632 | |
| Primary | 3.4 | 2689 | | Richest | 9.4 | 4103 | |
| Secondary and above | 9.4 | 13689 | | Ever been tested for HIV | | | <0.001 |
| Knows someone who has died or has AIDS | | | <0.001 | Yes | 20.3 | 1503 | |
| Yes | 10.1 | 983 | | No | 7.0 | 16752 | |
| No | 8.0 | 16702 | | Ever been tested for HIV | | | <0.001 |

#### 5.5.3.1 Community and state level factors

All the community level factors were significantly associated with contraceptive use except community level HIV stigma. Table 5.3 shows significant variation in current contraceptive use among unmarried adolescents across the six geo-political zones in Nigeria. Overall, current contraceptive use among unmarried male and female adolescents across the zones was less than the national prevalence rate (16%). Current contraceptive use was highest among adolescents who live in the South-South region (15.1%), followed by the South West region of Nigeria (10.2%) and lowest among those who live in the North-West region (1.1%), followed by those in the North East region (1.7%) ($p<0.001$). The current use of contraception was higher among adolescents in the Southern part of Nigeria than their counterparts in the Northern part. As expected, current

contraceptive use was higher among unmarried adolescents in urban areas (8.2%) than their rural counterparts (7.1%) (p<0.001).

Also, adolescents who live in a community with a low proportion of the population in poverty were more likely to use contraception (10.1%) than those who live in communities where a relatively high proportion of individuals live in mid (6.8%) and high poverty (6.9%) (p<0.001). Similarly, adolescents who live in a community with a low proportion of individuals who were unemployed were more likely (8.5%) to use contraception than those who live in communities with mid (8.2%) and high (5.4%) unemployment level. Also, adolescents who live in communities with a low proportion of individuals exposed to family planning (FP) messages were less likely to use contraception (3.5%) than those who live in a community where a high proportion of individuals have mid (6.4%) and high (10.9%) family planning message exposure (p<0.001).

At the state level, media exposure, HIV stigma, educational years in the state and region were significantly associated with contraceptive use. Adolescents who live in states with a low proportion of individuals exposed to mass media messages were less likely to use contraceptive (1.7%%) than those who live in states where a percentage of individuals have mid (9.0%) and high (9.7%) mass media exposure (p<0.001). Educational years in the state showed a similar trend with mass media exposure. Finally, adolescents who live in a state with a low proportion of individuals with stigmatising attitudes were more likely to use contraceptive (9.1%) than those who live in state where a proportion of individuals have mid (7.1%) and high (5.7%) stigmatising attitude.

Table 5.3: Percentage distribution of contraceptive use among adolescents by the community and state level factors

| Characteristics | Weighted % | Cases | P-Value |
|---|---|---|---|
| Community level factors | | | |
| Community place of residence | | | <0.001 |
| Urban | 8.5 | 6277 | |
| Mid-Rural | 7.4 | 6145 | |
| Rural | 5.6 | 5833 | |
| Poverty level | | | <0.001 |
| Low | 10.1 | 6367 | |
| Mid | 6.8 | 6523 | |
| High | 3.8 | 5365 | |
| HIV Stigma level | | | =0.268 |
| Low | 7.7 | 6672 | |

| | | | |
|---|---|---|---|
| Mid | 7.3 | 5874 | |
| High | 6.9 | 5709 | |
| FP message exposure | | | <0.001 |
| Low | 3.5 | 5363 | |
| Mid | 6.4 | 6383 | |
| High | 10.9 | 6509 | |
| Unemployment level | | | <0.001 |
| Low | 8.5 | 5367 | |
| Mid | 8.2 | 6606 | |
| High | 5.4 | 6282 | |
| State level factors | | | |
| Media exposure | | | <0.001 |
| Low | 1.7 | 4841 | |
| Mid | 9.0 | 5525 | |
| High | 9.7 | 7889 | |
| Stigma level | | | <0.001 |
| Low | 9.1 | 6259 | |
| Mid | 7.1 | 6610 | |
| High | 5.7 | 5386 | |
| Educational years | | | <0.001 |
| Low | 0.6 | 3980 | |
| Mid | 6.8 | 6983 | |
| High | 7.3 | 7292 | |
| Region/zone | | | <0.001 |
| North Central | 6.3 | 3411 | |
| North East | 1.7 | 2502 | |
| North West | 1.1 | 2800 | |
| South East | 7.8 | 2568 | |
| South-South | 15.7 | 3637 | |
| South West | 10.2 | 3337 | |

### 5.5.4 Multilevel analysis results

This section reports the results of the multivariate analysis of contraceptive use. Table 5.4 shows the odds ratios associated with contraceptive use for unmarried adolescents in Nigeria. The first model (Model 0) investigated the random variance component of the community and state level contextual factors. The variance at the empty model serves as the starting point to calculate the explained percentage of the total variance of the intricate models (Ngome and Odimegwu, 2014). Similarly, with reference to contraceptive use, the results showed the intra-cluster correlation

coefficient (ICC) of 35.7% for community and 31.6% for the state. This also implies that 35.7% of the variations observed in contraceptive use could be explained by community-level factors while 31.6% of the variations observed in contraceptive use could be explained by state-level factors.

Controlling for individual-level variables in model 1, the results in table 5.4 in model 1 showed that age, gender, ethnicity, education, employment status, ever tested for HIV, and comprehensive knowledge of HIV and religion were significantly associated with contraceptive use. Older adolescents (Aged 18-19) were almost four times more likely to use contraception than younger adolescents (Aged 15-17) (OR=3.66; 95% CI:3.18-4.20; p<0.05). Unmarried adolescents who were of the Yoruba ethnic group were almost three times more likely to use contraception compared to those from the Hausa ethnic group (OR=2.87; 95% CI:135-6.13; p<0.05).

Similarly, those who were from other ethnic groups in Nigeria were 2.8 times more likely to use contraception than those from the Hausa ethnic group (OR=2.82; 95% CI:1.38-5.76; p<0.05). There was no significant difference in contraceptive use among unmarried adolescents from Igbo and Hausa ethnic groups. Adolescents with secondary education and above were 2.9 times more likely to use contraception compared to those with no education (OR=2.96; 95% CI:1.40-6.26; P<0.05). There was no significant difference in contraceptive use among those with primary education and no education. Those who were employed had significantly higher odds of using contraception than unmarried adolescents who were not working (OR=1.87,95% CI:1.61-2.17). Those who had ever been tested for HIV were more than twice as likely to use contraception than those not tested for HIV (OR=2.10; 95%CI:1.92-2.57; P<0.05). Having a comprehensive Knowledge of HIV increased the odds of using contraception by a factor of 1.6. Religion was significantly associated with contraceptive use among unmarried adolescents. Adolescents from other Christians background (protestants/Pentecostals) were more likely to use contraceptive than those with Catholic background (OR=1.16; 95% CI: 0.94-1.43).

Also, the level 2 effect was estimated in Model 1 (Estimate=0.209, SE=0.060, i.e. Z-value of 3.7 at 1% sig. level). After controlling the individual level variables, the intra community correlation (ICC) decreased from 35.7% in Model 0 (empty model) to 24.9% (0.209+0.885)/ (0.885+0.209+3.29) in Model 1 (With only individual level variables included). In addition, the intra-State correlation decreased from 31.6% in Model 0 to 20.2% (0.885/ (0.885+0.208+3.29) in Model 1.

Controlling for the family level factors in model 2, the results showed that the individual level factors remained significantly associated with contraceptive use (Odds ratio almost the same as in model 1). Age of household head was significantly associated with the use of contraception. Adolescents who live in a household where the head of the household was within the age range 25-39, 40-59, and 60 and above were 30%, 43% and 43% less likely to use contraception respectively than those who live in a youth headed household (Aged 15-24). Sex of household head and wealth index were not significantly associated with contraceptive use among unmarried adolescents in Nigeria.

In addition to family level factors, there was significant variation across communities and states. Controlling for the family level factors, the results showed that the Intra-community Correlation (ICC) decreased from 24.9% in Model 1 to 23.9% in Model 2 and the intra-state correlation decreased from 20.2% in Model 1 to 19.2% in Model 2.

Table 5.4 Multilevel odds ratios of Individual, Community and State level factors of contraceptive use among unmarried adolescents in Nigeria 2003-2013 NDHS

| | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| PARAMETER | Odds | Odds | Odds | |
| Cons | | | | |
| Gender (Male) | | | | |
| Female | 1.16(1.00-1.33)* | 1.19(1.03-1.38) * | 1.19(1.03-1.37)* | 1.18(1.02-1.37)* |
| Age (15-17) | | | | |
| 18-19 | 3.66(3.18-4.20)* | 3.60(3.13-4.14)* | 3.61(3.14-4.15)* | 3.59(3.12-4.13)* |
| Ethnicity (Hausa) | | | | |
| Igbo | 2.11(0.97-4.61) | 2.11(0.97-4.62) | 2.08(0.96-4.55) | 1.69(0.78-3.63) |
| Yoruba | 2.87(1.35-6.13)* | 2.87(1.35-6.14)* | 2.83(1.33-6.01)* | 2.20(1.05-4.63)* |
| Others | 2.82(1.38-5.76)* | 2.75(1.35-5.62)* | 2.76(1.35-5.62)* | 2.24(1.11-4.52)* |
| Education (No education) | | | | |
| Primary | 1.78(0.81-3.91) | 1.73(0.79-3.80) | 1.73(0.78-3.79) | 1.53(0.69-3.37) |
| Secondary | 2.96(1.40-6.26)* | 2.86(1.35-6.09)* | 2.83(1.33-6.01)* | 2.53(1.18-5.39)* |
| Employment (unemployed) | | | | |
| Employed | 1.87(1.61-2.17)* | 1.83(1.57-2.13)* | 1.85(1.59-2.16)* | 1.88(1.62-2.19)* |
| Ever tested for HIV (No) | | | | |
| Yes | 2.10(1.72-2.57)* | 2.10(1.72-2.57)* | 2.11(1.73-2.58)* | 2.12(1.74-2.60)* |
| Religion (Catholic) | | | | |
| Other Christians | 1.16(0.94-1.43)* | 1.16(0.94-1.43)* | 1.15(0.93-1.42)* | 1.14(0.92-1.41) |
| Islam | 1.16(0.86-1.56) | 1.15(0.86-1.55) | 1.14(0.85-1.54) | 1.18(0.88-1.59) |
| Others/traditionalist | 1.19(0.54-2.63) | 1.20(0.54-2.65) | 1.16(0.52-2.58) | 1.16(0.52-2.57) |

| | | | | |
|---|---|---|---|---|
| Comprehensive knowledge of HIV (No) | | | | |
| Yes | 1.61(1.40-1.85)* | 1.61(1.40-1.85)* | 1.61(1.39-1.85)* | 1.59(1.38-1.84)* |
| Family level factors | | | | |
| Age of household head (15-24) | | | | |
| 25-39 | | 0.70(0.53-0.94)* | 0.71(0.53-0.94)* | 0.70(0.53-0.94)* |
| 40-59 | | 0.57(0.45-073)* | 0.58(0.45-0.74)* | 0.58(0.45-0.74)* |
| 60 and above | | 0.57(0.44-073)* | 0.57(0.44-0.74)* | 0.57(0.44-0.74)* |
| Sex of household head (male) | | | | |
| Female | | 0.99(0.85-1.15) | 0.98(0.85-1.14) | 0.98(0.84-1.14) |
| Wealth index (Poorest) | | | | |
| Poorer | | 1.12(0.74-1.68) | 1.09(0.73-1.64) | 1.08(0.72-1.62) |
| Middle | | 1.13(0.77-1.68) | 1.07(0.72-1.58) | 1.05(0.71-1.56) |
| Richer | | 1.17(0.79-1.73) | 1.06(0.71-1.58) | 1.04(0.70-1.55) |
| Richest | | 1.03(0.68-1.54) | 0.92(0.61-1.40) | 0.90(0.60-1.37) |
| Community-level factors | | | | |
| Poverty level (Low) | | | | |
| Mid | | | 1.05(0.86-1.29) | 1.05(0.86-1.27) |
| High | | | 0.84(0.62-1.16) | 0.83(0.61-1.14) |
| Stigma level (Low) | | | | |
| Low | | | 0.92(0.76-1.10) | 0.92(0.76-1.11) |
| High | | | 0.93(0.76-1.14) | 0.93(0.75-1.14) |
| FP message exposure (Low) | | | | |
| Mid | | | 1.09(0.84-1.42) | 1.09(0.84-1.42) |
| High | | | 1.10(0.81-1.50) | 1.09(0.80-1.48) |
| Unemployment level (Low) | | | | |
| Mid | | | 1.03(0.86-1.24) | 1.01(0.84-1.21) |
| High | | | 1.16(0.94-1.44) | 1.13(0.91-1.40) |
| State level factors | | | | |
| Media exposure (low) | | | | |
| Mid | | | | 0.76(0.44-1.30) |
| High | | | | 0.83(0.47-1.45) |
| Stigma level (Low) | | | | |
| Mid | | | | 1.17(0.78-1.76) |
| High | | | | 0.90(0.63-1.30) |
| Educational years (Low) | | | | |
| Mid | | | | 3.30(1.62-6.71)* |
| High | | | | 4.30(1.84-10.03)* |
| Region (North Central) | | | | |
| Northeast | | | | 0.39(0.21-0.72)* |
| Northwest | | | | 0.45(0.21-0.98)* |
| Southeast | | | | 1.19(0.62-2.30) |

| | | | | |
|---|---|---|---|---|
| South-south | | | | 2.43(1.47-4.00)* |
| Southwest | | | | 1.78(1.04-3.04)* |
| Community level random variation | 0.209(0.060)* | 0.204(0.060)* | 0.205(0.060)* | 0.187(0.058)* |
| Intra-community Correlation | 24.9% | 23.9% | 23.1% | 9.7% |
| State Level Random Variance | 0.885(0.183)* | 0.830(0.173)* | 0.786(0.165)* | 0.161(0.048)* |
| Intra-State Correlation | 20.2% | 19.2% | 18.4% | 4.4% |
| Intra-class correlation (ICC), *Statistical significance at 5% level, P<0.05 | | | | |

Controlling for community-level factors in model 3 (Table 5.4), most individual and family level factors remained significantly associated with contraceptive use. All the community level variables controlled in the model were not significantly associated with contraceptive use. Controlling for the community level factors in Model 3, the Intra-community and intra-state correlations slightly decreased from the previous Model. Intra-community correlation showed that 23.1% of the total unexplained variations in the odds of using contraceptives was attributable to community-level factors while the remaining 76.9% was attributable to other factors.

The final model (Model 4) controlled for state-level factors. The individual and family-level variables remained significantly the same as in model 3 when controlled for the state-level factors except religion, which ceased to be significant. All the family and community level variables remained insignificantly associated with the use of the contraceptive method except age of household head. Educational years and region were the only state-level variables found to be significantly associated with contraceptive use among unmarried adolescents in Nigeria. The results showed that unmarried adolescents who live in states where a high proportion of individuals had a moderate and high number of educational years were 3.3 and 4.3 times more likely to use contraceptives than those who live in states where individuals have low educational years.

Generally, the result showed that unmarried adolescents who live in the Southern part of Nigeria were more likely to use contraceptives than those from the Northern part of the country except those from South-Eastern part of Nigeria. Unmarried adolescents who live in Northeast and North West were 67% and 69% less likely to use contraceptives than those from North Central.

Conversely, those who live in the South-South and Southwest region were 3.3 times and 2.0 times more likely to use contraceptive than those from North Central.

Furthermore, control for the state level factors (Model 4), the results showed that the ICC drastically decreased from 23.1% in Model 3 to 9.7% in Model 4. Also, the Intra-state correlation decreased from 18.4% in Model 3 to 4.4% in Model 4. The effect was apparent when educational years and region were introduced in the model. This shows that 9.7% and 4.4% of the total unexplained variations in the odds of using contraceptives were attributable to unobserved community and state level effects respectively.

## 5.6 Discussion

### 5.6.1 Trends in contraceptive use among adolescents in Nigeria.

One of the objectives of this chapter is to examine the trends in contraceptive use among unmarried adolescents in Nigeria. Overall, the results showed that the use of contraception was disappointingly low among all unmarried adolescents in Nigeria, but when the data were disaggregated by sexual activity (Sexually active vs not-sexually active), unmarried adolescents who were sexually active had higher contraceptive use (40.2%) than all unmarried adolescents combined (7.6%). The findings show that while contraceptive use decreases especially from 2008 to 2013 among all unmarried adolescents, it however, increases among unmarried adolescents who are sexually active. Also, for all unmarried adolescents, girls were more likely to use a method of contraceptive than the boys but for unmarried sexually active adolescents, boys were more likely to use a method of contraceptive. The decline in trends and low use of contraceptive among all unmarried adolescents could perhaps be associated with under-reporting of the outcome (contraceptive use) due to the influence of social desirability bias (Kelly et al., 2013) as self-reported data on contraception use are prone to social desirability bias. Cleland et al., (2004) advised that when data from a previous survey is available, the opportunity should be taken to examines whether chances in reporting bias have occurred over time and whether trends have been distorted. In a sensitive study like this, the chances of adolescents recasting their responses are high due to the social context surrounding the data collection and further exacerbated by the face to face nature of the data collection; indicating the importance of a qualitative component of the study to validate some of the findings.

The trends in contraceptive use among sexually active adolescents is consistent with other studies in Kenya (Obare, 2011), Ghana (Abdul-Rahman et al, 2011), USA (Martinez and Abma, 2015), Spain (Duenas et al., 2013) and Nigeria, Burkina Faso and Ethiopia (Hounton et al., 2015). In a quantitative study in three African countries on the trends of contraceptive use among sexually active adolescents, the study found that overall, the proportion of modern contraceptive use among sexually active adolescents has increased in Ethiopia in the last decade from 5 to 24% (Hounton, et al., 2015). Similarly, another quantitative study in Kenya among married and unmarried adolescent girls reported that despite the low-level use of contraception, there was a steady increase in the use of modern methods among adolescent girls from 2003-2008/2009 (Obare et al., 2011). Also, the Abdul-Rahman et al (2011) study in Ghana among female adolescents showed that there was a significant increase in the current contraceptive use between 2003 and 2008 (Abdul-Rahman et al, 2011). Martinez and Abma (2015) in a quantitative study revealed that the proportion of U.S. females aged 15–19 who used contraceptives the first time they had sex, has increased from 48% in 1982 to 79% in 2011–2013. In another study in Spain, it was reported that the rate of use of contraceptive methods increased from 61% in men and 60% in women in 2002 to 80% and 75%, respectively, in 2008 (Duenas et al., 2013).

The findings of the current study among sexually active adolescents tend to suggest that the recent changes in SRH policy in Nigeria have had some positive impact on the use of contraceptives. However, this impact was unnoticed when the trends in contraceptive use for all unmarried adolescents were assessed; indicating that the impact of the policy may have been jeopardised due to response bias as discussed earlier and serves as a pointer to disaggregate data when examining adolescents contraceptive use. Also, the decline in contraceptive use especially from 2008 to 2013 among all unmarried adolescents, shows that either there is a Sexual and Reproductive Health policy implementation gap in Nigeria, which may suggest that the current programmes are not meeting the SRH needs of adolescents or reporting bias has occurred over time and trends may have been distorted.

The multivariate results in table 5.4 found that gender, age, ethnicity, education, employment, region, comprehensive knowledge of HIV, and age of household head were significantly associated with contraceptive use. The results showed that for all unmarried adolescents, girls were more likely to use contraception than the boys. These findings differ from studies in other African

countries (Chimbindi et al., 2010; Hargreaves et al., Oginni et al 2015). Chimbindi, et al., (2010) in South Africa found that female adolescents were 40% less likely to use condoms consistently than the males. Hargreaves et al., (2010) study found that males were more likely to report condom use than females. While the differences in the findings could be ascribed to the fact that both studies in South Africa investigated condom use among adolescents. However, the difference could possibly be associated with reporting bias among adolescents' girls, who are more likely to be shy when reporting their sexual activities compared to the boys as the qualitative findings reveal. This study found that older adolescents have a higher tendency to use contraceptives than their younger counterparts. Less use of contraception among younger adolescents could be argued to be linked to the fact that this group is less likely to be sexually active and their needs for contraceptives are less likely to be met unlike the older adolescents who are more confident and knowledgeable about sources of contraceptive services (Agampodi, et al., 2008). However, younger adolescents are more likely to be discouraged, scolded and judged by service providers (Chilina, et al., 2014). The effect of age was similar to other studies conducted in four African countries (Burkina Faso, Ghana, Malawi and Uganda). Hendriksen, et al., 2007).

Several studies have found significantly higher odds of contraceptive use among adolescents with higher educational attainment than those with no education or primary education (Amsalu-Felekeet et al., 2013; Bankole et al., 2015; Hall; et al., 2012; Kamal, 2012; Magadi and Curtis, 2003; Oginni, et al., 2015 and Bicetre, 2004). The results presented here further established that the odds of contraceptive use among adolescent boys and girls were higher among those with higher education attainment. This disparity may be associated with the fact that formal education brings about better-informed choices, strongly affect reasoning ability and improves adolescents' capacity to analyse and understand risk-related behaviour of unprotected sex (Baker *et al* 2011). It provides adolescents with the required information needed to prevent infection (Eric, et al. 2009). Also, education influences adolescents' understanding of family planning /contraceptive methods and its practices (Sonia, 2018).

The study found that adolescents who were in employment were almost twice as likely to use a contraceptive. Employment has a strong link with income and overall socio-economic status. It is believed that adolescents who are in employment are more likely to have disposable income than those who are unemployed, making it possible for the employed to afford any method of

contraception, especially in a place like Nigeria where many adolescents prefer private providers as discussed in chapter 7. On the contrary, this is not the case with a previous study in Nigeria (Ejembi, et al., 2015)., which found that adolescents who were employed had reduced odds of contraceptive use. Although, apart from the fact that the association was statistically insignificant, the study looked at married women aged 15-49. The difference in the sample characteristics could account for the difference in the results.

Ethnic origin of adolescents predicts their use of contraceptive. This study found that adolescents who were of Yoruba ethnic group were almost three times more likely to use contraception compared to the Hausa ethnic group. The results showed that unmarried adolescents who live in the Southern part of Nigeria were more likely to use contraceptives than those from the Northern part of the country. Also, adolescents of Islamic faith were less likely to use contraception than the Catholics and Christians/protestants adolescents. Religion seems to be acting in synergy to other factors in order to influence the uptake of contraceptives. It is worth remembering that the Hausas are predominantly Muslims and reside predominantly in the Northern part of Nigeria while the Yoruba and other ethnic groups are predominantly Christians and reside in the Southern part of Nigeria. Ethnic differences in terms of the odds of contraceptive use could be attributed to the fact that the Hausas in the Northern part of Nigeria are less educated and are socioeconomically deprived and account for 75% chronic poor households in Nigeria compared to the other ethnic groups in the South (Federal Republic of Nigeria Poverty Work Program, 2016). Socioeconomic status is believed to influence adolescents' use of contraceptives as previous evidence has shown that adolescents within a household of high socioeconomic status were more likely to use a condom than their counterparts with low socio-economic status (Chimbindi, et al., 2010; Salehi et al., 2014). The study found that CKH was positively associated with contraceptive use. This association may relate to the fact that CKH influences adolescents' risk perception of HIV and the need for contraceptives. Previous studies have shown that risk perception affects young people's knowledge and use of contraceptives (Adih, et al., 1999; Ngome, et al 2014; Meekers and Klein, 2002). A study in Botswana found that consistent use of contraceptives among adolescents was associated with risk perception.

At the family level, adolescent boys and girls were more likely to use a method of contraception if they live in a youth headed household. This could be due to the fact that adolescents in youth

headed households are possibly the head in these households; as a result, they have more freedom as they do not need to get permission from any adult before accessing any services. Mardi et al (2018) in a qualitative study among teen women in Iran found that lack of autonomy influenced teenagers' contraceptive use. This is similar to a study in Nigeria which found a positive association between female autonomy and use of contraceptive services (Ejembi, et al., 2015). Our findings support the concept of youth-friendly services, which emphasises the use of young people in running most SRH services. Sex of household head and wealth index were not significantly associated with contraceptive use. This is contrary to the findings of other studies (Çelik, and Esin, 2012; Chimbindi; et al., 2010; Kamal, 2012; Oginni, et al., 2015; Salehi, et al., 2014).

At the community level, the study found that community level variables had no significant association with adolescents' use of contraceptives. A similar pattern was observed in a previous study in Nigeria among women aged 15-49 (Ejembi, et al., 2015) and Mali (Kaggwa, 2008). The study found that the unemployment rate in the community and the poverty level in the community were not significantly associated with contraceptive use (Ejembi, et al., 2015). At the state level, adolescents who live in states where a high proportion of the individuals have a high level of education were more likely to use a method of contraceptive than their counterparts. This is not surprising as previous studies (Ngome and Odimegwu, 2014; Mutumba etal., 2018; Amsalu-Felekeet et al., 2013; Bankole et al., 2015; Hall; et al., 2012; Kamal, 2012; Magadi and Curtis, 2003; Oginni, et al., 2015 and Bicetre, 2004), have shown that contraceptive use among adolescents increases with increase in educational level. This has important policy implications in Nigeria as it has revealed the need for collaborative action between the Ministry of Health and Education to champion a viable national educational policy across the states that would improve high educational attainment; especially in the northern regions of the country.

Finally, the intra-community correlation in the analysis presented a clear picture of the community level variation in contraceptive use. The study found that about 9.7% of the total unexplained variation in contraceptive use among unmarried adolescents was attributed to variances across communities and 4.4% of the total unexplained variation in contraceptive use among unmarried adolescents was attributed to variance across states in Nigeria. This shows that 14.1% of the factors responsible for the variation in contraceptive use could not be accounted for by the individual, community and state level factors considered in this model. This is less than the total

variation (17.1%) seen in another study in Nigeria (Ejembi *et al.,* 2015). Although, the latter considers only the individual and community level factors among women aged 15-49. This could potentially account for the variations in ICC in both studies. These findings support the Ecological model used in the study, which argued that factors at the community and state affect individual health outcomes (Salazar *et al.,* 2009).

## 5.7 Conclusion

Overall, the findings show a relatively significant variation in contraceptive use across communities and states in Nigeria. Generally, while there is decline in contraceptive use among all unmarried adolescent, those who were sexually active show an appreciable increase in contraceptive use. The individual-level factors accounted for most of the variations rather than the contextual level factors. These findings suggest the need to focus interventions on individuals and states. Given that educational years at the state level was positively associated with contraceptive use among adolescents, it is evident that investment in education across the state, especially among adolescent girls, should be prioritised by the relevant ministries across the states. There is a need for girl-child education advocacy. Although there are pockets of NGOs and Developmental agencies like DFID stepping up to this responsibilities; they require strong government support, especially in the northern part of Nigeria where evidence has shown that only 4% of girls complete secondary education and more than two-thirds of 15-19-year-old girls in the northern region are unable to read a sentence compared to less than 10% in the South (British Council, 2012). These wide regional variations in educational attainment could be the reason why this study found that unmarried adolescents who live in the Southern part of Nigeria were overall more likely to use contraceptives than those from the Northern part of the country. The next chapter using qualitative approach explores the views of service providers on adolescent's use of SRH services with the aim of identifying some of the key supply-side barriers associated with adolescents' use of contraceptives.

# Chapter 6: The views of service providers on adolescents' access and use of Sexual and Reproductive Health service in Nigeria

## 6.1 Introduction

This chapter presents the findings of in-depth interviews with sexual health service providers in Nigeria. The interviews explored the views and perceptions of service providers on adolescents´ access use of sexual and reproductive health (SRH) services in Nigeria. An inductive technique (thematic analysis) was used to develop the overarching themes that best reflect the data. The findings are presented under four meta-themes, namely: a. sexual health concerns and needs of adolescents from the service providers' point of view; b. service providers' perceptions of the services they provide to young people; c. service providers' attitudes to adolescents' use of SRH services; and, d. sources of SRH information and services. The chapter starts with a short background summary to establish the rationale for this chapter. This is followed by the recruitment and participants demographic details, the findings, discussion and conclusion.

## 6.2 Background and objectives

Sexual and Reproductive Health (SRH) services in Nigeria are provided by staff at both private and public clinics. These include doctors, nurses, midwives, senior health extension workers, community health officers and pharmacists. These professionals are involved in offering sexual health services (SHS) in the Primary Health Care (PHC) centres, private hospitals, secondary or tertiary government hospitals and Youth Friendly (YF) clinics. Unfortunately, the provision of these services is not always available in some settings, and where the service is available, young people do not use them. One of the reasons for non-use of these services has been identified to be service provider related (Lince-Deroche, *et al.,* 2015; Ahanonu, 2014; Biddlecom *et al*., 2007). Evidence from extant literature shows that service providers and adolescents share differing views in matters of SRH services (Lince-deroche *et al*., 2015; Biddlecom *et al*. 2007; Johnston *et al* 2015; Jacobson *et al.,* 2001). A systematic review study undertaken in developing countries found that unprofessional attitudes of health care professionals prevent adolescents from gaining access to services (Chilinda, *et al.,* 2014). Adepoju *et al*., (2006) in a mixed-method study in Nigeria recommended the need to explore service providers' attitudes in relation to SRH as the study

disclosed some behavioural attitude and societal bias among health service providers which deter adolescents from accessing services. This chapter argues that for appropriate and effective SRH services to be delivered to adolescents, the service providers and adolescents' needs to share similar views and priorities on SRH issues concerning adolescents. Assessing the views of providers on adolescents' use of services would uncover service provision gaps in access to services. This is important as the WHO (2010) framework for developing sexual health services emphasizes the need to strengthen the capacity of providers through training in order to provide non-judgemental services, and adopt the right attitude that would reassure the confidence of adolescents.

The aim of this chapter is to explore the views/perceptions of service providers on adolescents' access and use of SRH services in Nigeria by considering the following objectives:

**To explore service providers' views and perceptions on:**

- The sexual health challenges/needs of adolescents;
- Access and use of SRH services and the reasons for adolescents' non-access to SRH services;
- The preferred sources of SRH information and services by adolescents;
- Providing sexual health services for adolescents

## 6.3 Methods

### 6.3.1 Participants

This qualitative study investigated the views of sexual health service (SHS) providers who deliver SRH health services in Nigeria. The interviews took place from June to August 2017. The participants in this study have different professional backgrounds but the majority of them were nurses. Table 6.1 provides detailed demographic information about the participants. The recruitment of participants for this study was done purposively. This is because of the researcher's interest in selecting a diverse group of participants who deliver SRH services in different settings to adolescents in Nigeria. Also, to ensure findings reflect the views of service providers across different settings in Nigeria. More reasons for the choice of purposive sampling technique was given in chapter three (Section 3.5.2.1.).

In addition to interviewing the nurses, midwives and youth friendly service providers, the laboratory technicians and the Patent Medicine Vendors (PMV), were also interviewed. The reason for interviewing the laboratory technicians and PMV was because the laboratory scientists based in PHC centres are involved in HIV counselling and testing services, as well as other STI testing in Nigeria. Many of them deal with adolescents on a daily basis. Similarly, increasing empirical evidence indicates that Patent Medicine Vendors (PMV) and Community pharmacists (CP) (Local Chemist) serve adolescents with SRH services and products (Okonkwo and Okonkwo, 2010). The Nigeria Demographic and Health Survey (NDHS) (2008) found that Private Chemists (PMVs and CPs) were the chief provider of contraceptive methods in Nigeria and sixty percent of users obtain their contraceptive methods from the private sector (NPC, 1990). Table 5.1 in chapter 5 also shows that 95.1% of adolescents seek contraceptives from private providers hence the reason it was considered appropriate to include them in the study. Other criteria taken into consideration in the selection process were the participants' religion, age, education level, gender and years of service. Previous evidence shows that demographic and socio-cultural factors influence service providers' attitudes towards provision of SRH services to adolescents (Bamgbala, *et al.,* 2006; Godia, *et al.,* 2013; Bethea, *et al.,* 2007).

### 6.3.2 Recruitment sites and strategy

As explained in chapter 3, the participants for this study were recruited from the Federal Capital Territory Abuja. The majority were recruited from the Primary Healthcare Centres (PHC), followed by providers at the general hospitals and those at the YF centres. The participants from the PHC centres were recruited with the help of a contact person who was one of the chief nurses in Abuja. The participants from the general hospitals and YF centres were recruited with the help of the research assistants. Detailed information of the recruitment strategy and ethical process are discussed in chapter 3.

Table 6.1: Participants demographic details

| Interviews | Professional Background | Gender | Age | Qualification | Religion | Ethnicity | State of origin | Years of service |
|---|---|---|---|---|---|---|---|---|
| ABD | Lab scientist | Female | < 30 | Degree | Muslim | Hausa | Kogi | 1-5 |
| Amani | SHW | Male | 30-39 | Diploma | Muslim | Hausa | FCT | 6-10 |
| Babala | Nurse | Female | 50+ | Masters | Muslim | Hausa | FCT | 20 and above |
| Bless** | Nurse | Female | 30-39 | Degree | Christian | Igbo | Abia | 1-5 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Fatima | Nurse | Female | 40-49 | Degree | Christian | Yoruba | Lagos | 11-20 |
| Funke | Midwife | Female | 40-49 | Masters | Christian | Others | Delta | 20 and above |
| Gracious | YFP | Male | < 30 | Degree | Christian | Igbo | Imo | 1-5 |
| Gracy | SHW | Female | 40-49 | Diploma | Christian | Others | FCT | 1-5 |
| Ibra | CHW | Male | 30-39 | Diploma | Muslim | Hausa | FCT | 6-10 |
| Jay** | CHW | Male | 30-39 | Diploma | Muslim | Others | Kogi | 6-10 |
| Juden | Nurse/YFP | Female | 40-49 | Degree | Christian | Yoruba | Ogun | 6-10 |
| Kagin | Midwife | Female | 40-49 | Degree | Christian | Igbo | Abia | 6-10 |
| Sai-Mama | SHW | Female | 30-39 | Diploma | Muslim | Hausa | FCT | 1-5 |
| Udo** | Pharmacist | Male | 40-49 | WAEC | Christian | Igbo | Imo | 11-20 |
| Zaira | SHW | Female | 50+ | Diploma | Christian | Hausa | FCT | 11-20 |
| Zuwa | Lab scientist | Female | < 30 | Degree | Muslim | Hausa | FCT | 1-5 |
| Key: SHW: Senior health extension worker; CHW: Community health extension worker; YFS: Youth Friendly Service provider<br>** Service providers who work in a private clinic/facility | | | | | | | | |

### 6.3.3 Interviews

Semi structured interviews were conducted with sixteen SRH service providers. The participants have varied backgrounds. See table 6.1 for more details. On average, interviews lasted for approximately 54 minutes. At the beginning of the interview, participants were asked if they were interested in sharing their experiences of delivering SRH services to adolescents (Although the word “young people was mostly used during the interview). With the permission of the participants, all interviews were tape-recorded. The 16 interviews were subsequently transcribed. Notes were taken during the interview on the general attitude of the participants (moments of silence and non-verbal communication were developed to aid interpretation). The participants were reassured that any identifying information about them would not be transcribed. In this chapter, pseudonyms were used throughout to protect each participant’s identity.

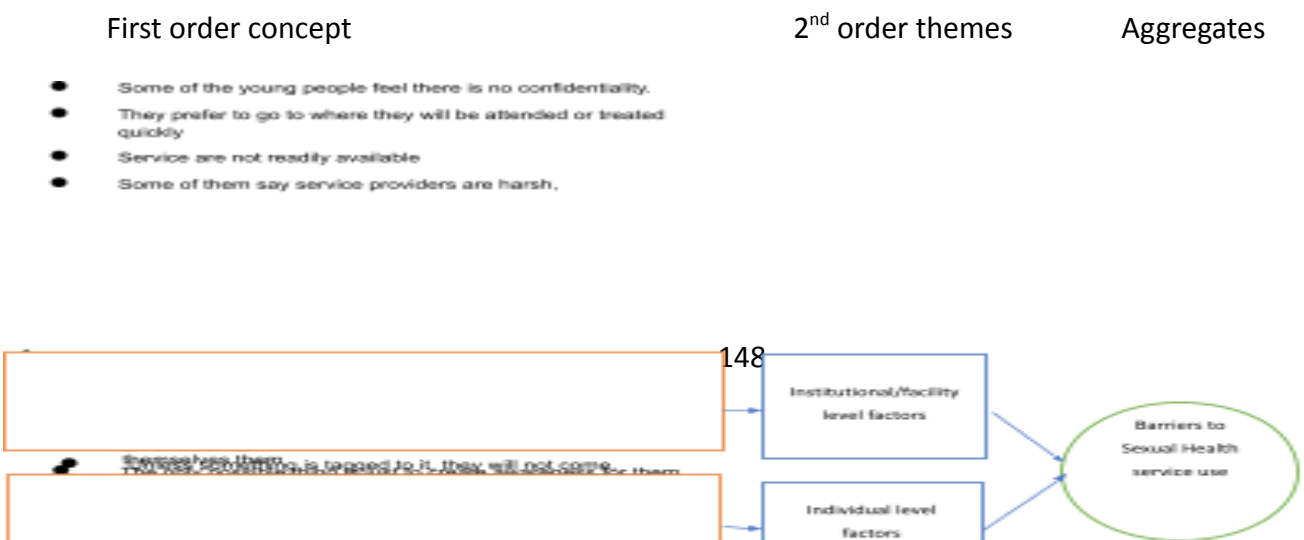
During the field work, at the end of every interview, the researcher reflected on the interview process and emerging issues. This was helpful in revising the interview protocol. Minor changes were made in the interview protocol after the first two interviews. For example, additional questions like “describe the process young people go through when they come for sexual health services”? Is there any sexual health programme going on in the community? What are the reasons why adolescents’ use of contraceptives has not improved since 2003? See appendix 1 for the final

version of the interview protocol. Two of the transcribed interviews were communicated to my supervisors during the field work and the feedback provided helped in modifying the interview protocol to ensure important questions were asked. In addition to member checking, my supervisors were constantly debriefed. Consultations with my supervisors were held throughout the data collection and analysis stage. These consultations according to Corley and Gioia (2004) were used to discuss emerging patterns in the data and evolving propositions.

### 6.3.4 Data analysis

As explained in chapter three section 3.5.2.4, this study adopts a thematic analysis approach guided by the Gioia *et al.,* (2013) framework. In this study, thematic analysis was used to describe the data set in detail and interpret the various aspects of the emerging issues. The data analysis in this chapter followed the six steps to thematic analysis described in chapter three (section 3.4.2.4). Four themes emerged (Service providers' attitudes to adolescent's use of SRH services, Sources of SRH information and services, Service providers' perceptions of the SRH services they provide to young people and Service Providers perception on the Sexual Health concerns and needs of adolescents). Each theme has 3-4 sub-themes. NVivo version 11 (A qualitative data analysis software) was used to organise and manage the data coding process. A coding list was developed in NVIVO, which was constantly reviewed and discussed with the supervisory team, and their inputs guided the data analysis and interpretation process.

Also, the thematic analysis in this study was guided by the Gioia *et al.,* (2013) inductive analytical framework. The reason for this approach is to show the rigorous processes of the data analysis, and to show diagrammatically (Figure 6.1) the transition from raw data to interpretation (Gioia *et al.,* 2013). In this approach, the first order in this process was compiled by recognising the patterns between coded sections, followed by organising the first order into second-order themes. The third and the final steps were to distil the second-order to form aggregates as shown below.



## 6.4 Results

### 6.4.1 Service Providers (SP) perception on the Sexual Health concerns and needs of adolescents

The above theme reports what service providers consider to be the sexual health concerns and needs of adolescents. This theme is divided into four different sub-themes to capture all the sexual health issues and challenges faced by adolescents and how they engage with the sexual health services from the service provider's point of view. This is to assess what service providers think are the sexual health needs of adolescents and compare this with what adolescents themselves consider to be their major challenge in Chapter 7.

#### 6.4.1.1 Adolescents access to sexual health services

Access to services is key to promoting the SRH rights of young people. Participants were asked about their perception of adolescents' access to SRH services. The majority of the participants reported that adolescents were not engaging with the service. They reported that this was more for boys than girls. About six of the participants revealed that adolescent boys for the most part were not attracted to accessing the public facilities. They noted that adolescent girls access services more than the boys. One of the participants in her opinion reported that the boys do not access and use the service because they do not have any issue;

> The young boys do not really patronise the service. We have more of girls than the boys. We don't capture the boys in our facility like that. If you see the laboratory report and the general statistics, you will see the rate of patronage by gender. (Babala)

> The girls use more services than the boys. (Ibra)

> We don't even see the boys. They do not come. (Laughing). They know how to take care of themselves (Kagin)

> They don't really come. The boys don't really come. I don't know maybe because am a woman oh (Fatima)

Participants at the Youth Friendly (YF) Centre clinics reported that girls do not normally come to the clinic. In terms of visiting the clinic, boys come more to use other non-sexual health services, such as charging their phones, watching movies and playing games because it is a youth friendly centre with some facilities to attract young people. But when it comes to actual access and use of SRH services, more girls access these than boys;

> Guys come to the facility more than girls but for issues and complains girls report more (Gracious)

When asked about the marital status of the adolescents who come to the clinic, the participants shared diverse opinions and views. The majority of those who work at the PHC centres reported seeing more married adolescents while those at the youth friendly (YF) clinics reported seeing more unmarried adolescents. One of the participants at the YF clinics reported that most married adolescents do not see themselves as belonging to the youth friendly services once they get married. Participants, in their general opinion, said that unmarried adolescents see family planning clinics as places that cater for married people; that the government concept of family planning was for married individuals. The unmarried were not part of the initial agenda of instituting FP in Nigeria;

> Adolescents who are married are the ones coming here most times to collect and use services. (Gracy)

> Most young people that actually come here are not married except maybe for the ones that have issues with teenage pregnancy (Fatima).

Ten participants reported the age of adolescents they mostly see at the clinic. Almost all

participants reported that they rarely see younger adolescents aged 10-14. Some of the participants mentioned that they see them only when they are brought to the clinic by their parents or teachers following sexual health issues. Participants noted that the younger adolescents find it difficult to walk in on their own;

You hardly find those 14 and below. They don't usually come (Amani)

Those age 10-14 don't usually come here even those 15 years. (Kagini)

The above quotes illustrate that the younger adolescents do not attend the services. This is the same experience for participants who work in PHC centres and youth friendly centres, although those in YF clinics report seeing them only when they are brought in.

#### 6.4.1.2 Sexual health concerns/problems faced by adolescents

Participants were asked about the sexual health concerns or issues adolescents present when they visit the facility. A number of SRH concerns were mentioned, ranging from issues related to pregnancy, STI and HIV/AIDS, rape, menstrual cramps, psychological issues and suicide cases for the girls, as well as HIV/AIDS, STIs discharge/itching to drugs/drinking for the boys.

Table 6.2: Sexual Health Concerns of adolescents by gender

| Boys | Girls |
|---|---|
| HIV/AIDS | Unwanted pregnancy |
| Itchiness in genital area | Rape |
| STI (Syphilis, Candiasis) | STI (Gonorrhoea, syphilis) |
| Peer pressure | Toilet infection |
| Rashes | HIV/AIDS |
| Pre-ejaculation | Rashes |
| Penile discharge | Itching |
| Urinary tract infection (ITU) | Discharge |
| Psychological problem | Mensural cramps |
| Relationship issues | Hepatitis |
| | Peer pressure |
| | Irregular mensural cycle |
| | Staphylococcus |

| | |
|---|---|
| | Abortion |
| | Relationship issues |
| | |

In addition to the sexual health concerns of adolescents, most of the participants expressed a deep concern and dissatisfaction over the risky lifestyle of adolescents. Most participants reported that adolescent boys and girls in the area were already exposed;

> Even now with consent or without consent, if they come and look for the services you give them. Okay…what are you preventing them from? These young people are already exposed (Babala).

Participants also stated that most girls believed that the use of Coca-Cola mixed with table salt will prevent pregnancy after sex. Amani and Udo in the interview expressed their opinion that some of the adolescents do not even like to protect themselves even when you advise or educate them on issues of protection, and some of them do not even want it. They prefer unprotected sexual intercourse (skin to skin);

> They use Coca-Cola and salt after sex. Some of these teenagers believe on that. We only tell them to use condom and you know sometimes they believe that in fact some of them will tell you skin to skin is better (Amani).

> Some of them will come and tell you that they missed their period. From that you will know that they still engage in unprotected sex. So, most of that case is what some of them come for (Udo).

> That is what I am telling you. Some of them don't even like to protect themselves even when you advise them or educate them on issue of protection. Some of them don't even want to hear that. They prefer skin to skin (Jay).

#### 6.4.1.3 Sexual Health Seeking Behaviour of adolescents

Participants were asked about the attitude of adolescents who are accessing services. The participants reported that those who have the courage to come at the health facility put forward different behaviours when seeking the services. Most participants reported that adolescents were shy, not open, come in secret with different excuses, and some cry when telling you their sexual health problems;

> They will be far away and tell you that this is what I want. They will never come openly to tell you what they need. They will keep going around and round without telling you what the problem is. Finally, they will tell you that I want to do family planning. (Babala)

> This is our entrance in this facility. If there is any young person that wants to use services, they usually pass the health facility behaving as if they are going somewhere else while checking to make sure no one is looking at them before they come in. (Ibra)

> Some of them will come in to talk to you. They will not even come in here. They will be at the door calling for your attention. They will tell you Nurse please come, I want to tell you something… (Funke)

The above quotes illustrate that adolescents do not feel confident when entering a health facility or sharing their problems with a health provider. They find it difficult to say what brought them to the clinic. Some of the participants noted that the girls use different excuses, like headache and fever to come to the facility. It is only when you interrogate them deeply that you get to know their problem. Also, one of the participants at the general hospital reported that when they come to the clinic, they would first of all stand at the door and check for someone who would smile at them. If you do not give them a smile, then they will leave the facility without using the services available. The expressions of participants here show that adolescents need service providers who are approachable within a supportive environment that is less judgmental. Some of the providers noted that sometimes, you would notice that they need attention or services by their body language. Sometimes you are the one to approach them;

> They come here secretly. Sometimes when they come, their body language will tell you they want something. Immediately you will know that they need something hidden. Even when they come, they still find it difficult to tell you why they are there. Sometimes when I notice the movement, I will ask them if they need condom using a different name…. (Udo)

> Yes, I told you, when they come in, first of all they will stand; if you don't smile at them, they will tell you they are just checking for somebody and they will go and you won't see them again (Funke)

#### 6.4.1.4 Sexual health needs of adolescents

Participants were asked during the interview about what they think were the sexual health needs of adolescents and the services available to them at various facilities. Participants' responses were

grouped into two categories. 1). Needs in relation to sexual health commodities such as condom, oral pills, HIV testing, sexuality education, injectables; and 2). Needs in terms of quality of service delivery (Confidentiality, privacy, friendly environment). Adolescents, apart from their needs of family planning commodities, also had needs that relate to service delivery. Almost all the participants reported that adolescents come to the facility more for condoms than any other FP commodities. This is what some of the participants have to say;

> Young people generally want to be treated like an adult, and like I said they want to be heard and they want to be understood, they want to be seen, they don't like to be kept at the background. I told you young people hate to be sidelined so that's what happens to them when they go to the conventional hospital so they don't treat them like normal adult (Gracious)

> I think, they need privacy and confidentiality. Some of the sexual health concerns of young people is that they only need condom. When they come here (Babala)

Participants reported that the desire for condoms by adolescents was more for male condoms than female condoms. Female condoms were not attractive to adolescent girls;

> We have female condom, only that they don't access them. We have family planning commodities like female condom donated to us by PROHEALTH international. In fact, since I collected the female Condom, none of the girls has come for it. Majority of the girls come for injectables. Young girls in fact don't really like accessing female condom. They would rather collect male condoms for their boyfriends. (Ibra)

### 6.4.2 Service providers' perceptions of the SRH services they provide to young people

This theme explores the wider perception of service providers in providing sexual health services to young people. It covers what participants think are the barriers to young people's access to services, the key facilitators to sexual health service use and the participants' views on youth friendly services and its markers. This is particularly important to assess service provider's views of the services they deliver to young people. This theme is discussed under four different sub-headings.

#### 6.4.2.1 Barriers to accessing SRH services (individual, facility and community level barriers)

Participants were asked what they think were hindering adolescent boys and girls from accessing SRH services. These barriers were categorised into individual level, community level and facility

level barriers. Table 6.3 provides a list of barriers identified by participants that hinder an adolescent's access to sexual health services. Cost is the major barrier at the individual level followed by distance/culture at the community level and confidentiality/no privacy at the facility level. Some of the participants have this to say;

> We ask service users to bring a token of N100 naira (£0.22) for the consumables for the family planning such as needles, cotton wools. However, the service users will ask you, is it not free? (Babala)

> They will say, I have been to the chemist. They think cost of going to hospital to obtain Family planning is higher than chemist (Bless)

> Maybe they think when they come, they will be asked to pay money. Some don't even know that it is free basically free. Some don't know but when you look at it, is not actually free because they pay for card (Funke)

> The older service users can afford to say OK let me use 3000 (£6.5) naira or 2000 (£4.5) naira to do family planning but the ones that are still much younger won't go to hospital because they can't afford to pay. They don't even want to expose themselves (Gracious).

Table 6.3: Barriers to service use

| Individual level factors | Sources | References |
|---|---|---|
| Cost | 6 | 20 |
| Afraid/Afraid of HIV screening | 5 | 7 |
| Lack of knowledge of available services | 4 | 8 |
| Susceptibility to infection | 4 | 5 |
| Awareness/Aware of safe period | 4 | 6 |
| Ashamed | 3 | 4 |
| Shy | 3 | 5 |
| Fear of the unknown | 3 | 4 |
| Fear of embarrassment | 2 | 2 |
| Negative perception | 2 | 1 |
| Lack of patience | 1 | 1 |
| Scared | 1 | 1 |
| Socio-cultural and community level factors | | |
| Distance | 4 | 5 |

| | | |
|---|---|---|
| Culture | 4 | 7 |
| Location | 2 | 4 |
| Don't want people to see them | 2 | 2 |
| Living in the same community with service providers | 2 | 4 |
| Stigma | 1 | 1 |
| Facility/Institutional level barriers | | |
| Confidentiality | 4 | 5 |
| No privacy | 3 | 3 |
| Seeking parental consent | 2 | 4 |
| Services not readily available | 2 | 3 |
| Delay | 2 | 5 |
| Available of services in chemist shops | 2 | 2 |
| Integrated services (ANC + Family planning +HIV testing) | 2 | 3 |
| Timing | 2 | 2 |
| Discrimination | 1 | 1 |
| Side effect | 1 | 2 |
| Service bureaucracy | 1 | 1 |
| Key: Sources refer to the number of participants who said it while the reference refers to how many times it was said in the interview | | |

At the community level, distance/location and culture were the two main barriers to an adolescent's use of services. Other barriers were living in the same community with service providers and community members seeing them visit the clinic. Participants noted that cultural factors, location of services and distance to the health facilities were the reasons why adolescents do not attend the SRH clinics. Two participants were of the opinion that distance was important, but they did not see it as a challenge because the YF clinic was located where it can only cost them a little for transportation, and also the PHC centres were available in every village. This means that if your own community is not serving you well, you can go to the next community;

> Well, let me just enter somewhere and buy it. That place is very far for me. Let me just buy it here and go on my own way. I think maybe that is the reason why they don't used to come here for services. (Gracy)

Participants reported that the prevailing cultural norms in the communities do not allow adolescents, especially the girls, to access services. They noted that due to the cultural tradition where domestic work is the responsibility of a female, girls are meant to stay at home while the boys are allowed to explore. In addition, there exists a culture where it is absurd to talk about sexual health issues. These issues stand in the way of adolescent access to services;

> Yes, because I know the culture really play high value if a girl gains access in coming to the hospital! So, they always say, they are being meant to stay in the house while the boys are meant to go out. (Fatima)

At the facility/institutional level, participants reported confidentiality and no privacy as the common barriers to adolescent access and use of sexual health services. Other barriers identified include seeking parental consent before accessing services and/or a service not readily available. Some participants acknowledged that confidentiality was important to adolescents' access to services. They reported that young people felt that there was no confidentiality in the services. One of the YF providers pointed out that young people in the past come more to the services when they have the back door open but since the new hospital managing director has ordered it to be closed, the frequency of service use has dropped;

> One of the major challenges is confidentiality. Young people find it difficult to assess services because of confidentiality, they always feel if I go now other people will get to hear about it. (Gracious)

> Our clinic is too exposed. Fencing the health facilities can also help. Because this PHC centre is too open. Young people feared if they come here, everyone will see them (Sai-Mama)

> Young people prefer to go to where people will not see them (Gracy)

> Yes…that is what I am telling you. Some of the services are not available here and because of that young people prefer other providers (private) where they will have everything. In fact, here some that use to come for that purpose. Be you Christian or Muslims, it is not possible to carry out such services. (Ibra)

One of the issues that came up during the interviews was the integration of antenatal care, family planning and HIV testing in the same unit. Participants identified service integration as an effective approach to capturing positive HIV cases in the clinics. However, it was only one participant who reported service integration to be a hindrance to adolescents' access to SRH services. These were what some participants had to say;

> Because of the HIV test, if they know they will force them to do HIV test or it might be included in the test, they will run away. So some of them might be worried, they don't want to know their status, they might say okay let's stay at home, without coming in. (Zuwa)

> We work with pregnant women, prevention of mother-to-child transmission (PMTCT) and other HIV services in this particular unit. If the PMCT patient is around, we ask any young person coming for Family Planning (FP) to wait until we finish the antenatal care (ANC) (Babala)

Most participants did not recognise that delivering both Antenatal care (ANC) and family planning services in the same room could deter adolescents from accessing services. In the last quote above, it shows what young people go through in an integrated service. Some of them who have faced delay in being able to access the services would be put off from revisiting the health facility.

#### 6.4.2.2 Facilitators/enablers of SRH service use

In addition to identifying the barriers to young people's access and use of services from the perspective of service providers, participants were asked to share what they feel should be done to improve an adolescent's use of services. Almost all the participants identified creating awareness and attaching incentives to services to be the two top facilitators to an adolescent's use of services;

> The only possible thing is just to create awareness for them, you understand? Like now in this facility, you can get all of them at the same time. (Amani)

> We need to do more awareness in schools**.** Is only awareness. I have told you, you create awareness. Once the awareness is created, the rest is going to be easy. (Funke)

> It's just mobilisation. I said mobilisation because all these things you are saying, once you get one or two of them after explanation, they will understand. (Bless)

This was followed by privacy, empowerment programme in the community, offering free services

and organising workshops in communities. The participants believe that integrating these factors into the existing approaches would yield a more positive result. Some of the participants had these to say;

> In fact, during the time of the MDG programme, if you come in here, you will see 2-3 people coming for services. But ever since they stopped it, the turn out rate has not been encouraging. Also, if there is an incentive i.e. something free, it will encourage them to come. (Ibra)

> With Snooker and table tennis, you will see young people coming around. They play them from there. We give them health talk, then those that have issues, they can come around and ask questions. (Fatima)

It was noted that having both male and female service provider personnel at the health service centres would facilitate service use;

> Also, it will be good to have both male and female at the centre. Because girls will find it difficult going to boys to ask sexual health related question. (Funke)

Table 6.4: Facilitators/enablers of adolescent service use

| Facilitators | Sources | References |
|---|---|---|
| Create awareness | 10 | 22 |
| Incentives | 6 | 15 |
| Privacy | 6 | 10 |
| Empowerment programme | 4 | 6 |
| Free services | 3 | 5 |
| Organise workshop | 3 | 4 |
| No delay | 3 | 3 |
| More personnel | 2 | 2 |
| Less bureaucratic and flexible | 1 | 3 |
| More Sexual Health delivery points | 1 | 2 |
| No insult | 1 | 1 |
| Non-judgemental | 1 | 1 |
| Approachable | 1 | 1 |
| Friendly relationship | 1 | 1 |

#### 6.4.2.3 Service providers perception of youth friendly services and challenges experienced

Participants were asked questions around the features of youth friendly services (i.e. the most important factors that make sexual health service youth friendly and their challenges of delivering a youth friendly service). Most of the participants noted that youth friendly features in terms of service delivery include: holistic service delivery which include delivery of ante-natal services, SRH services, screening, counselling, follow up and information provision. In terms of the attributes of service providers, they noted that being friendly, showing empathy, non-judgemental, not too strict, and understanding young people versatility, acceptance, not driving them away, good interaction and friendly environment could all yield positive outcomes. One of the participants from a youth friendly centre added that youth friendly service was supposed to be a One Stop Service (OSS) where young people should be able to have access to almost all the sexual health services they need. However, most of the responses came from participants who work at the youth friendly centres. Some of the participants who work at the PHC centres seem to have no clue about the features of Youth Friendly Services (YFS). The quotes below explain participants' reactions to the question;

> I don't consider you to be a service provider for young people, because for you to be a service provider for young people, you must be able to empathize with them, you are not being judgmental and you shouldn't start imposing rules and regulation upon them. You need to understand their versatility, understand the fact that these people can make mistake and do make mistake so you be there to catch them when they fall (Gracious).

> No, like actually, it is supposed to be a one stop centre where young people can access their laboratory services, access their pharmacy, access HIV testing and access everything (Fatima).

> From experience, I like the way they use to accept young people here. They don't drive them away, they don't question them why they visit the clinic. They will just be attending to them anyhow. They will accept them, they will do it for them and they will encourage them. And they will advise them (Gracy).

> The way you interact with them is important in a youth friendly centre (Jay)

Furthermore, participants expressed worries and challenges they face delivering youth friendly services, especially those who work in youth friendly centres. Some of the worries were lack of support from the parent hospital, professional rivalry, lack of commensurable remuneration

(salary), management leadership conflicts, lack of commodities. Participants expressed dissatisfaction over the support and attention the youth friendly service was receiving. The participants were of the opinion that the concept of YFS was not yet understood by many medical professionals who supposedly should know better;

> The hospital is not really supportive, sometimes even when we have a case with them, they will not refer them, and except maybe I just walk in there. There was a case like that, a girl went to school and was raped just because I came into this scenario, I wouldn't have known what was going on. When I went there in the unit, I saw it and I told them this is our case (Fatima).

> I only know about my own unit. I don't know whether they are even giving them any assistance because for them to go out for outreach in schools, we need logistics. They need vehicle to take them there. I think doing that needs materials that they would use such as posters and all that (Funke).

> So generally, I feel it's good and then the other side it's not been lucrative at all, because I started working here with 10 thousand as salary and that 10 thousand (25GBP) was been paid after my first year and I started collecting salary by 2013 and I started working and sometimes they won't pay for up 2/3months. They now increased the salary to 18 thousand naira (60GBP) per month (Gracious)

> Like I said, politics is everywhere. I had the head of unit (Line manager) then who had someone else in mind to put in the YF centre because at the beginning in my line of field, once they feel you are fulfilled in the place, they will victimise you. They knew I was passionate about the YFS. I was everywhere. I was active, I was working and enjoying what I was doing. They thought it was because I was over paid and funded. When I noticed what was going on, I just quietly left and I asked them to send someone so I can hand over. (Juden)

Also, lack of political will is one of the concerns expressed by participants. Participants noted government none-involvement in youth friendly services as a major setback. Participants reported that government leaves the delivery of YFS in the hands of the NGOs, which makes it difficult to sustain the Youth friendly services;

> In Nigeria, the policy makers sit and discuss on the table and drink their 5 alive (juice) and move away. But they don't implement all they discussed. Even in Dutse Alhaji clinic, there was nobody posted to look after the youth friendly centre in Dutse. Even when a young person comes, they will not meet anyone and next time they will not come again. There is no specific person posted to manage the service. You know when the government designs some of these policies, they transfer it to NGOs to run it. This is the reason why when the NGOs leaves; the programme collapses. The federal

government will pilot in a particular place but without implementation across the board. The NGOs that started the youth friendly centre in Dutse left (Babala).

You know in Nigeria is politics. They will tell you that the commodities are free but in reality, they are not free (Udo).

#### 6.4.2.4 Service providers perceptions and views on abortion

With reference to abortion services, almost all the participants were against adolescents and young people accessing abortion services. This was majorly due to participants' religious, cultural and punitive abortion laws in Nigeria. Many of the participants regardless of their religion, years of practice, ethnicity and gender were of the opinion that young girls with an unwanted pregnancy should be encouraged to give birth to the baby. They added that during their professional training, abortion was one of the things they were warned not to get involved with;

Either refer her to a place that she can have a safe abortion because in the government hospital, we don't do it because abortion is not allowed. It's not allowed. It is illegal. Yea, they do not allow it and then if she wants, she can decide to go anywhere to do it if she does not want to keep it, most at times, what we try to do is to tell them to keep them. Cause even when we were trained, that is what they told us. Now you know that in Nigeria abortion is illegal (Fatima).

Some even ask us to help them remove it and we counsel them why they should not remove it. Generally, yes, we encourage young people to keep the pregnancy. We don't encourage them to remove the pregnancy. We tell them we don't know where they can abort it. We don't push them anywhere. (Funke).

Abortion? I will never support it. I can only educate them by letting them know the complications and risk of abortion. You need to let them know how it can affect them. No, No, they should not be granted access to abortion rather we need to create awareness (Ibra).

Wherever they like, let them go. We don't do that. God said we should not commit murder. If you manage it, manage it otherwise, you can look for solution somewhere else (Kagin).

We sit the person down, counsel the person very well even invites the mother. We counsel the mother to tell them that they should not terminate the pregnancy. We advise them. That they would make sure that they will terminate 'because I do tell them we don't do that kind work. By doing that you have committed murder, you know that? I would even go into the bible to explain everything to the person, if the person refuses, not in this clinic or not me. Is not good. It is very, very bad. (Zaira)

In addition, most participants feared that relaxing abortion laws in Nigeria would fuel high levels of abortion among young people;

> I noticed the rate at which people now ask for abortion services has increased since they started discussing legalising it. This is the reason why it should be illegal. Before, adolescents don't really come to government hospital to discuss issues of abortion because they are ashamed of it but now, they are free to come in and tell you that please nurse this is my problem. Everybody will be behaving and molesting anyhow because they know is legal (Babala)

However, one participant who works at a youth friendly clinic expressed his support for abortion with the following reasons. The participant argued that if adults can be allowed by law to abort their baby, how much more young people who are financially constraint to raise children, who get drop out from school as a result of unwanted pregnancy. Moreover, they feel that society is not always supporting them;

> I am for abortion for young people, it is a necessity as far as there is a safe way to make and another irony, now because of the law regarding it they can't have safe abortion they have to now go and look for a way to go to get behind to get these things done; so most times is not done well. That way it develops complication that endanger their life forever. Some of them end up losing their lives so the baby dies the mother dies that is 2 and 0 to the society. Double loses (Gracious).

### 6.4.3 Service providers' attitudes to adolescent's use of SRH services

This theme explores the service providers' attitudes towards an adolescent's use of SRH services. It covers the belief of participants on an adolescent's use of SRH services, service providers' concerns for offering sex education to adolescents and their overall attitude towards delivery SRH services to adolescents. This theme is discussed under three sub- themes.

#### 6.4.3.1 Beliefs and Sexual Health Service delivery

The responses of nine service providers who provided an explanation to this theme showed that the belief system of the participants affected their delivery of sexual health services to young people. Many of the participants were very clear that their belief affects their relationship and delivery of sexual health services to adolescents; especially in the area of contraceptive use and sexuality education. However, the responses came from participants who were Christians rather than Muslims;

> Actually, for me even when they actually appointed me to work here, it was not easy for me. My dad is a pastor and I was brought up in a strong Christian background. My background, like I said, I work with young people. I stressed on abstinence even in my church so then how now turning around to start telling people to be using condom. It looks somehow and does not really look good eh, eh**.** If it is in my office, I can talk about use of condom, but I cannot in the church (Fatima)

> Laura's religion comes to the front. You cannot do that work successfully with that. Now she is learning to put it behind her (Juden)

> Yes, some teachers who are Christians are forbidden to talk about sex. But if you are paid to teach people, you should be able to do it (Udo).

> It pains me when you see people who are supposed to be educated in quote, having bias opinion when it comes to adolescent and youths' services because probably their cultural or religious background (Gracious)

Furthermore, participants seem to place emphasis on religious texts rather than the national guidelines for delivering sexual and reproductive health services.

> Even in the bible, the bible does not tell us that before you marry you must have sex with your wife or lady, you understand? So it is not advisable. I quote the bible to them. So, it's better. You tell them the truth. When you tell them, God will not hold you responsible (Zaira)

#### 6.4.3.2 No I won't offer it: attitudes of service providers on family planning services.

This section captures the attitude of participants on provision of family planning services to young people. Many participants in this study explain how they treat young people and their attitude towards them when they come to the clinic. Some of the participants reported scolding the service users with the belief that it will drive them away from requesting or asking for family planning. One of the participants from a private hospital admitted putting fear in young people as a strategy to discourage them from accessing family planning services. Participants show a negative and judgemental attitude towards young people's use of family planning services. This was seen in the comments of one PHC nurses that would not offer family planning services to young people, stressing that they should be discouraged. Similar attitudes were captured amongst other participants who felt it unwise to offer family planning services to young people. Some reported that during counselling sessions, they would tell young people that what they are doing is not good.

In this clinic, I will scold you. Tell you that you are too young to do this as a mother. Don't you know you are supposed to go to school? You are too young to do this at this age? They cannot just come family planning and I will give it to them. No, I won't offer it. I won't encourage it! For example, this one that just come now is already married and I will give them what they need but if you are unmarried and you are coming here when you are supposed to be in school. Why are you busy moving…Pio-pio-pio-pio-pio (Meaning moving from one place to another (Kagin).

Yes, few of them come to this clinic, and they will ask you if there is injection for family planning, they can put inside their body to prevent pregnancy. I will tell them is for married women and for those who have given birth, because we normally put fear in their body (Jay).

Sometimes we receive them or sometime we don't but before we receive any, we tell you the consequences of doing family planning. We tell you everything you need to know about family planning. We also tell you that what you are doing is good or what you are doing is bad for you to know (Amani)

#### 6.4.3.3 'You are making express way for them': Attitudes of service providers' towards delivering sex education to adolescents

Most of the participants in this study expressed deep concerns on delivering sex education to adolescents. Many of them feel that educating young people on sex education would make them promiscuous arguing that it is better not to teach them at all. Some participants feared that exposing them early to sex education would make them engage in sexual relationships early. One of the participants was of the opinion that creating sexual health awareness among young girls would encourage them to start having early sex. Some believed that advising young people on family planning would prompt them to start engaging in sexual activities

But the challenge with that is, it will give them licence to be moving from one man to another. You know why I look at it that way is because teaching children sex education, most especially the children of nowadays, by the time you talk, they would want to practicalize it and see what is there. Immediately they taste it once, it cannot be withdrawn again because they are already exposed. It's a nature. This is the reason I don't see the need for educating young people on issues of sex (Babala)

Because they know what they want. What is the essence of doing it?. They want to practice to see how it looks from there, they get in (Funke)

Yeah, because if you advise them on family planning that means you are making express way for them for all these sexual activities. The issue here is that when you

> start early to 'advise them on family planning or introduce them to family planning, it may lead them to start engaging in sexual activity (Jay).
>
> You see, even if you create that awareness, you are indirectly encouraging the girls, the children to start having sex early and always (Kagin)

One of the youth friendly service providers expressed deep frustration on the attitude of service providers who were supposedly expected to know better when it comes to delivering sexual health services to young people. She noted that the medical personnel in the general hospital where the youth friendly services were cited did not see the importance of the job they were doing. She felt they were wasting their time teaching young people sexual health education.

> Nurses and doctors…I have been with a medical director who will tell you the work you are doing is not relevant, you are just wasting your time teaching young people about condoms blah, blah, blah, blah, blah! The more you talk to them, the more promiscuous they would become. (Gracious)

However, few participants believed that sexual health education should be provided to adolescents. Some of the participants believed that adolescents should be taught sex education as they are at risk of sexual transmitted diseases. Participants in this category argued that if you do not teach them early, they will end up learning wrong information from their peers**;**

> The way the world is now, information flows. If you do not teach them sex education, their pairs will do in a negative way. And feed them with wrong information (Udo)
>
> Yes, sex education is good. They need the knowledge of sexual health because they are at risk. For me I don't believe teaching them will spoil them, the earlier you tell them, the better (Gracy).
>
> In this period, we are in now, if a girl reaches 10 years, they are supposed to be given sex education. Because from sex education they will understand the issue of abstinence (Ibra)

Also, on further exploration to identify the age participants consider appropriate for sex education to be delivered to young people. Responses showed variations in terms of appropriate age for sex education. Many of the participants who were in support of sex education were in favour of educating young people early on issues of sex between age 8-13 while some argued 15 or 18 years to be more ideal for providing sex education to young people. Here are some of their responses;

> In fact, let me just say from 10 or 9 because some of them even at age nine to ten years they have started to engage themselves in sexual activities (Amani),
>
> Hmm before it was, let say 15 years above. But now even 5years girl know something about it. Therefore, it should be started early (Zaira).
>
> I think in my opinion; young people should be educated with sexual health education at age 12 (Gracy)
>
> Let say as from the age of 18 years and above. I believe is perfect for sex education to be given to young people (Jay)

### 6.4.4 Sources of sexual and reproductive health information and services

This study went further to explore service providers' views on the preferred sources of SRH services by young people. This is because the quantitative analysis results suggest that young people prefer accessing sexual health services from the private providers. To validate the findings, service providers were also asked during the interview, from where they think young people prefer to access SRH information and services.

#### 6.4.4.1 Preferred sources of SRH information and services

The interviewed participants identified six sources from where they felt young people access sexual health information. These were family, friends, chemist, internet, TV/media and hospitals/health centres. Many of the participants believed young people access SRH information more from their friends, some believed they rely on the internet while others argued that they access services from their family members especially their older siblings. However, some participants admitted that most of the adolescents get just little knowledge of SRH issues from their families. One of the participants at the youth friendly clinic mentioned that some young people access SRH information from native service providers who sell herbal medicine.

> Because of the internet and ICT, they go on the website to get SRH information even on their own. It is only the wise ones that will now come and say this what I browsed from the internet, is it true? Because sometimes some of the information that are there are not true (Fatima)
>
> They have their elder brothers and sisters about SRH issues or even the mother or the father. But if the parents don't handle it the way they want it, they go to the chemist. If the chemist doesn't handle it properly, they now go to the hospital (Funke)

> They prefer talking to their friends. For example, if I am young person and I don't understand how my body is doing me, I will prefer to talk to a friend or one of my peers (Gracious).

With reference to SRH service use, participants reported different sources from where they think young people access SRH services. The places mentioned were private clinic, chemist shop/pharmacy, hospital, herbal/traditional medicine, and youth friendly centres. More than six participants reported that young people prefer to access SRH services from private providers like the Pharmacy or Chemist/medicine shop, while a few other participants argued that young people access services from hospital and youth friendly clinics. Some also believe that adolescents access the traditional herbal medicine dispensers. Here are few quotes to illustrate the above;

> You know some of them use their native and traditional medicine for STIs. Unless when the traditional medicine is not effective, in that case they will come here (Udo).

> They don't usually come, they prefer to go to the pharmacy or chemist shop to get condom. Some of them, their friends do tell them what to drink if they are pregnant (Kagin)

> They go to the chemist. And that's why 'sometimes even though they want to terminate the pregnancy, they do go to the chemist where they can combine the drugs for them (Zaira).

#### 6.4.4.2 Reasons for desiring private clinics

Furthermore, the reasons why young people prefer private clinics as opposed to government facilities where most SRH services are delivered free were also explored from the perspective of the service provider. Participants in this study noted some of what they considered were the reasons young people prefer private clinic to government hospital. The reasons were fear of HIV screening/integrated services, fear of relatives seeing them/parents, privacy and confidentiality, distance/proximity, fast, confidential, easily available. Fear of people seeing them, including parents and relatives, was the main reason that participants identified as the reason young people access private clinic more than government facilities. Some of the participants also mentioned that in the private clinic, they are only after money and therefore do not have the time to report you or interrogate you for anything; something which reassures. One of the participants who works at the PHC centre also stated that she felt that young people did not come to their centre because they were afraid of seeing her. This was

because she was born in the community where the PHC centre was located, and she knows almost all the families that live in the community;

> They don't want any of their relations, anybody, to hear about what they are doing. They want to do it secretly between them and their chemist man. Also, if I have the money private is the way to go because it is anonymous is confidential (Gracious)

> If you go to the pharmacy man, he will not come and expose you to the whole world. The chemist has no business discussing you with another person. Oh! do you know, I saw that girl entering there, is like she has gone to collect contraceptive. The chemist man has no business with that and young people love such places (Kagin).

> They do not like to come where HIV screening will be required. Because they don't want any of their relatives to know about it. They want it to be between them and the chemist man. They don't want any of their relations, anybody, to hear about that, they want to do it secretly between them and their chemist man (Bless)

One of the participants at the youth friendly centre noted that young people prefer private clinics than public clinics because a private clinic is more anonymous/confidential, it is fast, easily available and very convenient, unlike the government facilities where they struggle to maintain their anonymity.

## 6.5 Discussion

This chapter explores service providers' views and perceptions on adolescent access and use of SRH services in Nigeria. Four thematic areas emerged out of the study (See section 6.3.4). The discussion presented here follows the four key themes identified in this chapter to explain how the findings of this study fit within the existing body of knowledge.

### 6.5.1 Service providers' perceptions of the sexual health concerns and needs of adolescents

One of the objectives of this study is to explore what service providers think were the sexual health concerns of adolescents. The findings showed that adolescents were not engaging with and attending the SRH services as expected. The girls were more likely to attend the facility than the boys. This could be due to the fact that the girls are more at risk of contracting STI/HIV, unwanted pregnancy and abortion than the boys (Sia et al., 2014), and therefore could require more medical attention. Also, the study found that married adolescents access the SRH services more than their unmarried counterparts. Also, younger adolescents (10-14) were less likely to access and use SRH

services compared to their older counterparts. This arguably could be because those who are younger (aged 10-14) lack confidence and are less knowledgeable about the available sexual health services compared to the older ones and are therefore less likely to access them. The fact that SRH/family planning services are seen in Nigeria as being for married people could better explain why most unmarried adolescents do not attend and access the services. This study also found that adolescent girls were concerned about pregnancy, STI and HIV/AIDS and rape, whereas the boys were concerned about HIV/AIDS, STIs and discharge/itching.

The findings of this study are consistent with another study conducted in four African countries which found similar sexual health concerns and needs among adolescents (Bankole *et al.* 2015). The study found that adolescent boys were more concerned about HIV/AIDS, itching in their genital area and peer pressure, while the girls were more concerned with unwanted pregnancy, rape and STI. However, the results of the study presented here is not consistent with a similar study in the UK that examined providers' perceptions of sexual health concerns among younger adolescent girls. The study found that lack of knowledge about STI, alcohol consumption and peer pressure were the main concerns among young girls (Mason, 2005). Similarly, the results of the study presented here seem to disagree with a study in Nepal, which found that adolescent boys were much concerned about wet dreams, rashes and itching in the genital area while the girls were concerned about lower abdominal pain, white discharge and irregular bleeding during menstruation (UNFPA, 2015).The differences in the findings could be due to the variations in the cultural context of countries involved.

Additionally, the study found that the sexual health seeking behaviour of adolescents was very poor. While some were very shy, others do not feel confident entering the health facility or sharing their concerns with the health providers. Some of the participants felt that the boys do not come for SRH services because they know how to take care of themselves. This may mean that those who come for services are seen as amateurs and do not know how to look after themselves. Such belief could give rise to potential negative attitudes towards those who come to the clinics for services, which would possibly deter them from coming. Some also felt that the boys do not have issues while others think that being a female provider might be an issue for the boys. Moreover, international evidence has asserted that gender is not necessarily a concern for male access to services. They are much more concerned about staff members being knowledgeable about their

job and display a positive attitude towards them (Seex, 1996). This shows the belief and negative perceptions that participants hold about young people's SRH concerns and needs and with such a belief system/negative view, it would be difficult to meet the needs of adolescents especially the boys.

### 6.5.2 Perception of the SRH service providers on services to adolescents/young people

Participants' views of the service they provide to young people were explored. The results indicated that most participants thought that at the individual level, cost was the key barrier to young people's use of SRH services while at the community level, they believed that distance to the service centres was the key reason why young people were not accessing services. These findings are in agreement with those reported in a systematic review study in Sub-Saharan African (Kyei-Nimakoh, et al., 2017), studies in Australia (Johnston et al., 2015) and India (Nair et al., 2013), where service providers reported cost and geographical location as a major setback to young people's use of services. The findings showed that participants believe that creating awareness and attaching incentives were the key facilitators of young people's use of services. This is line with the findings of a qualitative study in the USA, which found that providers see adolescent knowledge of the services as the main enabler of contraceptive use (Rubin et al., 2013).

Surprisingly, only one participant identified integrating antenatal, family planning (FP) and HIV testing services in the same unit as a hindrance to young people's access to services. However, this is not true as evidence published in WHO brief shows that providing FP together with Maternal and Child Health (MCH) services is a more effective way rather than separating services to reach women who need FP (Waddington and Egger, 2008). The effectiveness of this approach among women aged 15-35$^{+}$ has been affirmed by studies conducted in India (Achyut *et al.,* 2016; Toth, 2010), Zambia (Silumbwe et al., 2018) and Kenya (Population Council of Kenya, 2011). International evidence and literature have suggested that integrating family planning, HIV/AIDS and maternal and child health programming is cost effective and can increase adolescents' access and use of SRH information and services (Rogers, et al., 2005; Kane and Colton, 2005). Also, it gives service users with open access to confidential, non-judgemental services, and a full range of contraceptives provision (Public Health England and Department of Health and Social Care, 2018), although integrated services did not show any improvement in contraceptive use in men in Kenya (Newman et al., 2016).

Furthermore, the results showed that the concept of youth friendly services seemed not to be understood by many providers. Many providers did not see youth friendly services as a worthwhile activity. They seemed to have some reservation about it and did not see the need to promote youth friendly services. The youth friendly facilities were not getting the institutional management support they require and there was lack of political will in sustaining existing facilities. This may better explain the reason why there is limited number of youth friendly services in the country, invariably contributing to young people's use of services. Evidence has shown that youth friendly services are effective in meeting the needs of young people (WHO, 2006). If this is not widely supported, there is a high tendency for young people's needs not to be met, and high chances of attending patent medicine vendors and quack providers. In a systematic review conducted in developed countries, it was found that making health services adolescent friendly can increase service utilisation (WHO, 2006). This is because youth friendly services are characterised by features that enable young people's access to services (Erulkar et al., 2005; Parkes et al 2004; Agampodi 2008). The World Health Organisation (2018) recommendations on adolescent SRH have advocated the need for youth friendly and non-discriminatory services in the provision of contraceptive and other SRH services to adolescents.

Almost all the participants were against adolescents' access to abortion services. They believe abortion was not an option in Nigeria and that adolescents with unwanted pregnancy should be encouraged to give birth to the baby. Most participants feared that relaxing abortion laws would increase the abortion rate among young people. However, this is not true as evidence has shown that highly restrictive abortion laws are not associated with lower abortion rates (Guttmacher Institute, 2012). This is because where abortion is permitted on broad legal grounds, it is generally safe, and where it is highly restricted, it is typically unsafe (Guttmacher Institute, 2012). A similar study in Nigeria shows that 61% of providers were of the opinion that abortion should be legalised (Bamghala et al., 2006).

### 6.5.3 Service provider's attitudes on adolescents' use of SRH services

This section explores participants' attitudes to adolescents' use of SRH services. The results showed that many participants had a negative attitude towards adolescents' use of SRH services, they were not in support of young people's use of SRH services and unwilling to provide SRH services to adolescents. Some participants were not comfortable telling adolescents about the use

of condom. This was primarily influenced by their belief system and culture. Participants tend to place emphasis on religious texts rather than the SRH national service delivery guidelines. No evidence to substantiate the effectiveness of using a religious text as counselling tools for delivering SRH service to young people. The findings reported in this study are in line with the findings of a qualitative study in Nigeria, which found that perceptions of service providers towards young people's use of services were influenced by their religion (Bamgbala et al 2006). Similarly, Godia *et al* (2013) in a qualitative study in Kenya exploring service providers' experience of young people's use of services, the study found that religious values, belief and culture influence provider's delivery of services. However, the findings of this study are not in agreement with other studies, which found education, moral doubts, and lack of knowledge to be key influencing factors (Mngadi et al 2008; Tilahun, 2012; Warenium et al., 2006; Herbert et al 2013).

Some participants in this study reported putting fear, discouraging, and scolding young people when they come for services in order to deter them from accessing services. Unfortunately, participants did not see this negative attitude to be a hindrance to young people's use of services. Rather, they believe cost and distance to the services to be the main problem. Participants believe that sex education promotes promiscuity, early sex and having an awareness of SRH would encourage young people into early sex. Participants were of the opinion that young people should not be taught sex education at all. This belief and perception are contrary to what evidence has suggested with regards to comprehensive sex education. A number of reviews have suggested that comprehensive sex education is generally effective in sexual risk reduction among young people and does not promote promiscuity as ironically thought by participants in this study (Kirby et al 2007; Underhill et al., 2007; Mavedzenge and Doyle, 2011; Johnson et al 2008).

### 6.5.4 Sources of sexual and reproductive health information

The results of this study showed that young people prefer accessing SRH information from their friends, family, chemist and internet/media. The preferred sources of adolescents' access to SRH information reported by participants in this study are consistent with findings of studies conducted in other countries (Buseh, *et al.,* 2002; Amuyunzu-Nyamongo *et al* 2005; Bourton 2006; Donaldson *et al.,* 2013; Both and Samuel 2014; Agampodi 2008). In a qualitative study in Sri Lanka, female adolescents seek sexual health information from friends (Agampodi, 2008). Both and Samuel

(2014) in a qualitative study in Ethiopia found that young people prefer seeking SRH information from friends, family members and mass media. Also, in a previous qualitative study in Nigeria, it was reported that adolescents prefer mass media as a preferred source for SRH information. The use of media platform could be as a result of the confidentiality it offers.

Additionally, with reference to adolescents' sources for sexual health services, participants in this study reported that adolescents prefer patent medicine vendors and the chemist shop/pharmacy to government hospitals. This is in agreement with the findings of a qualitative study in Uganda, which found that adolescents prefer visiting informal centres like the non-governmental clinics (Kiapi-Iwa, 2004). On the contrary, these findings seem not to agree with findings of other studies in Australia (Matich, 2015) and South Africa (Lince-Deroche, *et al* 2015) and Sub-Saharan Africa (Biddlecom et al 2007). Biddlecom et al (2007) in a quantitative study in four Sub-Saharan African countries (Burkina Faso, Ghana, Malawi and Uganda) found that adolescents showed strong preference for public clinics than the private ones. Matich (2015) and Lince-Deroche et al (2015) studies found that adolescents prefer seeking SRH services from specialist services like governmental clinics. This is not surprising as both countries seem to have more liberalised religion, cultural values and more accepting societal attitudes towards adolescents' use of contraceptives and other sexual health services, unlike in Nigeria where there is still deep embedded sense of disapproval of adolescent sexual activity among service providers (Ahanonu, 2014).

## 6.6 Conclusion

Overall, this chapter shows the views and perceptions participants have towards the service they deliver to adolescents. A significant number of the participants in this study were not in support of young people's use of SRH services and were unwilling to provide SRH services to young people. They tend to follow their belief system rather than the SRH service guidelines in delivering SRH services, they believe that exposing young people to comprehensive sex education would make them engage in early sex and become promiscuous. These findings have strong policy implications in meeting the National Reproductive Health Policy goal of increasing access for SRH services for young people by 50% by 2021 in Nigeria. This would contribute to the overall SDG 2030. Therefore, there is a need for a decisive action to be taken in order to address some of these challenges and

to also assess the view of young people themselves for holistic assessment of the SRH challenges faced by young people. Hence, the reason for the next chapter that examines the views of adolescents themselves on SRH issues and compares them with that of the service providers.

# Chapter 7: The views and perceptions of adolescents on access and use of SRH services in Nigeria.

## 7.1 Introduction

The previous chapter explored the views of service providers on adolescents' access and use of Sexual and Reproductive Health (SRH) services. This chapter examines the views and perceptions of adolescents on the SRH service access and use in Nigeria. This is important as there is a need to compare the views of providers with that of adolescents if effective programme design and policy implementation is to be carried out. The results are presented under three broad themes: Adolescents' SRH concerns and perceptions of service delivery, Adolescents' views on the SRH services, and Adolescents' sources of SRH information and services. Each theme has 3-4 sub-themes to capture all the relevant issues in the data. The chapter begins with a brief background to establish the rationale for the study. This is followed by the research method which covers the data collection method and analyses, after which follows the results, discussion and conclusion.

## 7.2 Background

In 2013, the Federal Ministry of Health in Nigeria developed the national guidelines for the integration of adolescent and youth friendly services into the Primary Health Care (PHC) facilities in Nigeria to increase adolescents' access and use of SRH services. This was necessary as available statistics show a high prevalence of unsafe sexual behaviour, teenage pregnancy, unsafe abortions, and infections among adolescents in Nigeria (NDHS, 2013). Among the major contributing factors to the above negative health outcomes among adolescents are the lack of access and non-use of SRH services. The NDHS (2013) shows there was a high awareness of HIV/AIDS among adolescents, but the level of comprehensive knowledge is low (32.1%) as recorded in chapter 4 of this thesis (table 4.1). This is far lower than the 95% global target set out at the United Nations General Assembly Special Session (UNGASS) Declaration of Commitment in 2010. The evidence from the Nigeria Demographic Health Survey (NDHS) (2013) shows that contraceptive use is low among young people aged 15-24. This is worrisome considering the early initiation of sexual activity and its negative consequences among adolescents (Bankole et al. 2004). Adolescents are of interest in

this study because they do not feel comfortable discussing the issues with service providers, parents and educators (Kilbourne-Broo and McKay, 1998). Understanding the reasons for low use of SRH services amidst negative SRH outcomes among adolescents would help facilitate and scale up service uptake.

## 7.3 Rationale and objective

Previous evidence shows that adolescents are not engaging with sexual health services despite profound challenges faced by them across the world, such as unwanted pregnancy, unsafe abortions, and high rates of HIV/AIDS and sexually transmitted infections (Morris and Rushwan 2015; Chilinda *et al.,* 2014). There are myriad of factors which are responsible for the underutilisation of SRH services by adolescents (Blanc *et al.* 2009; Chilinda *et al.,* 2014). In the previous chapter, service providers identified what they supposedly see as the reasons for adolescents' underutilisation of SRH services. This chapter argues that for adolescents SRH to be holistic and meeting the needs of adolescents, there is need to explore the views of adolescents. This is critical as the views of adolescents in terms of access and use of SRH services may differ from that of the opinion of the service providers (Jacobson et al. 2001; Pitts et al. 1996). The above evidence suggests that there is a need to explore the views and perceptions of adolescent use of SRH services in Nigeria so as to gain a holistic picture of the emerging issues. This is critical in order to develop an actionable policy to meet the SRH needs of adolescents in Nigeria.

**Research Objectives are to:**

- Explore the Sexual Health concerns of adolescents in Nigeria;
- Examine the barriers and facilitators to adolescents' service use;
- Identify the preferred sources of SRH information and services sought by adolescents; and
- Explore the attitudes of service providers from adolescents' perspectives.

## 7.4 Methods

### 7.4.1 Participants

The data for this second qualitative study was based on a Focus Groups Discussions (FGDs) which took place from June to August 2017. Adolescents in this study were stratified based on age (10-14

and 15-19), gender (male and female) and school attendance (in-school and out-of-school). The recruitment of participants for this study was done purposively. This was done to ensure the selection of a diverse group of adolescents that meet the selection criteria (Bowling, 2009) and to ensure that findings reflect the views of adolescents both old and young, male and female and in-school and out-of-school. Stratification was based on the evidence that out-of-school adolescents are less likely to practice safe sex and are also less likely to use modern contraceptive methods than in-school adolescents (Ndyanabangi, and Diesfeld, 2004). The results in chapters 4 and 5 showed that older adolescents and those in school were more likely to use contraceptive. Other studies have revealed similar findings. (Megabiaw and Awoke, 2013; Oljira et al., 2013; Yadav *et al.* 2015).

### 7.4.2 Recruitment sites and strategy

Adolescents for the FGDs were recruited from the Federal Capital Territory Abuja, Nigeria. Altogether, eight FGDs were conducted across the area councils in Abuja; four in-school and four out-of-school. In each of the schools, two Focus Groups were conducted among the males only and two were conducted among females only. Each gender was split into two age groups (10-14 & 15-19). The same was applicable for the out-of-school group. The participants in the FGDs were on average, aged 15.7 years for both male and female. The participants in the FGDs were 44% Muslims and 56% Christians. The FGDs were led by the lead researcher who has experience and training in qualitative research with the support of a research assistant who helped with the field notes. A total of seventy-four participants, with 8-10 participants in each group, participated in the study so as to stimulate good and manageable discussions. FGDs with in-school adolescents took place in secondary schools in Abuja, while FGDs with out-of-school adolescents took place in a Primary Healthcare centre and youth friendly centre in Abuja. Both the in-school and out-of-school adolescents were recruited with the help of the research assistants.

### 7.4.3 Focus Group Discussion (FGD)

The FGDs were conducted predominantly in English with some elements of broken English where necessary for the out-of-school participants. The participants had varied backgrounds and majority of them came from different states in Nigeria but were resident in Abuja at the time. On average, each of the FGDs lasted for approximately 62 mins. The overall questions asked were grouped under four broad areas (See the FGDs guide in appendix 2 for details of the specific questions

asked). At the start of the discussion, participants were asked if they were interested in sharing their views and perceptions about adolescents' use of SRH services. With the permission of the participants, all FGDs were tape-recorded. The eight FGDs were subsequently transcribed. The participants were reassured that any identifying information about them would not be transcribed, allowing them to remain anonymous.

During the field work, at the end of each of the FGDs, the researcher reflected on the FGD process and emerging issues. This was helpful in modifying the FGD protocol. Few changes were made in the FGDs guide such as:

- Have you or any of your friends been involved in the design of sexual health programmes?
- What do you think about the location of SRH care facilities?
- Describe the experience of young people like you in using SRH services?
- What are the reasons why young people prefer private clinic to government clinic?

One of the transcribed FGDs was sent to my supervisors during the field work and the feedback provided was helpful in modifying the interview protocol to ensure important questions were asked that addressed the research questions. In addition to several consultations with my supervisors during the FGDs and the data analysis stage, member checking was applied after the FGDs to increase the quality of the analysis and interpretation of results (See chapter 3 for more details) (Corley and Gioia, 2004).

### 7.4.4 Data analysis

As explained in chapter three and six, this study adopts a thematic analysis approach guided by the Gioia *et al.,* 2013 framework. The data analysis followed the six steps to the thematic analysis described in chapter three section 3.5.2.4. Three themes emerged from the analysis. Each theme has 3-4 sub-themes to capture all the relevant issues in the data.

## 7.5 Results

### 7.5.1 Adolescents' perceptions of their sexual health issues

This theme reports what adolescents think are their sexual health concerns and their experience of accessing and utilising sexual and reproductive health (SRH) services. The section is divided into three sub-themes: Adolescents' sexual health concerns and risky behaviour, experience and perception of service delivery, and perception on sex education.

#### 7.5.1.1 Adolescents' sexual health concerns and risky behaviour

Understanding the sexual health concerns of adolescents is particularly crucial in trying to know what goes on in their own world in order to compare it with what service providers think. Participants were asked what were the main sexual health concerns of adolescents like them? The answers were divided into two groups; the concerns of the boys and the concerns of the girls. Table 7.1 reports the sexual health concerns of both adolescent boys and girls. The first four concerns reported by the boys were masturbation, STI including HIV/AIDS, seduction from girls and early sex;

> But majority of the boys, practice and have masturbation problem, because majority are shy and lack confidence to talk to a girl. Some boys would prefer to masturbate than to talk to a girl because of shame (FGD, Male out of school aged 15-19)

> Some boys are worried and have concerns about HIV/AIDS. We need education and where we can get tested. For me now, I don't know whether I have HIV/AIDS (FGD, Male out-of-school aged 10-14).

> Having sex early. Many young people are having early sex at an early age. Having a girlfriends and boyfriends are now normal (FGD, Male in-school aged 10-14).

On the other hand, the girls reported teen/unwanted pregnancy, rape, sexual abuse/harassment and early marriage. Some of the participants were concerned that many young girls were getting pregnant and some were being raped by their close relatives who are supposed to protect them. They also noted that they face sexual harassment from male teachers who are meant to be their gate keepers. Here are what some of the participants had to say;

> Most young girls in our community have concerns about unwanted pregnancy. Most young girls, when they get pregnant, the girl stops going to school while the boy continues to go to school. (FGD, Female out of school aged 10-14).

> Young girls are concerned about rape. Most of the girls are been raped. Most girls are intimidated and abused by their uncles. Many find it difficult to speak up about some of these issues. (FGD, female in-school aged 10-14).

> Girls are concerns about sexual harassment from boys and teachers. The boys will touch you where they are not supposed to touch in your body. (FGD, female in-school aged 15-19).

Table 7.1: Sexual Health Concerns of adolescent boys and girls

| Boys | Girls |
|---|---|
| Masturbation | Teen/unwanted pregnancy |
| STI including HIV/AIDS | Rape |
| Seduction from girls | Sexual abuse/harassment |
| Early sex | Early marriage |
| Rape | STI/HIV/AIDS |
| Incest | Premarital/early sex |
| Seduction from girls | Abortion |
| Friendship/relationship | Incest |
| Ejaculation | Abduction |
| Peer pressure | Virginal fistula |
| Sexual relationship among siblings | Prostitution |
| Drugs | Bullying |
| Low self esteem | Pelvic inflammation |
| Lack of confidence | |

In addition, participants reported that most adolescents in the community live a risky lifestyle. They described that sexual intercourse was a prevailing behaviour among their peers; mostly unprotected as many do not have access to contraceptives. They reported early sexual relationships among young people and acknowledged that at an early age, young people in their community have started having boyfriends/girlfriends and engaging in early sexual intercourse. This was reported by both adolescent boys and girls. However, the risky behaviour was more prevalent among out-of-school adolescents than the in-school boys and girls;

> In our school, when they go at the back of the toilet, they will enter each other (Clap) and start having sex. Some girls they will just open their legs. It's common in our school. (FGD, female in-school aged 10-14).

> Some young girls in this community have boyfriends. The thing is causing problem here. Young girls in this community start to get boyfriends at the age of 11 (FGD, female out-of-school aged 10-14).

Some noted that some of their friends patronise/seek out prostitutes, especially the out-of-school boys aged 15-19. Some also reported that some girls were lured into sex because of gifts from the opposite sex who were most times older than them;

> Some girls, if they want to eat indomie (Noodles) they will go and meet a boy. Please I want to eat indomie, can you buy for me? And the boy will say till we do that thing. The girl will be like "which thing?. He will say "pencil and sharpener" [laughing] (FGDs female out-of-school aged 15-19).

> "Before people who are sexually active are around age of eighteen, and above, but now you can see a child of ten years sexually active nowadays, like they say these young people, are not guided very well. I have seen a girl of twelve years old that is pregnant in her school uniform" (FGD, Male in-school aged 15-19).

Both the girls and the boys, but especially the girls, expressed deep concern about incest among adolescents. They noted that most girls were intimidated by their uncles and older relatives. One mentioned a case in their community where an uncle slept with a girl less than 14 years old and infected her with an STI;

> Most girls are intimidated by their uncles. I heard a case of an uncle sleeping with a girl less than 14 and infected her with gonorrhoea (FGD In-School girls aged 10-14).

> Brothers and sisters having sex. Even a guard is having sex with his daughter (FGD In-School boys aged 10-14).

In addition to sexual practices among relatives, participants reported the non-use of condoms among adolescent boys. According to them, most boys did not value condoms. Some of them testified that adolescents' non-use of condoms was due to unplanned sexual intercourse taking place. Most times, they get offers from girls when they were not prepared and have no condom immediately available. According to the boys, they said that the majority would rather have sex without a condom than miss out on the opportunity. The out-of-school boys believed that this was largely due to lack of knowledge and the non-value for condoms. Some out-of-school girls were of

the opinion that some girls do not use family planning, e.g. oral pills and injectable, because it would damage their womb; hence the reason they preferred skin-to-skin sexual intercourse. The out-of-school boys seemed to have a low risk perception about infection and do not like accessing sexual health services;

> We young boys, we do not miss opportunities. Opportunity comes but once (FGD Male out of school aged 15-19).

> Nowadays boys do not like to use condom, they just believe that they do not feel it when using condom. Many of them do not use it because they don't know the value of condom; even when you give them, they will just useless it (FGD Male out of school aged 15-19).

> Some men don't like using condom. Therefore, will discourage the young girls from thinking of getting condom. I don't know why they do this. Maybe because they are not the one to face the problem when it comes. If anything happens, they will abandon the girl. Most times they denial the pregnancy (FGD Female In school aged 15-19).

> Most young girls in the community do not like going for family planning services because they believe it will spoil their womb. That is the reason many prefer skin to skin. (FGD Female Out-of- school aged 10-14).

> Boys in this community do not like accessing services because they believe the sickness will not do them anything (FGD Male Out-of- school aged 10-14).

#### 7.5.1.2 Experience and perception of service delivery

In this sections, participants' experience and perception of access and use of services were explored. Overall, participants reported that some adolescent boys and girls do not feel comfortable going to the hospital or health centres to access services. This was because some do not feel bold enough to tell the providers of their SRH problem. Some also reported that the environment was not conducive and most times it was a public place where you can meet many people. They also stated that young people complain of privacy and most of the time, the consulting room was not private. Here are what some of the participants had to say;

> "A lot of them are not comfortable walking up to a hospital and telling them that please I have rashes" (FGD In-school Female aged 10-14).

> "In government hospitals, most young people complain that they don't usually give them attention" (FGD In-school Male aged 15-19).

> Some young people complain of privacy. In government hospitals, you can see up to 3 people in the consulting room. Sometimes a nurse and doctor in the consulting room. So, when you are discussing with the doctors someone else is listening to the conversation (FGD out-of-school Male aged 15-19).

Some also mentioned that in public hospitals, commodities like condoms have remained there for a long time, often longer after their expiry dates. Therefore, there are many occasions when possibly defective condoms have been given out or even purchased.

> In public hospitals, their condom stays longer. It is not good. Some of them keep it for more than six months. The quality is not there especially in health centres. They will continue to give out the condom even when is no longer good. (FGD In-school Male aged 15-19).

### 7.5.2 Adolescents' views of the SRH services received from providers

This theme explores the wider perception of adolescents about the services they are receiving from service providers and some of the perceived challenges they are experiencing on receiving these services. This theme is divided into 3 sub themes: Attitude of service providers, barriers to accessing services, and facilitator of sexual health service uptake.

#### 7.5.2.1 Attitude of service providers

This section reports some of the adolescents' perceptions about service providers' attitudes. In almost all the FGDs, adolescents reported some of the poor service they receive from providers. Participants in this study reported that service providers embarrassed them, were not polite to them and treated them very harshly. One of the participants reported that the providers were very rude and they always speak to you in a bad manner at the hospital. Also, communication was one of the issues reported by participants. They noted that some of the nurses did not know how to talk or conduct themselves;

> Some of the service providers are very harsh and not polite. They seem to transfer aggression from home to work (FGDs, Male In-school aged 10-14).

> The nurses are very rude. They talk to you rudely at the hospital. I cannot go for any test in such hospital. Even when I go, before they begin to insult me, I will leave the hospital (FGDs, Male Out-of-school aged 15-19).

> I will not go to that place because of the way they talk. Some of them don't know how to talk actually. They will talk and use aggressive words on you (FGDs, Female In-school aged 10-14).

> In public hospitals, the medical personnel are always in a hurry. They don't even give you attention. They will just talk to you in two sentences and that all. (FGD In-school Male aged 15-19).

One of the groups noted that sometimes the providers would threaten to call or report you to your parents in front of you. This makes young people afraid of coming to the hospital next time. Some would inform your parents that you visited the hospital to collect condoms;

> They will tell you, who is your dad? We will call him and tell him that you are doing rubbish. Because of this, you wouldn't want to come to the hospital next time (FGDs, Male In-school aged 15-19).

> Some of the nurses gossip a lot. If you visit the hospital, by tomorrow when they see your mother coming, they will go and tell her mama Muazu, I saw Muazu collecting condom. (FGDs, Male Out- of-school aged 15-19).

> In our place, they will tell you that I won't do it for you, you are too small for abortion. Go and come with your parents, and they don't want to come with their parents, so they would rather go to a private hospital not minding the money (FGDs Female out-of-school aged 15-19).

> You are too small, I won't give it to you. Give me your mother's phone number. I will call her and tell her (FGDs Female In-school aged 10-14).

Some of the participants reported issues of confidentiality with providers. Many were of the opinion that providers do not keep secret any information known to them. Sometimes when you have visited the hospital, by the time you get home, your parents are already aware of what has happened at the hospital. One of the participants expressed dissatisfaction over how the nurses openly discuss your HIV test results. Some of the providers would just announce it within earshot of everyone, making your HIV result common knowledge.

> You will just enter the house and your mama will ask you that so you went to the hospital to see my friend? You are even surprise that your mother knows about your visit before you enter house (FGDs, Female out-of-school aged 15-19).

> Even with positive HIV result, they will shout it loud in a way people around will know you came for HIV testing. Even when the result is not positive, the people around will be looking at you somehow (FGDs, Male out-of-school aged 15-19).

Most of their concerns lied in the unpleasant treatment they received from service providers. They reported that most of the providers would ask for your age and question you on what you want to do with the condoms. So far, their experience seemed not to be a good one as some reported that at times the nurses would make fun of you. When you ask them for a condom, they will ask you if *'is it your father that bought it'* (meaning that these young people should not ask for condom because it was not their father that purchased it for the hospital use). Providers' attitudes cut across all the participants, including the boys and the girls. However, the out-of-school adolescents aged 10-14 seemed to report this more;

> Some doctors and nurses in public hospitals will tell you that at your age what are you using the condom for? They will tell you at your age, are you supposed to be using condom? I am not sure your parents will send you to buy this for them. They would come on their own if they need it. They would like to find out the reason why you are buying the condom (FGD Out-of-school Female aged 15-19).

> Imagine! Someone like me going to ask for condom in the PHC centre, the nurses will make jess of you. Someone for example will ask you that what do you need condom for at your age? Go away from my face. Sometimes they do not pay attention to you as a young person. Instead of them to give it to you. Some will ask you is it your father that bought it? (FGD Out-of-school Male aged 15-19).

> If you tell the service providers that you don't want your parents to know about the services you are obtaining, they will tell you that for certain reasons you would need to go and meet your parents. But if you go to private clinics, the medical personnel are kind hearted and if you explain things to them, they will understand. They will attend to you but not so in public hospitals (government owned) (FGD In-school Male aged 10-14).

#### 7.5.2.2 Barriers to accessing SRH services

This section reported what adolescent boys and girls consider to be a hindrance to them in accessing services. It is particularly important to understand some of the concerns and challenges that adolescent's face in accessing services in order to proffer solutions and address their problems. The responses are categorised into three levels: individual, community and facility level. Table 7.2 provides a list of barriers identified by participants. Being shy and afraid were the top barriers at the **individual level** that prevent adolescents from accessing services even when they

were freely available. Participants noted that the majority of adolescents were afraid because they do not know who they would meet/come across at the facilities. This was more for out-of-school boys and girls than their in-school counterparts. The girls reported being more timid than the boys. Here are what participants had to say;

> Adolescents to not like to come because they are afraid that when they go there, the nurses might know them and inform their parents that they are accessing the services they are not supposed to be accessing (FGD Female out of school aged 15-19)

> In public hospital, two or three people can be involved in your case which causes the young girl accessing services to be ashamed and uncomfortable (FGD Female out of school aged 10-14)

> They actually don't know what will come out of their visit, so they are afraid. And sometimes they are ashamed of the persons they will meet at the health centre (FGD, Male Out of school aged 10-14)

Other individual level barriers that were reported include lack of confidence, cost of services, fear of seeing parents and lack of knowledge of available services. Participants reported that some adolescents lack the confidence to approach providers at the facility. This was generally because they do not know what to expect, they do not know who they would meet, nor do they know what the reaction of the service providers would be. This applied more to younger adolescents aged 10-14 years than their older counterparts aged 15-19. Few participants noted lack of knowledge of available services to be a problem. They added that some adolescents did not even know that some services were free at the health centres;

> Some when they come here, they just feel like it just HIV testing and counselling that is all, you understand. So, I believe, they are not well educated about the services that are available to them (FGD, Female Out of school aged 15-19).

> Well, it is just that some people are not bold enough. It is all about fear and boldness (FGD, Male Out of school aged 10-14).

> Some young people are afraid of meeting their parents or their mother friend in the clinic. In fact, you are finished if you make the mistake of meeting your mother friend (FGD, Male In-school aged 10-14).

**At the community level**, societal perception and living in the same community with providers is an issue. Participants indicated that most adolescents were concerned about what people may think

on seeing them visit the PHC centres. This was because these centres were seen to be for married women only, who by societal standards and expectations have legal rights to access contraceptives. They were not seen as catering for unmarried young people who were not expected to be engaging in sexual activities. So young people, especially the unmarried ones, were concerned about people seeing them at the health centres and what they may think on seeing them going into the health centre for sexual health services because of perceived societal expectations;

> People like me, before they go to the health centres, they would first think about how they will go to the hospital where most people know their parents. I would prefer going to Kuje and spend money in a chemist shop where nobody know me (FGD, Male Out of school aged 10-14).

> And sometimes they are ashamed of the persons they will meet. Thinking how am I sure the provider will not relate it to my friends, how am I sure I will not see my friends. As in, I don't want to see my neighbour (FGD, Female Out of school aged 15-19).

> The societal perceptions and cultural beliefs. Societal views contribute to young people non-use of service (FGD, Female In school aged 10-14).

In addition, living in the same community with providers came up as one of the barriers young people face. Participants reported that they did not feel comfortable seeing the providers in their community as many of them may know their parents;

> Yes, maybe because they are in the same village with the community health workers and after work, we use to see the health workers around the community (FGD, Female In school aged 10-14).

Table 7.2: Barriers to service use: Adolescents views

| Individual level factors | Sources |
|---|---|
| Ashamed/shy | 5 |
| Afraid | 5 |
| Lack of confidence/boldness | 3 |
| Fear of seeing parents/relatives/ Don't want people to see them | 3 |
| Lack of knowledge of available services | 2 |
| Cost | 2 |
| Fear of the unknown | 2 |
| Fear of disgrace | 1 |

| | |
|---|---|
| Lack of education | 1 |
| Community level barrier | |
| Societal perception | 3 |
| Living in the same community with service providers | 2 |
| Cultural belief | 1 |
| Peer pressure | 1 |
| Distance | 1 |
| Facility/Institutional level barriers | |
| Service providers attitude | 6 |
| Neglect/Do not give attention | 6 |
| Confidentiality | 5 |
| Delay/Time consuming/too much bureaucracy | 4 |
| Service not readily available | 4 |
| No privacy | 3 |
| Overcrowded | 3 |
| Long queue | 2 |
| Asking for personal details | 2 |
| Too exposed | 2 |
| Services not readily available | 2 |
| Delay | 2 |
| Inefficiency | 2 |
| Service deliver by female provider | 1 |
| Lack of quality | 1 |

**At the facility level,** the most frequent barriers reported by participants were provider's attitude, neglect, lack of attention and confidentiality. The participants were concerned about the attitude of service providers. They noted the way that service providers question them and embarrassed them in the presence of older clients in the clinic. While some of the participants reported that some of the providers were angry, unapproachable and sometimes judge them when they come to the health centres, others reported that they felt neglected and service providers did not give them the required attention at the health facility. Sometimes they would abandon them and in order to attend to other clients. They reported that they were not being considered as a priority.

Confidentiality was also mentioned as one of the most important barriers faced by many adolescents. Participants complained that providers do not keep information shared with them secret. As a result, many young people were afraid of going to the clinic as the providers may inform their parents;

> Some people feel ashamed to go and asked for condom. For example, if you go to the hospital to ask for condom, it raises concerns for the service providers. They will start to question you about the use of condom. Some will say, young girl like you, what do you need condom for? (FGD, Female Out of school aged 15-19).

> When you go there, the nurses will be talking to each other, they will not mind you. They will tell you to wait, wait, wait (FGD, Male Out of school aged 10-14).

> Sometimes, when you go to the clinic, the nurse while discussing with you will be saying it loud to the hearing of others in the waiting area or will even be telling other people about it (FGD, Female In school aged 15-19).

> Confidentiality is also a part of it. And sometimes they are ashamed of the person they will meet in the clinic. How am I sure he will not relate it to my friends? How am I sure I will not see my friends there? (FGD, Male In school aged 15-19).

Some participants were also concerned about the delay and too much bureaucracy that they experience when they visit health centres. Some reported that sometimes the services were not readily available and that they would be referred to other places. Both adolescent boys and girls expressed these concerns;

> In the government hospital, the process in which they follow before they give you the result is something else (FGD, male out-school aged 15-19).

> In public hospitals, they do not provide the service you want them to provide for you. They tell you come today and come tomorrow (FGD, Female In-school aged 10-14).

> Even for some services, they will ask you to go somewhere and buy it. This practice discourages young people from coming. They would rather go somewhere that they will give them the drugs immediately (FGD, Female In-school aged 15-19).

#### 7.5.2.3 Facilitators of sexual health service use

In addition to identifying the challenges faced by adolescents in accessing SRH services, participants came up with some factors they believed would encourage them to use of SRH services if taken into consideration. Adolescents identified privacy and confidentiality as the most

important enablers when considering use of services. Adolescent boys and girls preferred places that were hidden and would like any information they shared with providers to be confidential and secret. Many adolescents were concerned that information shared with providers does not remain secret, and at times was shared with their parents. These practices made them reluctant to engage with services. Addressing this single issue could well facilitate much greater service use;

> Because this place is open and young girls don't like it. For example, if I am coming to the hospital. Many people will see me when I am entering. There is need to have another entrance that is not too exposed. (FGD, Female out-of-school aged 15-19).

> In government hospitals, while you are there discussing with the doctor, there is always nurses in the same room attending to other patients or arranging files. Young boys do not feel comfortable sharing their issues in such environment (FGD, Male In-school aged 10-14).

> They may be scared that one day, somebody will see me in this area and inform their parents of what they are doing (FGD, Male In-school aged 15-19).

The above concerns show the extent to which participants dislike parental involvement and people seeing them at the clinic. Therefore, addressing these issues would facilitate service use.

Table 7.3: Facilitators/enablers of adolescent service use

| Facilitators | Sources |
|---|---|
| Privacy | 6 |
| Confidentiality | 5 |
| Provider not to be rude/harsh | 4 |
| More encouragement from staff | 3 |
| Create awareness | 3 |
| Young staff member | 3 |
| More activities in the facilities | 2 |
| Separate unit for young people | 2 |
| Friendly and approachable staff | 2 |
| Incentives | 2 |
| Compassionate providers | 2 |
| Free services | 2 |
| Organise workshop/seminars | 2 |

| | |
|---|---|
| No delay | 2 |
| More personnel | 2 |
| Less bureaucratic and flexible | 2 |
| More Sexual Health delivery points | 2 |
| No insult | 2 |
| Non-judgemental | 2 |
| Environment friendly | 2 |
| No stereotypes | 1 |
| Friendly relationship | 1 |
| Flexible opening hours | 1 |
| Gender balance (Female & male providers) | 1 |

Participants were of the opinion that having providers who were not rude and harsh would help utilisation of services. Many of the participants reported an unhelpful and judgemental relationship between service providers and young people. They noted that the attitude of providers did not allow them to share information to them. Participants also reported having more encouragement from staff would encourage many young people to use the services on offer. This applies more to out-of-school adolescents than in-school adolescents who believed that encouraging young people would help them to be bold and build confidence when accessing services. The in-school adolescents believe that having good relationship and treatment from service providers would improve service use;

> There is need for a good relationship between the providers and the young people. The attitude of the providers in public hospitals do not allow young people to open up and share vital information to them (FGD, Female In-school aged 15-19).

> They need to be encouraged to kill the shame in them and feel free to go for the services. It is for their own benefit (FGD, Male Out-of-school aged 10-14).

> The doctors, nurses and counsellors should be very friendly. There should be proper encouragement from service providers (FGD, Male Out-of-school aged 15-19).

> They should have a friendly attitude. If they are harsh when you meet them, their attitude will not encourage you to discuss in detail with them (FGD, Male In-school aged 10-14).

> They should treat people and treat them well. Sir, service providers should provide services from their heart (FGD, Female In-school aged 10-14).

In addition, other factors identified by participants to be helpful in encouraging young people to use services were creating more awareness, having young providers, offering more activities in the facilities for young people, a separate unit for young people, providing incentives and approachable staff. Some participants were of the opinion that creating awareness of available services through seminars and workshops would help service uptake. Some noted that some of the adolescents were uneducated and illiterate, and as a result do not access services. Here are some of the views of participants;

> Government should provide for them, creating awareness, not just creating awareness, but share condom with fliers (FGD, Female In-school aged 15-19).

> There is no fan in the facility. There is no proper rest room where young girls can go. No water and light in this facility. Sometimes if a young girl comes to the clinic, is good for them to see a woman or girl instead of seeing a man. Having more ladies in the clinic will encourage young girls to come (FGD, Female Out-of-school aged 15-19).

### **7.5.3** Sources of sexual health information and services

This section of the work explores adolescents' sources of sexual health information and services. It is important to understand who young people prefer accessing services from and where they prefer getting sexual health information so that those channels can be maximised in order to meet their needs.

#### **7.5.3.1 Prefer sources of sexual health information**

Participants reported friends, social media, internet and online platforms to be the most common sources for accessing sexual health information. Both adolescent boys and girls reported seeking information from these places, especially from their friends. The boys reported seeking information more from the internet than the girls, while the girls talk to their friends more;

> Most of us, we do not go to health centres often. We talk to our friends. So, for me, everything I got to know about sexual relationship, I didn't learn it from my mother, I

didn't learn it from my father. I learnt it from my friends (FGD, Female In-school aged 15-19).

Yes, they use internet services to access sexual health services. The internet service includes my question and answer platform. They prefer "my question and answer platform" because is private (FGD, Female In-school aged 10-14).

Some boys go online to get information about sexual and reproductive health issues (FGD, Male In-school aged 15-19).

While the girls were more likely to seek information from their parents, especially the mother and their school teacher (female teacher), who they referred to in this case as the school counsellor, younger adolescents aged 10-14 reported seeking information more from their parents than older adolescents aged 15-19. However, some of the participants reported that some girls were afraid of telling their parents because their parents would beat them, chased them out of the house, punished them and stopped paying towards their education

Some of the participants had these to say;

Some of the girls talk to their parents mostly their mother. Sir, you know we girls are very close to our parents**.** Whenever they have such issues, they normally run to their mum. Because we think she understands the issue more than us (FGD, Female out-of-school aged 15-19).

Some girls go to counsellors. Sometime school counsellors like the teachers more especially the female teachers or church counsellors. This is because the female teachers do not know their parents, do not know where they live. Anything you tell stays with them and they will not punish you for saying it (FGD, Female In-school aged 10-14).

Ok, most of them they meet their friends to discuss it, because they think maybe if I discuss it with my parents, they will be asking me how, why did you do this? You are a disgrace to the family. They will start condemning them, you understand, and most of them they are even scared to tell their spiritual head, because maybe they will see them as a sinner (FGD, Female In-school aged 15-19).

Table 7.4: Prefer sources of sexual health information

| **Sources of information** | Sources |
|---|---|

| | |
|---|---|
| Friends | 8 |
| Social media/Internet/ Online platforms | 7 |
| Parents | 7 |
| School councillors/teachers | 3 |
| Movie/films/videos | 3 |
| Siblings | 2 |
| Hospitals | 2 |
| Neighbours | 1 |
| Nurses | 1 |
| NGOs | 1 |
| Church counsellors | 1 |
| **Prefer sources of sexual health services** | |
| Chemist/pharmacy shop | 8 |
| Native/herbal clinic | 7 |
| Private clinic/hospitals | 4 |
| Government hospitals | 2 |
| Keeping to themselves | 1 |

Other sources reported by participants were through movies, siblings, hospitals, NGOs, church counsellors, neighbours etc. Both adolescent boys and girls noted that they sought information from their siblings, although some mentioned that some of their siblings sometimes were harsh and judgemental. They noted also that some of the NGOs working in their community had a free line where you can call and get information about any issues worrying you;

> Some seek information from NGOs. Some NGOs working in our community gave us phone number to call when we have any concern regarding our health. (FGD, Male In-school aged 10-14).

#### 7.5.3.2 Preferred sources of sexual health services

In addition to the above, participants also identified adolescents preferred sources of sexual health services where young people go to when they want to access contraceptive services or worried

about STI including HIV/AIDS. Participants were of the opinion that adolescent boys and girls preferred chemist/pharmacy shops as their sources of services. One of the participants noted that young people go to pharmacy shops but argued that, for example, if you have an STI, the only thing the pharmacist would say was that we would give you an injection, and would not even discuss other related issues. Participants were also asked about the right channels where they could pass on sexual health information, to which the majority of them reported that they would use the internet/online media;

> Some boys around the community where I live go to local pharmacy shop to access services when they encounter any sexual health challenges (FGD, Male In-school aged 10-14).

> Most young girls don't like coming to this clinic (PHC centre). They prefer going to Kwali or Gwagwa (Private). Some use tribal medicine to treat themselves (FGD, Female out-of-school aged 10-14).

> They go to chemist to collect some drugs and access other sexual health services, (FGD, Male In-school aged 15-19).

In addition to private clinic/chemist shop, some participants reported that some young people use native/herbal medicine rather than western-based medicine or treatment. The use of native medicine seemed to be more frequent among boys than girls. It was also mentioned during the interview that most young people in their community do not like to discuss any of these issues with anyone, preferring to keep it to themselves because they are afraid their friends would insult them. This attitude was more among out-of-school adolescents than their in-school counterparts;

> Some boys use herbal medicine. Especially the Hausa boys use the herbal medicine. The herbal medicine works for 30 days and within that period as a young boy you would not feel any erection (FGD, Male In-school aged 10-14).

> Most young people in our community do not like to discuss any of such issues because they are afraid their friends will insult them or use bad words for them (FGD, Female out-of-school aged 15-19).

#### 7.5.3.3 Reasons for online services and private clinics/chemist shops

Following participants preference for internet/online sources and private clinics, this section looks at the reasons behind young people's preferences for these places. One of the profound reasons that came up during the discussion was privacy. Participants noted that internet and online sources

were more private and confidential. When accessing information via this medium, remains anonymous with no face-to-face contact;

> In the internet, you are the only one accessing it. Nobody is there with you. There is privacy with the use of internet. There is no face to face contact when you are using the social media. You are not talking or discussing with anyone. The internet people don't know you either (FGD, Male In-school aged 15-19).

> It is secret. When you finish searching the information, you can delete the search history and nobody will know (FGD, Female out-of-school aged 15-19).

> These days, internet has many information so most people believe when they go there, they will see all the information. Because they want to hide it, they don't want it to be exposed. (FGD, Female In-school aged 10-14).

Other reasons noted by participants include not being shy or scared when accessing information and being offered relevant information, as many people had already shared their experiences. Participants reported that in online platforms young people do not feel shy or scared when accessing services, once again due to anonymity. Participants believe that in online platforms and internet, people who have encountered these issues before had shared their experiences. So, you are learning from experienced people;

> In the social media/internet, lots of people who have encountered these issues share their experiences for other people to know and learn from it. You can get information and solution to any sexual health issues (FGD, Female out-of-school aged 10-14).

> So, I believe the internet is better off than face to face conversation. Because if am talking to you directly, I will be shy and scared. So, instead of me doing that, I just browse on it, get what I want. Something I know it will be advisable for me, and won't be harmful (FGD, Female In-school aged 15-19).

> You will not see the person physically to say you are shy to talk to this kind person. You no one see the person face to face you fit still talk to the person for phone, person that have confidence will go and meet the person them go locate place for you to meet together to discuss (FGD, Male out-of-school aged 15-19).

In addition, participants were asked the reasons why they access SRH services from drug shops/chemist/pharmacy shops and private providers instead of the public clinics where some of the sexual health services are free. Most participants reported that in the government clinics, the providers like to know what brought you to the health facility**.** This information is then often

spread to other people. Some would ask you to be accompanied by your parents. They also mentioned that in private hospitals, no one would see you. This is a confidential setting unlike the public places where everyone would notice your presence. These were comments from participants;

> If I am pregnant and I visit the hospital, everybody will see me. They would like to know what brought me there. They will spread the information to the community. But in Private chemist shop, it's a bit secret. Nobody will see you when you go there for any sexual health services. Even the doctors here do not keep the information you share with them secret (FGD, Female Out-of-school aged 15-19).

> Young people prefer these places because when you go to the government hospitals, the medical personnel there will ask you to bring and give your parents details. They will give you a form to fill and, in that form, you will need to complete your parents' information. That is why young boys don't like going there (FGD, Male In-school aged 15-19).

> They prefer going because it is hidden. For chemist it is hidden but hospital maybe they might call your parents. I was saying some people they prefer going to chemist because some of them when they go there the chemist will just want the money (FGD, Male In school aged 15-19).

Participants also reported problem with overcrowding in the government clinics and they were more likely to see someone they know who may relate their visits to their parents. They noted that when visiting the government hospitals, providers would not attend to the adolescent's issues, even ignoring the adolescent most of the time;

> Because in private clinics, no one can see them to tell their parents. Because when you come back your parents will ask you where you went to and it's a big problem (FGD, Male In-school aged 15-19).

> In the national hospitals, it is a kind of crowded. When you go there, they won't attend to issues. For example, when you meet doctors for sexual counselling, they will ignore you. (FGD, Male In school aged 15-19).

## 7.6 Discussion

This chapter provides an overview of adolescents' perceived SRH concerns, barriers to access and use of services, sexual health behaviour and risky lifestyle of adolescent boys and girls, service providers' attitude and preferred sources of sexual health services. Although evidence around this

subject area is available globally (Bearinger, 2003), but nation-specific problems of Nigeria should be examined to provide services in a more acceptable manner.

### 7.6.1 Adolescents SRH Health Concerns and experience of service delivery

One of the key focal points of this chapter is to explore the SRH concerns of adolescents and their experience of accessing services. The result showed that the concerns of adolescent girls were different from the boys. While the girls were more worried about unwanted pregnancy, rape, sexual harassment and early marriage, the boys were more concerned about masturbation, STI including HIV/AIDS and early sex. The results also revealed that adolescent boys and girls were engaging in a risky lifestyle. While the boys were unwilling to use condoms, especially among out-of-school ones, the girls were unwilling to use family planning because they believed it would damage their womb and prevent future conception. A qualitative study in Uganda found that fear of side effects was the main impediment to FP use (Orach et al., 2015).

These negative and risky lifestyle behaviours could be attributable to many factors ranging from non-availability of condoms, low risk perception, lack of accurate knowledge of SRH information, lack of knowledge of sources of condoms, and lack of comprehensive knowledge of HIV to service providers' attitudes. The quantitative results in chapter 5 table 5.4 shows that adolescents with CKH were more likely to use contraceptives. Several studies have found significantly higher odds of contraceptive use among adolescents with higher educational attainment than those with no education (Amsalu-Felekeet et al., 2013; Bankole et al., 2015; Hall; et al., 2012; Kamal, 2012; Magadi and Curtis, 2003; Oginni, et al., 2015 and Bicetre, 2004). Also, poor risk perception, perceived susceptibility, perceived severity, perceived benefits of condom and family planning could be a factor, as noted in the Health Belief Model (Conner and Norman, 1996).

Lammers et al (2013) in a quantitative study in Nigeria found that low-risk perceptions of engaging in unprotected sex and not knowing that condoms prevent HIV infection appear to be the best predictors for risky sexual behaviour among men. The current study found that, disturbingly, some adolescent girls were sexually harassed and raped by their male teachers and uncles. Those who are meant to protect them and serve as their gate keepers, or even their guardians, are now their attackers. These findings are in line with a quantitative study among adolescent girls in Nigeria, which found that that 55.5% of adolescent girls experienced sexual harassment and 23.7%

experienced sexual exploitation while 20.8% experienced rape (Ogunfowokan and Fajemilehin, 2015). Although this is not only peculiar to Nigeria and has been experience and reported by adolescents globally, it is certainly more pervasive in the developing world where up to a third of girls' report forced sexual initiation (Olle, 2004). This practice has negative health outcomes among adolescent girls, such as unwanted pregnancy and STI including HIV/AIDS as condoms are rarely used in this type of intercourse.

### 7.6.2 Adolescents' views of the SRH services received from providers

This study explores the perception of adolescents on service providers' attitude. The result showed that adolescents' access and use of SRH services in these clinics have not been pleasant. Almost all the participants in all the FGDs reported that service providers embarrassed them, were not polite and treated them very harshly. Some reported that providers were very rude and speak to them in a bad manner and sometimes were aggressive. This attitude by service providers seem to be pushing young people to use other less effective and less comprehensive alternatives. The attitude of service providers reported here is similar to the findings of a quantitative study in the Delta state Nigeria which found that service providers were judgemental and unfriendly to adolescents' use of services; an attitude which put them off from accessing services (Onokerhoraye and Dudu, 2017). Other studies have argued that that the single most important barrier to care is a provider's attitude (FIGO, 2011).

Some of the participants were also concerned that service providers were flippant and do not keep their visits to sexual health clinics secret. In some cases, providers would threaten to call and inform their parents that they visited the clinic for SRH services while some would question them on their age, leading to harassment. This attitude of parental notification by service providers affects young people's confidence and access to services knowing that their sensitive issues discussed with providers would be revealed to their parents or guardians. Similar attitudes of providers towards adolescents have been reported in other studies in Nigeria (Onokerhoraye and Dudu, 2017) and other countries (Darroch and Singh, 1999; Finer and Zabin, 1998). This attitude cut across all the participants regardless of age, gender and education, but the out-of-school adolescents and those aged 10-14 seem to experience this attitude more. This could be because the out-of-school adolescents may have lower levels of confidence than the in-school ones. Also, the younger age groups have lower confidence levels and are seen not to be of the appropriate age

in order to access services. Lack of self-confidence among adolescents has been reported as an important barrier to SRH service access and use (Shaw, 2009). Also, evidence has shown that self-confidence influences adolescents sexual and reproductive health behaviour (Gloppen, 2010).

This study found that being shy and fear of not knowing who they would meet at the clinic were the most common individual level barriers to an adolescent's use of services. Participants noted that adolescents were afraid because when they visit the clinic, the nurse may know them and inform their parents or they may see people who know their parents. This is similar to the findings of a qualitative study in Lao People's Democratic Republic, which found that adolescents were shy and scared to seek services with healthcare provider (Sychareun, 2018).

At the community level, societal perceptions and living in the same community with providers were reported to be an important barrier, while at the facility level, a provider's attitude, neglect, lack of attention and confidentiality were the most common barriers reported by participants. The barriers identified here support the findings of other studies conducted in Australia (Johnston et al 2015), United Kingdom (Jacobson et al (2001), Republic of Vanuatu (Kennedy *et al.,* 2013), Africa (Amuyunzu-Nyamongo et al 2015) other countries (Reddy et al 2002; Rosen et al 2004). Johnston et al (2015) in a qualitative study found that adolescents placed greater importance on personal attributes of service providers such as a welcoming and non-judgmental attitude, and being attentive. Similarly, Jacobson et al (2001) in a mixed method study in the UK among adolescents found that adolescents perceived service providers as not having respect for their health concerns, have poor communication skills and lack understanding of confidentiality issues. Amuyunzu-Nyamongo et al (2015) in a qualitative study added that young people placed a high value on the attitude of providers, and confidentiality.

Participants further suggested what could be done to mitigate these barriers. They were of the opinion that making health facilities more private i.e. increasing the level of privacy by having separate individual consulting rooms with only one service provider, putting a fence around PHC, and where necessary for services to be confidential with friendlier attitudes from providers. They believe these would encourage young people to access services. They suggested that service providers should learn to keep information secret and be more encouraging in dealing with them, especially the out-of-school adolescent boys and girls and younger adolescents aged 10-14 whom this study shows have low confidence levels. These enablers identified in this study align with

those identified in other studies in Kenya and Zimbabwe (Erulkar et al., 2005), Australia (Matich et al 2015). Erulkar et al (2005) found that adolescents rated confidentiality and friendly staff as the most important characteristics in accessing SRH services. Relatedly, the Matich *et al* (2015) study found that young people prefer services where staff were friendly and non-judgemental.

### 7.6.3 Sources of Sexual health information and services

Participants' preferred sources of SRH information and services were examined. The result showed that participants preferred seeking sexual health information from friends and internet via online platforms. The girls sought information more from their friends while the boys relied more on internet sources. Apart from friends and internet, younger adolescents aged 10-14 sought information from their parents and teachers. The reason for this gender disparity could either be environmental, cultural or economic. This is because the use of internet in Nigeria these days is socio-economically driven, which places girls at a huge disadvantage as they are less likely to afford the internet data plan (Dixon, 2014). The result could also be attributed to some domestic chores and exigencies which take up a lot of their time. Girls are also less technologically oriented and have more technological anxiety issues than males (Dixon, 2014). The findings of this study agree with the results of other studies in Nigeria (Omobuwa, 2012), South Africa (Buseh *et al.,* 2002), Sri Lanka (Agampodi, 2008), Ethiopia (Both and Samuel 2014). Buseh et al (2002) in a qualitative study found that friends, mass media and family were common sources of sexual health information for adolescents. Similarly, Agampodi (2008) noted that female adolescents seek sexual health informally from friends. However, findings of a quantitative study by Donaldson (2013) in the USA tend to differ with the findings of our study. Their study found that 55% of female and 43% of males sought SRH information from parents and teachers, unlike in our study where the majority preferred friends and mass media sources. These differences could be due to the variance in cultural and belief systems between both continents. Arguably, most parents in developed countries like the USA are more liberal and less judgemental about sexual health issues than their African counterparts, where traditional values play a key role.

With reference to sources of sexual health services, the majority of participants preferred services from private providers, such as chemist shop, pharmacy and private clinics. This was the same for adolescent boys and girls regardless of age and education. The preference for private providers as opposed to public ones was observed in the quantitative analysis in chapter 5 table 5.1. The results

of the analysis showed that 95.1% of adolescents preferred private clinic/local pharmacy stores as against 4.9% that preferred the public (government) clinics. They believe private clinics were more confidential, less crowded and less open to the public unlike the government facilities where providers do not keep information secret and were very judgemental. The findings of this study align with the findings of Kiapi-Iwa (2004), which found that adolescents preferred accessing services from informal and traditional healthcare providers due to the confidentiality and privacy they offer. On the other hand, these findings seem not to agree with findings of a previous study in Nigeria (Omobuwa *et al.,* 2012) and in four African countries (Biddlecom *et al* 2007). The Omobuwa et al (2012) study found that 37.8% of adolescents prefer seeking sexual health services from government hospitals while 28.1% prefer private hospitals. It is worth noting that this study was conducted in Osun state which is one of 36 states in Nigeria and therefore may not represent the overall opinion of young people in the country. Also, Biddlecom et al (2007) in a study in four African countries found that adolescents showed strong preferences for public clinics over private clinics. This could be because of the difference in the institutional practice across the countries.

## 7.7 Conclusion

Overall this chapter shows the views and perceptions of adolescents on access and use of services. Adolescent girls were more worried about unwanted pregnancy, rape, and sexual harassment while the boys were more concerned about STI/HIV/AIDS and early sex. Out of-school adolescent boys and girls were unwilling to use contraceptive. Adolescents' experience of accessing and use of services was not pleasant as many adolescents face unhealthy treatment at the hands of services providers and the services also lack privacy and confidentiality which they identify as the core barriers. Participants prefer services from online sources and private providers because of the higher level of privacy and confidentiality they offer. These findings somewhat differ from what the service providers reported young people want but most importantly has uncovered both the supply side and demand side barriers to adolescents and young people used of services in Nigeria; revealing some policy actionable areas to meeting adolescents SRH services. The next chapter discusses both the qualitative and quantitative findings in line the theoretical framework adopted in this study.

# Chapter 8: Discussion

## 8.1 Introduction/background

The purpose of this chapter is to discuss the key findings of the previous four chapters in line with the Social Ecological Model (SEM), extant literature and Foucault's work on sexuality. Although chapters 4-7 have individual discussion, however, this discussion presented here links the result chapters together in line with the theoretical framework. This chapter is structured and presented in four sections; the first section summarises the key findings of both the qualitative and quantitative result strands. The second section discusses the overall research findings which were divided into five sub-sections covering the individual, family, community, institutional and societal level determinants of SRH service use among adolescents in Nigeria with the explanation sequential approach in mind. The third section links the findings to Foucault's theory of sexuality, and the final section discusses the policy implications of the findings in line with Foucault's theoretical construct and the extent to which the current study met the methodological rigour, as stated in chapter three.

This thesis examines the determinants of adolescent access and use of sexual and reproductive health (SRH) services in Nigeria. This was explored using a mixed-method approach as either a quantitative or a qualitative approach on its own is not sufficient to explore in detail the issue, considering its complexity. The quantitative part of the study was divided into two chapters: chapter four examined the trends and determinants of comprehensive knowledge of HIV/AIDS (CKH), and chapter five explored the determinants of contraceptive use among unmarried adolescents in Nigeria. Similarly, the qualitative strand was divided into two chapters: chapter six examined the views of service providers on adolescents' use of SRH services in Nigeria, while chapter seven looked at the perceptions and views of adolescents on their use of SRH services.

The discussion of the findings follows the Social Ecological Model (SEM) used in this study. The SEM provides a framework for understanding the complexities and multifaceted factors that influence sexual health service use among adolescents (Green and Kreuter, 2005). Discussing the key findings of this study following SEM approach provides a clearer picture of how different factors (family, community, facility and societal) interact to influence adolescent's access and use of sexual health services beyond the individual-level factors. Although, the concern is that doing

this may limit the clarity of the sequential mixed method design used in this study to show how the qualitative data support the quantitative findings. However, an effort was made in the discussion of each of the levels to show how the findings reflect the sequential mixed methods design used.

The data used for chapters 4 and 5 were from the Nigeria Demographic and Health Survey (NDHS), while chapters 6 and 7 used primary data (in-depth interviews and Focus Group Discussions - FGDs) collected from service providers and adolescents in Nigeria respectively. Multilevel logistic regression was used to examine the determinants of comprehensive knowledge of HIV (CKH) and contraceptive use. The qualitative strand followed a thematic analysis process guided by the Gioia framework to ensure the reliability and transparency of the analysis process (Gioia et al., 2013). This study triangulates evidence from different sources (quantitative and qualitative data) to explore the challenges that adolescents in Nigeria face in accessing and utilising SRH services following the Social Ecological Model (SEM).

## 8.2 Summary of the key findings

### 8.2.1 Quantitative

Chapter four examined the trends and determinants of comprehensive knowledge of HIV (CKH) among adolescents in Nigeria. Comprehensive knowledge of HIV is an interesting SRH indicator to provide an overview of SRH situations in Nigeria. The study found that only 32.1% of unmarried adolescents had comprehensive knowledge of HIV/AIDS in Nigeria. Comprehensive knowledge of HIV improved from 2003 to 2008 but stalled in 2013. Overall, the boys had more comprehensive knowledge of HIV than the girls. At the individual and family level, gender, age, ethnicity, education, religion, employment, ever been tested for HIV, contraceptive knowledge, wealth index, and age of household head were significantly associated with comprehensive knowledge of HIV. At the contextual level, community level unemployment, media exposure in the state, and educational level in the state and region were significantly associated with comprehensive knowledge of HIV/AIDS among unmarried adolescents in Nigeria.

Similarly, chapter five investigated the trends and determinants of contraceptive use among adolescents. The results showed that only 7.6% of all unmarried adolescents in Nigeria were using contraceptives; more by females than males and 40.2% among sexually active unmarried

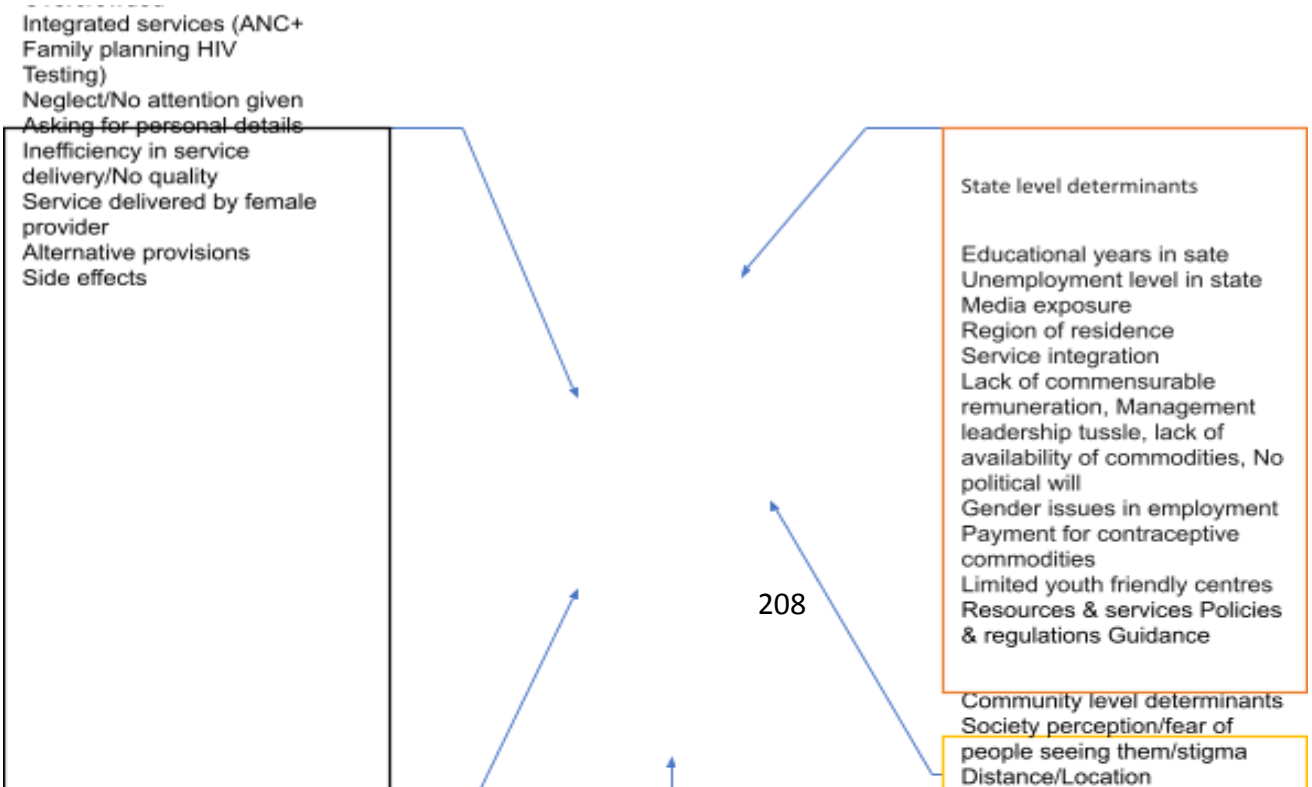
adolescents. The use of contraception decreased from 2003 to 2013 except for female adolescents in 2008. Contraceptive use was high among adolescents who live in the southern than in the northern part of Nigeria. Private facilities and local pharmacy shops were the preferred sources of contraceptives. At the individual and family level, gender, age, ethnicity, education, employment, ever been tested for HIV, comprehensive knowledge of HIV and age of household head were significantly associated with contraceptive use. At the community and state level, the educational years in the state and region were significantly associated with contraceptive use.

### 8.2.2 Qualitative

Chapter six explored service providers' views and perceptions of adolescents' access and use of SRH services in Nigeria. The results showed that adolescents were not engaging/patronising the SRH services, and have poor health-seeking behaviour. The girls were more likely to attend clinics than boys. Married adolescents access clinics more than their unmarried counterparts and those who were 10-14 years of age were less likely to access SRH services. Participants in this study identified cost, lack of knowledge of available services, distance to facilities, culture, service providers' negative attitudes and confidentiality as the key barriers to adolescent access and use of sexual and reproductive health services. Creating awareness and attaching incentives were identified as important facilitators to service use. Some of the service providers did not see youth-friendly services as a worthwhile activity and were reluctant to promote them. A significant number of service providers in this study were not in support of young people's SRH services use and were unwilling to provide SRH services to young people.

The findings showed that young people faced discouragement, embarrassment, and open rebuke at the hands of providers. Service providers put fear into them by scolding them as a mechanism to deter them from accessing services. They believed that exposing young people to comprehensive sex education would make them engage in early sex and become promiscuous. This was primarily influenced by their belief system and cultural values. Preferred sources of SRH information and services were patent medicine vendors and pharmacy/local shops, and the reasons were because of fear of HIV screening, fear of relatives seeing them and lack of confidentiality in the PHC facilities.

Chapter seven revealed the views and perceptions of adolescents' access and use of SRH services in Nigeria. The results showed that adolescent girls were more worried about unwanted pregnancy, rape, and sexual harassment while the boys were more concerned about STI/HIV/AIDS, masturbation and early sex. The study found that adolescent boys were unwilling to use a condom while the girls were unwilling to use family planning as they believe it would damage their womb and prevent them from subsequent pregnancy. This was more common among the out-of-school girls. Adolescents' experience of accessing and use of services was not pleasant as many adolescents were being embarrassed, rebuked and treated unfairly by services providers. Most providers threatened to report them to their parents when they visited the clinic. Barriers to accessing services include being shy, lack of confidence, societal perception, lack of privacy and confidentiality. Enablers of service use identified by participants include having a separate consulting room, more confidentiality and friendlier attitudes from providers. Participants preferred services from online sources and private providers because of the level of privacy and confidentiality it offers.



### 8.2.3 The difference in views of service providers and adolescents on use of SRH services

This section examines the views of service providers together with the opinions of adolescents to explore the differences that exist amongst adolescents and service providers with regards to adolescents' use of SRH services. Table 8.1 shows contrasting perceptions between adolescents and service providers in many aspects of SRH health. While adolescent boys reported masturbation, seduction from girls, early sex, rape, and incest as some of their concerns, service providers reported itching in the genital area, rashes, penile discharge and psychological problems to be boys' SRH concerns. Also, while adolescent girls reported sexual abuse, harassment, early marriage, abortion, incest, and virginal fistula as their concerns, providers reported rashes, itching, discharge, menstrual cramps, hepatitis, and irregular menstrual circle as girls' concerns.

Adolescents acknowledged feeling being ashamed, afraid of meeting someone they know at the clinic, fearing social perception and living in the same community with providers, service providers' attitudes and neglect as the most significant barriers to accessing and utilising SRH services. In contrast, service providers recognised cost, being afraid of HIV testing, distance, and confidentiality as significant barriers for adolescents. Furthermore, adolescents linked enablers of SRH service use to more privacy, confidentiality, and a provider's friendly attitude, while providers identified more awareness of SRH services, giving more incentives and empowerment programmes for young people as important enablers to service use. It is surprising to note here that service providers did not recognise their attitude to be a potential barrier to an adolescent's use of services, but rather acknowledged the demand-side barriers as the major hindrance to an adolescent's use of services. However, while adolescents themselves see supply-side barriers to be more predominant and have more impact in their use of services.

Adolescents recognised friends and media as their most preferred sources of SRH information while providers see parents, family members, and internet as adolescents most preferred sources for SRH information. Young people identified privacy and confidentiality among providers as their main reason for accessing services from these sources while on the contrary, providers see the fear of HIV screening, fear of relatives seeing them as young people's reasons for engaging in these sources.

These conflicting views of users and healthcare providers have serious policy and practice implication in meeting the needs of adolescents. These discordant views if not tackled will continue to impact on service delivery and make the government plans to integrate adolescent and youth-friendly Sexual health services into the Primary Healthcare Facilities (PHC) in Nigeria an exercise in futility. Although, integrated sexual health service is an effective model (Waddington and Egger, 2008; Silumbwe et al., 2018), and promising initiative that requires providing non-judgmental and confidential services, where most SRH services can be met at one site. However, the contradiction in views of service users and providers will hamper the positive outcomes of this initiative and will limit the National Reproductive Health Policy goal of increasing access for SRH services for young people by 50% in 2021 in Nigeria. This indicates the needs to train service providers to be more responsive to adolescent's SRH needs.

Table 8.1: Difference in views of service providers and adolescents on use of SRH services

| SRH characteristics | Adolescents | Service providers |
|---|---|---|
| **Sexual health concerns** | **Boys:** Masturbation, seduction from girls, early sex, rape, incest, drugs, low self-esteem, and lack of confidence<br><br>**Girls:** Sexual abuse and harassment, early marriage, abortion, incest, virginal fistula, prostitution, bullying, pelvic inflammation | **Boys:** Itching in the genital area, rashes, penile discharge, psychological problems<br><br>**Girls:** Rashes, itching, discharge, mensural cramps, Hepatitis, irregular mensural circle |
| **Barriers to service use** | **Individual factors:** Ashamed/shy and afraid of service providers<br><br>**Community factors:** Social perception and living in the same community with providers<br><br>**Institutional factors**: Service providers attitude and neglect/do not give them attention | **Individual factors:** Cost and Afraid of HIV testing<br><br>**Community factors:** Distance/ location and culture<br><br>**Institutional factors:** Confidentiality and No privacy |
| **Enablers of service use** | More privacy (private consulting room), confidentiality and providers not to be rude | Creating awareness of SRH services, giving more incentives and empowerment programme for young people |
| **Prefer sources for sexual health information** | Friends and media | Parents/family members and internet |
| **Reasons for choice of private clinic/online platform** | Privacy and confidentiality among providers and no face to face contact in online platforms. | Fear of HIV screening, fear of relatives seeing them and want it secretly |
| **Experience in service use** | Do not feel comfortable accessing services due to lack of boldness to talk | Young people are not open, very shy and come with different excuses |

| | | |
|---|---|---|
| | to providers, no conducive environment and lack of privacy | |

## 8.3 Discussion of the key findings

This thesis, using sequential mixed-methods design examines the determinants of adolescents' access and utilisation of Sexual and Reproductive Health (SRH) services in Nigeria. Both the quantitative and qualitative strands of the study provide evidence to support the hypothesis that the factors that influence adolescent access and SRH service use in Nigeria are multifaceted and interrelated (Green and Kreuter, 2005). Contraceptives use and comprehensive Knowledge of HIV are both global health indicators (WHO, 2006) used in this study to assess progress and monitor the level of access and use of SRH services in Nigeria. Data on these indicators are nationally representative, which can give a useful indication of adolescents SRH issues and concerns in Nigeria. The choice of these key SRH indicators was based on their impact on overall health outcomes among adolescents. For example, comprehensive knowledge of HIV is one of the preventive strategies to mitigate the spread of HIV/AIDS due to its potency in reducing the risk of HIV transmission and behavioural change modification. Also, correct use contraceptives especially the modern contraceptives like condom could avert unwanted pregnancy, HIV transmission and unsafe abortion among adolescents (Solomon-Fears, 2015), lowering the risk of maternal, infant, and child mortality (Lule, et al. 2007). The findings of these outcomes were supplemented with qualitative data that provided further explanation to better understand the context and some of the reasons for the observed patterns and behaviour in the use of these services. It also provided further insights on some of the facility-level factors that influence adolescents use of services that were not captured in the quantitative results, thereby filling an important gap. Besides, it also provided data on the views of adolescents and service providers on key markers of access and use of SRH services, which helped to unpack some of the service needs of adolescents and underlining perceptions of service providers in meeting these needs.

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interrelated (Green and Kreuter, 2005). Contraceptives use and comprehensive Knowledge of HIV are both global health indicators (WHO, 2006) used in this study to assess progress and monitor the level of access and use of SRH services in Nigeria. Data on these indicators are nationally representative, which can give a useful indication on adolescents SRH issues and concerns in Nigeria. The choice of these key SRH indicators was based on their impact on overall health outcomes among adolescents. For example, comprehensive knowledge of HIV is one of the preventive strategies to mitigate the spread of HIV/AIDS due to its potency in reducing the risk of HIV transmission and behavioural change modification. Also, correct use contraceptives especially the modern contraceptives like condom could avert unwanted pregnancy, HIV transmission and unsafe abortion among adolescents (Solomon-Fears, 2015), lowering the risk of maternal, infant, and child mortality (Lule, et al. 2007). The findings of these outcomes were supplemented with qualitative data that provided further explanation to better understand the context and some of the reasons for the observed patterns and behaviour in the use of these services. It also provided further insights on some of the facility-level factors that influence adolescents use of services that were not captured in the quantitative results, thereby filling an important gap. Besides, it also provided data on the views of adolescents and service providers on key markers of access and use of SRH services, which helped to unpack some of the service needs of adolescents and underlining perceptions of service providers in meeting these needs.

Overall, the multilevel results in the empty model (No variable added) that examines the random variable and intercept showed an intra-cluster correlation coefficient (ICC) of 23.2% for community and 12.8% for the state. This implies that as much as 23.2% of the variations observed in having comprehensive knowledge of HIV could be explained by community-level factors, while state-level factors could explain 12.8% of the variations observed. Similarly, concerning contraceptive use, the results showed an intra-cluster correlation coefficient (ICC) of 35.7% for community and 31.6% for the state. This also implies that community-level factors could explain 35.7% of the variations observed in contraceptive use while state-level factors could explain 31.6% of the variations observed.

These results support the theoretical framework adopted for this study, which argued that the factors that influence adolescents' SRH use are multi-layered and go beyond the individual level factors (USAID, 2015; Glanz et al., 2002). The state-level effect seems to impact on both

comprehensive knowledge of HIV and contraceptive use more than the community-level effect as the ICC significantly reduced when the state-level variables were introduced to the model; especially for the contraceptive use. This implies that as the factors that influence adolescents' use of SRH services are multi-layered, the interventions to address these challenges should be multifaceted as well without neglecting the individual-level factors (Glanz et al., 2002).

### 8.3.1 Adolescents' sexual and reproductive health service use: Individual-level determinants

According to SEM, individual level characteristics influence an individual's use of SRH services. Overall, the results of this study showed that individual-level factors (gender, age, ethnicity, religion, education, employment, ever tested for HIV and contraceptive knowledge) affected adolescents' access and use of SRH information and services. Among the individual level factors, gender is an important factor in adolescents' SRH services use. Generally, the result showed that adolescent girls were more likely to use contraceptives than the boys. These findings were supported by the qualitative results, which showed that the boys do not like using contraceptives (condom), especially the out-of-school boys. Adolescents during the interview gave the reasons to be because young boys do not place value on condoms and have low-risk perceptions of infection. This implies that interventions to increase adolescents' use of contraception should prioritise the boys and improve self-efficacy among adolescents. Previous studies in Botswana (Ngome et al. 2012), Ghana (Adih et al. 1999) and Cameroun (Meekers and Klein, 2002) have reported the low-risk perception of infection to be associated with an adolescent's non-use of SRH service, like contraceptives. The effect of gender on the use of contraceptives has been reported in other studies (Chimbindi *et al.,* 2010; Hargreaves et al. 2010; Oginni *et al.,* 2015).

On the contrary, the results showed that adolescent girls were less likely to have comprehensive knowledge of HIV than boys. This is not surprising as the national level intervention to increase CKH is school-based. Due to the socio-economic and cultural and personal circumstances, girls less likely to be in school in Nigeria. This implies that any school-based interventions will disadvantage the girls than the boys. This may suggest that interventions to upsurge CKH should target the girls without leaving the boys behind especially the out of school girls. Low CKH among the girls could be a pointer to the need to scale up sex education to both in-school and out-of-school girls as this programme improves adolescents' SRH outcomes (Kirby et al., 2007; Johnson et al 2008). These

findings are consistent with the results of other international studies (Oginni et al., 2017; Gupta and Miltra *et al.,* 1999; Oljira *et al.,* 2013; Yadav *et al.,* 2015).

Also, the result showed that age is an important determinant of sexual health service use. Older adolescents (18-19) had a higher tendency of having CKH and using contraceptives than the younger ones. The majority of the service providers who were interviewed in this study believe that this was because younger adolescents lack confidence, were not knowledgeable about available services and felt that they were too young to access services. While younger adolescents themselves in FGDs reported that they do not access services because they were afraid of the service provider's ill-treatment and embarrassment. The qualitative results showed that service providers were harsh and rude to adolescents, especially the younger ones. As a result, the majority would not want to go to these health facilities. Other possible explanations could be that younger adolescents get limited exposure to sexually related issues and suffer from immaturity, which contributes to their vulnerability due to having little knowledge of HIV/AIDS (Santhya and Jejeebhov, 2007; Sheikh et al. 2017). These findings are in agreement with other studies in the USA (Hall et al. 2012), South Africa (Chaminda et al. 2010), Kenya (Obare et al. 2013). Also, the effect of age on comprehensive knowledge of HIV is consistent with other international studies (Megabiaw and Awoke, 2013; Teshome and Youjie 2016), except (Gupta and Miltra, 1999).

Adolescents' ethnic background was identified as influencing their SRH service use. Adolescents who were of Yoruba origin in the south had a higher tendency of using contraceptives than those from the Hausa ethnic group in the north. This concurs with the qualitative results in this study that found that Hausa boys and girls do not like using contraceptives as they prefer skin-to-skin. While the boys do not value condoms, the girls believe that using contraceptives would damage their womb and affect their future conception. Also, as mentioned in chapter seven, this ethnic group (Hausas) is socio-economically deprived as compared to other ethnic groups. However, there is no significant difference in contraceptive use among the Hausas in the north and the Igbos in the east (before controlling for education and wealth). This is surprising as national indices show that Igbos are more educated and socio-economically stable. This may suggest that adolescent use of contraception goes beyond socio-economic factors to encompass other cultural, institutional and structural factors that influence contraceptive use (UNFPA, 2015; Kennedy et al. 2013; Johnston et al. 2015; Matich *et al.,* 2015). Evidence has shown that even when contraceptives is accessible,

adolescents may be reluctant to admit that they are sexually active or simply be embarrassed to ask for contraception due to the stigma around stigma surrounding non-marital sexual activity (Cahndra-Mouli, 2014).

Education is a key determinant of both contraceptive use and comprehensive knowledge of HIV. Results showed that contraceptive use and CKH increase with an increase in education. This shows the need to intensify efforts in expanding access to quality education among young people in Nigeria in order to reduce the number of out-of-school children. This was observed during the FGDs, out of school adolescents tends to have less knowledge of the sources contraceptives and expresses more concerns about providers' attitudes in accessing care. Other studies on contraceptive use (Amsalu-Felekeet et al 2013; Bankole et al 2015; Hall et al 2012; Kama et al 2012; Oginni et al 2015) and on CKH (Gebregergish, 2015; Khanal, 2013; Teshome, 2016; Oljira et al 2013; Zainiddinov and Habibov, 2016 and Ochako et al 2011) have reported similar associations. These studies argue that the increase in educational level increases an adolescent's use of both contraception and comprehensive knowledge of HIV.

The effect of education is mirrored in the results of employment and CKH such that adolescents who are employed were less likely to have comprehensive knowledge of HIV than those unemployed. This is arguably because in Nigeria, adolescents aged 15-19 are likely to be in full-time education (secondary school) and therefore are less likely to be in employment. Being in school provides them with ample opportunity to be exposed to sex education (Family Life HIV Education) unlike those who are employed and are therefore out-of-school. This shows the essential role that education plays in comprehensive knowledge of HIV suggesting that any intervention to improve adolescents' use of SRH services must leverage education, not just for adolescents but also for individuals who live in the same states where these young people live, as evidence in this study has shown that state educational level influences the adolescent use of SRH services.

On the contrary, those employed were more likely to use contraceptives than the unemployed. This is likely because those in employment have more financial freedom and can afford to seek service from private providers, unlike the unemployed who are in full-time education and depend on their parents for support, which they do not usually get. The results of the qualitative strands showed that adolescents preferred seeking SRH services from private providers to public ones due

to confidentiality reasons. This shows the need to ensure service providers in public clinics are more responsive to adolescents' sexual health needs. This would help those in-school adolescents, who have limited financial resources to afford private facilities so that they can access public facilities conveniently.

### 8.3.2 Adolescent's sexual and reproductive health service use: family level determinants

Family level factors have been identified in some studies to influence SRH service use among adolescents (Celik and Esin, 2012; Chimbindi et al. 2010; Oginni et al. 2015: Gebregergish, 2015; Khanal; 2013; Teshome et al. 2016; Oljira et al. 2013). The results of this study showed that the wealth index and age of the household head were significantly associated with CKH. Adolescents who live in a household headed by adults were less likely to have CKH than those in a youth headed household. Previous studies have identified that household level associated factors influence the use of SRH services (Ngugi et al., 2017).

With regards to contraceptive use, the age of household head was found to be significantly associated with contraceptive use. Adolescents were more likely to use contraception if they live in a youth headed household than in an adult headed household. Household head was an important family level determinant to both contraceptive use and comprehensive knowledge of HIV among adolescents. Adolescents in youth headed households are possibly the head in these households, and as a result, have more autonomy and freedom as they do not need to take permission from any adult before accessing any services. Mardi *et al.* (2018) in a qualitative study among teen women in Iran found that lack of autonomy influences a teenager's contraceptive use. This is similar to a study in Nigeria which found a positive association between female autonomy and use of contraceptive services (Ejembi et al 2015).

Adolescents from the richest wealth index families were almost three times as likely to have CKH compared to those from the poorest wealth index families. The results of our study are consistent with previous studies in Nigeria (Oginni *et al.* 2017), Ethiopia (Oljira, 2013), Uganda (Ankunda and Asiimwe, 2017), Bangladesh (Sheikh et al., 2017), Kenya, Burundi and Ethiopia (Teshome et al., 2013), except Ghana (Fenny *et al*., 2017). Oginni et al (2017) in a quantitative study among adolescents and young adults aged 15-24 in Nigeria found that an increase in the level of wealth index increases the odds of having comprehensive knowledge of HIV. Wealth index was surprisingly

not significantly associated with contraceptive use. This is surprising as one would expect that adolescents in the richer households are more likely to be exposed to sexual health information and services and could, therefore, afford contraceptives and consumables from private and public providers. This is contrary to the findings of other studies (Oginni et al. 2015; Celik and Esin, 2012; Chimbindi, et al 2010; Kamal 2012). Although the samples age group of participants differ in both studies. These findings perhaps may suggest that adolescents' use of contraceptives goes beyond the wealth index factor to other community, facility and societal level factors reported in this thesis.

The qualitative part of this study provides a better explanation for some of the family level factors that influence adolescents' contraceptive use. For example, adolescents did not want their parents to be involved in their use of SRH services. This was one of the reasons why they were not pleased with the service providers who threatened to inform their parents if they visit the clinic. Seeking parental consent and fear of their parents seeing them were some of the common barriers reported as to why they do not access services. This could possibly explain why adolescents in youth headed household were better off.

This shows that any intervention to improve adolescents' use of SRH services should ensure autonomy in the use of services while being devoid of any parental involvement where possible. Also, programmes to increase comprehensive knowledge of HIV and contraception should integrate family-based interventions for both in-school and out-of-school adolescents. Interventions that would involve developing a supplementary online platform for SRH information to young people should be encouraged as this would benefit those who are unable to visit clinics due to family restrictions that would prevent access to SRH information and parents should be engaged too.

### 8.3.3 Adolescents' sexual and reproductive health service use: community level determinants.

A significant gain in expanding access and use of SRH among adolescents could be made by looking into the context in which individuals live that influences their attitudes in terms of use of SRH services. In this study, community-level factors that oppose adolescents' access to SRH services were identified. Unemployment at the community level was the only community-level variable

that was significantly associated with comprehensive knowledge of HIV. Adolescents who live in communities with a high proportion of the population that were unemployed were more likely to have CKH. This finding as discussed in chapter four could be because regions with high unemployment rates are associated with a high poverty rate. In recent times, most programmes that aim to increase CKH among adolescents have focused on deprived areas with little or no attention given to affluent regions. These findings revealed the spatial nature and the focus of donor agencies in the delivery of SRH services in Nigeria.

This was better explained by one of the youth-friendly service providers during in-depth interviews in Nigeria. This male provider noted that Adolescents' Sexual and Reproductive Health (ASRH) programmes/interventions in Nigeria were not systematically delivered. Rather, they were delivered in patches based on the areas that the donor agencies and NGOs felt required attention and where they could justify their work/funding. He noted that most NGOs, after few years of operation in one location, move to another local without putting a mechanism in place to sustain their achievements. Some years after they had left, the previous area in which they worked became worse in terms of SRH health outcomes. Given that previous gains were not consolidated, he recommended a more systematic approach in the delivery of SRH services in Nigeria.

Surprisingly, while the unemployment level in the community was significantly associated with having comprehensive knowledge of HIV, it was not significantly correlated with an adolescent's use of contraception. However, this finding is consistent with previous studies in Nigeria among women reproductive age (Ejembi et al., 2015) and Mali (Kaggwa, 2008). These studies found that the unemployment rate in the community and the poverty level in the community were not significantly associated with contraceptive use (Ejembi et al., 2015). This may suggest that programmes and interventions to address adolescents' use of contraceptives in Nigeria need go extend beyond the community level variables considered in this study.

The Intra Class Correlation (ICC) showed that 19.4% of the total unexplained variation in the odds of having comprehensive knowledge of HIV was attributable to unobserved community-level factors. Similarly, the ICC shows that 9.7% of the total unexplained variation in the odds of contraceptive use was attributable to unobserved community-level factors. These unobservable variations in the community could be due to some of the factors captured in the qualitative results that influence adolescents' use of services. For instance, adolescents during the interview reported

influential factors such as societal/community perception, living in the same community with service providers, peer pressure, and cultural belief in the community as barriers to access and use of SRH services. Service providers during the in-depth interviews noted that culture in the community, living in the same community with service providers and stigma in the community were key hindrances to young people's access and use of services. These findings correlate with the result of other studies in Australia (Johnston et al. 2013) and India (Nair et al., 2013). Therefore, community-level programmes should be advocated to enhance the use of SRH services. This is because community-based programming was seen to be effective in a systematic review conducted in low- and mid-income countries to enhance adolescents' uptake of SRH services (Singh et al., 2018).

### 8.3.4 Adolescents' sexual and reproductive health service use: state-level determinants

State-level effect was another contextual level factor examined in this study. The results showed that region, media exposure and educational years in the state, were significantly associated with CKH. Adolescents who live in states with a higher level of media exposure were 38% less likely to have CKH than those who live in state with less media exposure. Similarly, living in states with a higher proportion of individuals who have attained a higher level of education was positively correlated with having comprehensive knowledge of HIV and using contraceptives. These findings align with findings of other studies (Khanal, 2013; Teshome, 2016; Oljira et al., 2013; Zainiddinov and Habibov, 2016; Ochako, et al., 2011) which show that comprehensive knowledge of HIV increases with increase in the level of education. This perhaps could be because adolescents who live in these states could potentially be influenced positively by educated adults. For example, individuals with more educational years in state are more likely to have a good job and live in affluent areas in the state. Adolescents who live in these states are better exposed and more likely to have reasonable level of education, which shapes their risk perception. This in turn influences their Knowledge of HIV and contraceptive use. The significant effect of education years in the state for both CKH and contraceptive use show that education is a critical component in accelerating adolescents' access to SRH services. There is no doubt that education was identified as the second component in the WHO framework for designing SRH health programmes (WHO, 2010).

Therefore, interventions to expand adolescents' access to SRH services in Nigeria should incorporate educational components. There is a need for collaborative action between the

Ministry of Health and Education to champion a viable national educational policy across the states to improve educational attainment; especially in the northern regions of the country, ensuring that no child is left behind. The intra-state correlation shows that 6.4% of the total unexplained variation in the odds of having comprehensive knowledge of HIV and 4.4% of the total unexplained variation in the odds of using a contraceptive was attributable to unobserved state-level factors. These unobserved state-level factors could be linked to some of the factors identified in the qualitative component of this study. For instance, adolescents were asked about some of the barriers to access and use of services. The majority of adolescents reported a lack of quality services, inefficiency, services not readily available and cost associated with some of the consumables and services. The findings reported align with the results of a qualitative study in Nepal that assess barriers to adolescent use of SRH services. Adolescents in this study reported insufficient commodities, poor quality care and cost as major hindrances to their use of services (UNFPA_Nepal, 2015).

At the state level, some of the service providers during the in-depth interview reported a lack of support from the government, integrated services i.e. (ANC + Family planning and HIV testing), lack of commensurable remuneration, management leadership conflicts, and lack of availability of commodities were some of the challenges they face when delivering SRH services to adolescents. They argued that this hinders them from providing quality SRH services. Service providers also reported a lack of political will, demonstrating that the government is not fully involved in the delivery of youth-friendly services in Nigeria. Responsibility for this tends to be left to the NGOs, which makes it difficult to sustain the youth-friendly services (YFS) as most NGOs are donor dependent and may have limited funding to sustain the project. The result showed that sometimes, the government designs some of the policies and then hands the responsibility for their implementation over to the NGOs. This is arguably the reason why the programmes/interventions collapse as soon as the NGOs leave the country.

The result showed that the government has fallen short of its commitment to the Abuja declaration. In 2001, the Nigerian government together with heads of state of other African Union countries pledged to set a target of allocating at least 15% of their annual budget to improve the health sector, while the donor countries support and play a passive role. However, evidence shows that this commitment was not kept as many donor countries and NGOs continue to take the lead

in the delivery of health services, including adolescents' Sexual and reproductive health (ASRH) services (WHO, 2001). Expanding adolescents' access to SRH would require the Nigerian government to play a more active role in taking the lead, allocating funds, and monitoring and evaluating ASRH service delivery.

In addition, the policy to integrate FP services, ANC, HIV counselling and testing services in the PHC centres is a state level factor. The results of this study showed that integrating services appeared to affect adolescents' access to services negatively. Most adolescents were unwilling to access family planning (FP) due to fear of being asked to go for HIV testing or meeting or waiting in the same room with nursing mothers, although the WHO report shows that integrating FP with Maternal and Child Health (MCH) services is a more effective way to reach women who need FP (Waddington and Egger, 2008). Other studies in India (Achyut *et al.,* 2016; Toth, 2010), Zambia (Silumbwe et al., 2018) and Kenya (Population Council of Kenya, 2011) have affirmed the effectiveness of this approach among women, but no evidence has suggested its effectiveness in promoting unmarried adolescents' uptake of SRH services.

### 8.3.5 Adolescents' SRH service access and use: institutional/ structural level determinants

Institutional level factors have been identified in some studies to influence adolescents' contraceptive use (UNFPA, 2015). Unfortunately, the institutional level variables were not controlled for in the multilevel modelling, but were investigated in the qualitative study. Both adolescents and service providers linked adolescents' non-use of SRH services to factors operating at the institutional level. Adolescents in this study identified service providers' negative attitudes as the main barrier to their use of services, although most of the service providers did not see their attitudes as a hindrance to adolescents' service use. Service providers blamed non-use on adolescents' lack of knowledge, cost, and distance. Evidence from this study shows that service providers are not in support of adolescents' use of contraceptives as they believe providing contraceptives and sexual health education would encourage an early initiation of sexual activity leading to promiscuity, especially among young girls. This is largely influenced by their belief system and cultural values. This finding supports the findings of a similar study conducted in Delta State Nigeria. This study found that unfriendly attitudes of providers include keeping adolescents waiting, and that the judgmental attitudes of some providers, together with a lack of satisfactory

services, put adolescents off from accessing and using SRH services notwithstanding their demographic and socio-economic characteristics (Onokerhoraye, and Dudu., 2017).

These findings align with the results of other international studies in the Republic of Vanuatu, (Kennedy et al 2013), Australia (Johnston et al 2015; Matich et al., 2015), UK (Donovan et al., 1997), Ethiopia (Both and Samuel, 2014) and Burkina Faso, Ghana, Malawi and Uganda (Amuyunzu-Nyamongo et al., 2015). A qualitative study in Vanuatu among adolescents reported that the provider's unfriendly and judgemental attitudes were a major reason for not accessing services (Kennedy et al. 2013). Nearly all the adolescents in this study reported that having friendly service providers would enable them to use services (Amuyunzu-Nyamongo et al. 2015). In a systematic review to assess the attitude of health care providers toward adolescent SRH services in developing countries, the key findings in the review show that unprofessional attitudes of health care professionals and lack of youth-friendly reproductive health services prevent adolescents from gaining access to services in developing countries (Chilinda *et al.,* 2014). The study recommended an increase in youth-friendly services to ensure uptake of services by adolescents.

Also, service providers identified structural barriers, such as confidentiality and lack of privacy as a common barrier to adolescents' access and utilisation of SRH services. These factors were acknowledged by adolescents as the main enablers of adolescents' access and use of SRH services if put in place. The results showed that many adolescents did not want their parents to be involved or notified when they access SRH services. The issue of confidentiality transcends Nigeria to other developed countries. This is the same for adolescents in the USA who detest parental notification by providers when they use services. They indicated they would stop using SRH services if their parents were informed whenever they were seeking prescribed contraceptives (Reddy et al., 2002). These findings support the findings of other international studies that examine adolescents' perspectives on confidentiality (Brittain et al. 2015; Thrall et al. 2000; Garside et al. 2002; Thomas et al. 2006).

Brittain et al. (2015) in a systematic review that appraised studies in the U.S.A., Canada, Europe, Australia, and New Zealand on the effect of assuring confidentiality in family planning services to young people on reproductive health outcomes underscored the idea that young people greatly value confidentiality when receiving family planning services. However, the author acknowledged limitations in terms of evidence used to conclude and recommended a more robust research

agenda. In a study which explored the importance of confidentiality in the use of sexual health services in the UK, 56% of teenagers rated confidentiality as an important feature of SRH service use, and 86% reported they were more likely to use SRH services if confidentiality is assured (Thomas *et al.* 2006). In another systematic study in the UK and USA that looked at the reasons for the use and non-use of school sexual health services, this study reported that privacy and confidentiality appeared to be a greater and more complex issue for young people (Carroll et al., 2011). This evidence shows that to expand and accelerate adolescents' access to SRH services, there is a need to prioritise the privacy and confidentiality of the services delivered.

## 8.4 Theoretical inferences about the findings

This thesis focuses on the factors that influence young people's access and use of Sexual and Reproductive Health (SRH) services in Nigeria. The findings of this study could be explained through a different theoretical lens. The most relevant theories to explain different parts of this study are the Social Ecological Model (SEM) and Foucault's theory of sexuality. The findings support the SEM postulates in relation to the determinants of SRH services use and also, supports Foucault's work in the light of views and perceptions of service providers on adolescents' sexuality.

### 8.4.1 The Social Ecological Model

This study uses the Social Ecological Theory to examine the factors that influence adolescents' use of sexual and reproductive health services. This is because Social Ecological Theory can inform a robust approach to expanding adolescents' access to SRH services through a multilevel intervention (Harper et al., 2018; Glanz et al., 2002). This theory believes that behaviour change can be achieved through activities that target five hierarchical levels: individual, interpersonal/family, community, structural/ organisational and societal level (USAID, 2013). This study provides empirical evidence to support the hypothesis in this theory by showing that the factors that influence an adolescent's access and use of SRH services are multifaceted and occur at different nested hierarchical levels. The results showed that both contraceptive use and comprehensive knowledge of HIV/AIDS were influenced by factors beyond the individual level. The findings show that although individuals are responsible for taking action to reduce risk and improve their sexual health outcome, their behaviour is influenced by factors (demographic, socioeconomic and social-cultural) at a different level (Elder et al., 2007). Section 8.3 in this

chapter demonstrates clearly how the findings of this study support the assertion that factors that influence an adolescent's health occur at different levels. For example, at the individual level, this study found that adolescents' individual characteristics, such as age, gender, level of education, and employment status influence their use of contraceptive and CKH (Chimbindi *et al.,* 2010; Hargreaves et al. 2010). Also, being ashamed/shy, lack of confidence, fear of disgrace/embarrassment/scared and lack of knowledge of available services influence their use of SRH services (Chimbindi *et al.,* 2010; Hargreaves et al. 2010; Oginni *et al.,* 2015).

At the family level, the Social-Ecological Theory argues that interpersonal (family, friends, network etc.) factors influence an adolescent's use of services. The current study found that age of household head, wealth index, fear of parents/relatives from seeing them at the clinic, peer influence, parental involvement influences SRH service use. Adolescents are more likely to use contraception if they live in a youth headed household rather than living in an adult headed household. Also, the study shows that parental involvement deters adolescents from using SRH services. Similarly, at the community level, the current study found that living in the same community with service providers, unemployment level in the community, community cultural beliefs, and stigma in the community deterred adolescent boys and girls from using SRH services. Also, the study shows that institutional-level factors, such as a service provider's attitude, confidentiality, privacy, inefficiency in service delivery and integrated services influence and deter adolescents from using services.

Finally, this study recognises the impact societal level factors play in influencing adolescent use of SRH services. The study shows that educational years in the state, unemployment level in the state, media exposure in the state, a region of residence, limited youth friendly centres and lack of resources affect adolescent use of services. Other contemporary studies in Ghana (Challa et al., 2017), Nigeria (Ejembi, et al., 2015), Malawi (Gombachika, et al., 2012) on adolescent use of SRH services have acknowledged the interdependency between the individual level factors and the socioeconomic, organisational, political and environmental determinants of adolescents' use of SRH services. In a qualitative study in Malawi, Gombachika et al. (2012) found that barriers to an adolescent's use of services cut across five different hierarchical levels. Similarly, Price and Hawkins (2007) argued that the idea that adolescent SRH behaviour is highly individualistic, is flawed as adolescent sexual health behaviour is shaped by social and institutional factors.

### 8.4.2 Foucault's theory of sexuality

In addition to the above, the findings of this study provide substantial evidence to support Foucault's theory of sexuality. Foucault is possibly one of the most famous theorists who has applied social constructionist ideas as opposed to the essentialist ideas applied to sexuality (Foucault, 1978). The latter (essentialist theory) sees biological factors as being responsible for human behaviour in relation to sex and sexual health behaviour. It negates the roles the environment, norms and culture play in shaping sexual behaviour (DeLamater and Hyde, 1998). While the former (Social constructionist theory) postulates that sexuality is not merely a biological drive but a social construct. It emphasises social and cultural influences as a decisive factor in explaining human sexual behaviour (Foucault, 1978; 1983).

Foucault focuses his argument on the aspect of punitive control that relates to the regulation of sexual activities. Foucault claimed that since the 18$^{th}$ century, four main mechanisms (strategies) have been used to control and influence the construct of sexuality. These strategies, he argued, were hysterisation of women's bodies, pedagogisation of child sex, socialization of creative behaviour and the psychiatrization of perverse pleasure (Foucault, 1978: 201). While it seems that these mechanisms in many ways sought to repress sexuality, Foucault argued that these strategies are what produces sexuality (Foucault, 1983).

The hysterisation of women's bodies is an approach that chastises femininity by constructing women as saturated with sexuality needing to be controlled. This theory significantly has influenced how adolescent girls are viewed as highly sexual elements, and possibly influences how they are treated in clinics by healthcare providers. The findings in this study show some level of gender disparity on how the girls were generally perceived, even in the clinic by providers and the wider community. Adolescent girls were seen to be the ones to be controlled and monitored even in school and within the family. The majority of service providers in this study see sexual health challenges as more prevalent among girls than among boys and therefore expect the girls to visit the health facility more. Adolescents in the FGDs reported that the boys are always given leeway in matters of SRH issues while the girls are always blamed for everything. For example, the girls reported bearing the brunt of the blame by the teachers, parents and service providers in the case of rape while the boys are always exonerated and not questioned for wrongdoings. They argued that this was because of a long traditionally held belief that the girls are always the cause of rape

and that boys will always be boys mentality. These remarks by providers and adolescents show the way that girls' bodies are viewed and perceived, which supports Foucault's argument that society sees the girl's body as a machine governed by hormones and cycles. Foucault's assertion here is supported by Sherfey (1966) who argued that the sex drive of girls is more natural and innate than that of boys and alleged that it is necessary for a girl's sexuality to be suppressed for a civilised society to develop. Baumeister and Twenge (2002) in a more recent study noted that the double standard of sexual morality had condemned certain sexual activities by women while allowing similar action by boys.

Foucault's second theoretical construct, "the pedagogisation of child sex", sees children as potential sexual beings, and something that is dangerous and that needs to be controlled by adults. The sexuality of young people was thus considered as dangerous to society if not well controlled by adults and professionals. The approach, he argued, institutionalises and validates the strategies through which parents, service providers and wider society repressed children's sexuality (Cavallario, 2001). The findings of this study show that some of the service providers were not in support of sex education, offering contraceptives and exposure of adolescents to SRH information as they feared it would increase their sexual urge, thereby making them promiscuous and engage in early sex. As Foucault argued, this sexual urge of adolescents is seen to be a dangerous force that had to be recognised by parents, family and sexual health professionals to avoid any damaging behaviour that would be contrary to society (Foucault, 1978: 201). In a report commissioned by the Federal Centre for Health education, about 20 out of 25 countries assessed in this report in Europe and central Asia, reported a strong opposition to sex education as they dreaded that it would precipitate an early onset of sexual activity (Ketting and Ivanona, 2018) even though recent evidence has debunked this assumption (Kirby et al. 2007; Underhill et al., 2007; Mavedzenge and Doyle, 2011; Johnson et al. 2008).

Service providers' attitude towards adolescents' use of SRH services in this study was arguably guided by the perception that young people should not be exposed to sexual health information as they believe that sexual health issues should be kept secret and controlled. It is considered as a dangerous force that must be controlled by service providers and society in order to avoid any detrimental behaviour that would be contrary to adolescents lives. This could be the reason why providers in public and private clinics in Uganda were requesting parental permission before

offering contraception (Nalwadda et al., 2011). Foucault's "pedagogisation of child sex" theory could further explain the reasons why some of the service providers interviewed in this study did not see the youth-friendly services as a worthwhile activity. The service providers had some reservations about it and did not see the need to promote youth-friendly services as they believed adolescents are sexual creatures, as Foucault maintained, that need to be monitored and controlled. Foucault also argued that there is an indisputable power dynamic related to knowledge and that people influencing knowledge had a great deal of power (Foucault 1983). Foucault argued that the type of things people say is a mechanism of power that tries to influence the behaviour of young people (Foucault, 1978: 292-295). These study findings validate Foucault's assertion here as some of the service providers used their professional knowledge to influence adolescents by putting fear into them, consequently discouraging them from using services, in addition to the use of religious texts as a mechanism to control and to persuade young people not to access contraceptives. Service providers were unwilling and in total control of the sexual health information available to young people in Nigeria. For example, one of the service providers (Babala) reported how she refused to offer contraceptive implants to a young lady that visited the clinic because she was worried it would make her promiscuous. This could further explain why adolescents in the northern part of Africa, especially the unmarried ones, are routinely excluded from the decision-making process, as well as excluded from taking part in surveys on fertility and contraceptives due to the assumption that they are sexually immature, and should not be exposed to these influences. Their sexuality was seen as a destructive force that could have both moral and psychological impacts on them (LIoyd, 2005 and Utomo and McDonald, 2009).

Foucault also argued that due to the perceived moral and physical dangers of sexual activity, children's sexuality became a social and medical concern (The pedagogisation of child sex). It was reported in this study that due to the perceived moral and cultural concerns among service providers, parents, teachers and community leaders, the Family Life HIV Education (FLHE) that was introduced in 2003 to educate in-school children and adolescents on the issues of SRH did not see the light of the day in many states in Nigeria. This was more apparent in the Muslim dominated regions because the stakeholders did not see the added benefit of the programme (Esiet, 2010). Some of the service providers in this study who were part of the FLHE implementation programme reported that the majority of the teachers refused to teach the FLHE curriculum as they perceived it was morally wrong to expose adolescents to sexual health education. This moral assumption by

some key stakeholders affected the life span of the project. Also, some of the service providers refused to offer contraceptives to adolescents. For example, one of the youth-friendly service providers reported having issues offering sexual health counselling to young people in the youth-friendly centres due to her upbringing, moral values and perceived danger that exposing children to sexual health information, as Foucault noted, would be catastrophic.

Foucault's third theoretical construct, 'The 'Socialisation of Procreative Behaviour' sees reproduction as a significant thing to society and therefore sees non-procreative sex as non-productive. Foucault argued in this theoretical construct that sexuality is repressed because of economic reasons (Foucault, 1978). This construct came into operation to encourage parents to produce children in an appropriate situation. It was arguably part of this theoretical construct that is believed to have given rise to modern-day population control and teenage pregnancy, as children born by poor mothers are seen as a burden to society and therefore should be supressed. Service providers in this study may have been influenced by this assumption as the majority were not willing to encourage adolescents to access sexual health services as they believe it will expose them to early sex and probably lead to teenage pregnancy which may be a burden to the society. Finally, this study supports the Foucault 'Psychiatrilization of Sex Theory'. This theory postulates that any sexual practices that do not result in conception is pathological and abnormal. In this construct, different sexualities were medicalised and psychiatrised. These findings provide evidence to support this theoretical construct. Despite following an inductive process in this study, both the service providers in the interview and adolescents during FGDs did not mention the sexual health needs of non-heterosexual young people and their use of services. This is because homosexuality is generally viewed as unacceptable and a taboo in Nigeria. Anybody engaging in such is seen to be mentally ill and is a criminal / imprisonable offence; hence the reason it did not come up in this study. Participants in this study believe that sexual health needs of non-heterosexual young people do not warrant any attention and as such, they could be chastised for talking about this due to the provision in the same-sex marriage prohibition act, which imposes life imprisonment for some types of homosexual acts.

## 8.5 Reflexivity

This thesis would not be complete without critiquing the researcher's relationship with the research context, the research participants and the data collected. According to Payne and Payne

(2004: 191), reflexivity is defined as "the practice of researcher's being self-aware of their own beliefs, value, attitudes and personal effect on the group they have studied and being self-critical about the research methods and how they have been used so that the understanding of the research findings will be enhanced". The term reflexivity is operationalised when researchers can coherently remember their awareness of the interconnectivity between and among themselves, the participants, the data and method they used to interpret and represent their findings (Mills et al., 2010). Hibbert et al., (2010) argues that reflexivity involves exposing the researcher's ways of doing and carrying out research. As a part of demonstrating rigour and trustworthiness in this current study, this section scrutinises the the choice of methodology and data used, the role of the researcher and positionality in the study (Hardy et al., 2001; Cunliffe, 2011), and explains how the researcher's beliefs, values and attitudes influence the study (Payne and Payne, 2004).

### 8.5.1 Methodology and choice of data used

Haynes (2012) advises that researchers should be self-conscious of how their ontological, social and political position affect their choices of research method and approaches. Gill and Johnson, (2010: 6) acknowledge that the research methods used by researchers are not a-neutral tool but have some philosophical underpinnings. My research philosophy and epistemological position when it comes to the methodology did not change from what was initially planned. However, the type of data used for the quantitative strand of the study changed from collecting primary data to using secondary data. After my first meeting with my supervisors, I realised that I could access the Nigeria Demographic and Health Survey (NDHS) Data, which was secondary data collected from across the 36 states in Nigeria that covers the population of interest. The use of the secondary data (NDHS) widened the scope of the study and made it more representative of the general population, unlike collecting primary data that would have collected data from a section of the population in one or two states in Nigeria. This shift in the choice of data used positively impacted the findings of this study by shaping the outcome of the study and making the result valid and reliable (Hardy et al., 2001).

In addition, at the design stage of the study, I was worried that many female service providers would not sign up for the study and that most parents would not allow their children to participate due to the perceived sensitivity of the topic under study as many people do not feel comfortable discussing sexual health issues with their children. This made me read up widely on how to

conduct a focus group discussion (FGDs) and an in-depth interview on sensitive culturally-restricted topics like adolescent sexual health. I registered for two modules on qualitative research which was helpful for strengthening my qualitative research skills. I also recruited a female research assistant to support the FGDs. The use of a female research assistant was helpful to create a gender balance and calm the tension of having only me in the room with a group of girls. Surprisingly, my presence in their midst did not influence their responses during the FGDs as evidenced in the richness of the data collected. Secondly, the skills developed during the qualitative research positively influenced how I interacted and related to the participants, and I was able to conduct effective FGDs and interviews.

### 8.5.2 My roles and positionality

Macbeth's (2001) study recognises the need for 'positional reflexivity' to understand how the profile, place and the positioning of oneself shape the research process. Positional reflexivity helped me to think about my expected role in the research and what is my relationship with the research participants (Cunliffe, 2011). At the early stage of the data collection process, I positioned myself as an outsider (researcher) studying an insider (service provider). Coming back from the UK, I was dressing smartly, speaking good English and positioning myself as an international researcher as my introduction reads "A researcher from the University of Hull, UK". This affected my relationships with the first participants I interviewed (Cunliffe, 2011). For example, I noticed the first service provider I interviewed was not open or forthcoming during our discussion as she saw me as someone who has come to monitor what they were doing and gathering data to be used against their practice. This made her defensive in answering some interview questions. This realisation made me readjust the language used for the interview. I shifted from speaking standard English to Pidgin (Broken) English. The slight change made her acknowledge me as a local person who knows what is going on in the system, subsequently changing her responses, and making our discussions more robust and open instead of closed-ended answers. As Day (2012) advises, after the interview, I reflected over my field roles and identities. This influenced my subsequent interviews as I decided to wear my local dresses, speak Pidgin English where necessary to position myself as an insider and a local person and to let them know that I have lived in the State (Abuja) before travelling to the UK for my studies.

Finally, during the interview, the responses of some of the service providers challenged my world-view and values. I found it difficult to build a good relationship with some service providers who were against young people's access and use of SRH services, especially contraceptives. But when I remembered how the relationship between the researcher and participant could influence the research outcome (Orr and Bennett, 2009), I decided to conduct myself without challenging the participant's position on young people's sexuality. This helped the participants to express their feelings without fear of any threat or challenge to their authority. The next chapter provides the conclusion and recommendations to this thesis.

# Chapter 9: Conclusion and recommendations

## 9.1 Summary of key findings/overall conclusion

This thesis examines the factors that influence adolescents' access to and use of SRH services in Nigeria using a mixed method approach. While the quantitative strand examines the determinants of contraceptive use and comprehensive knowledge of HIV/AIDS, the qualitative strand explores the views and perceptions of adolescents and service providers on the use of SRH services in Nigeria. Overall, the results showed that although most of the variations in contraceptive use and comprehensive knowledge of HIV occur at the individual level, there were significant effects from the community and state level factors on an adolescent's use of SRH services in Nigeria. As hypothesises in this thesis, this shows that the factors that influence adolescents' access and use of SRH services in Nigeria are multifaceted and required a multisectoral collaboration among key stakeholders in Nigeria to address them. This aligns with the WHO (2010) framework for designing sexual health programmes, which recognises five multisectoral factors that influence adolescents' SRH: a. Policies/laws, b. Education, c. Culture and society, d. Economies and e. health systems. Therefore, while interventions to increase knowledge of available services and to promote sex education among adolescents in schools, such as the Family Life HIV Education (FLHE) are critical and should be continued, the community, institutional and state level interventions are expedient and should be given attention, as suggested by WHO framework for SRH improvement. WHO (2018) in a literature review with 57000 peer reviewed articles and grey literature found that no single approach works to improve all adolescents' health outcomes.

It is interesting in this study to note the significant role of education at the individual and state level in determining access and use of contraception and having comprehensive knowledge of HIV among adolescent boys and girls in Nigeria. This evidence shows that an increase in adolescents' SRH use is not only dependent on addressing the healthcare-related challenges but also the education related issues. It is not surprising that the WHO (2010) framework recognised education as a critical component in accelerating adolescents' access to sexual health services. There is need to expand the primary and secondary school enrolment for adolescents, especially adolescent girls, as the current statistics show that 10.5 million children in Nigeria are out-of-school (UNICEF, 2017).

In addition, with the Primary Health Care (PHC) facilities accounting for 80% of the total health facilities in Nigeria, which caters for over 70% of the population, there is a need to prioritise the supply-side barriers associated with adolescents' access and use of SRH services. Although the Federal government via the Ministry of Health has developed a guideline for integration of Adolescents and Youth Friendly Health Services (AYFHS) in PHC centres in Nigeria, there was less emphasis on addressing the attitudinal behaviour of service providers. The evidence from this study shows that this is a key hindrance to adolescent access of SRH services. The WHO (2010) framework for designing sexual health programmes recognised the health system as one of the five multisectoral factors that influence adolescents' SRH, which needs to be addressed. Therefore, intensifying efforts on sexuality education through FLHE for in-school adolescents, community outreaches for out-of-school adolescents, strengthening the capacity of service providers to be responsive to adolescent SRH and providing a confidential service would make a significant improvement in adolescent overall SRH health outcomes in Nigeria.

## 9.2 Key contributions made by the study

According to Petre and Rugg (2010), making a significant contribution to research of this nature means contributing to a discourse or knowledge. Pugh (2010) outlined 15 key areas that constitute originality in a PhD research which fits within Brown and Dant's (2008) four thematic areas. These include: adding new knowledge, extending an understanding of existing knowledge, discovering surprising results and tackling interesting practitioners' problems. Originality is demonstrated in many facets of this study. The study is original in terms of settings, group studied, subject area and methodology. This is the only study that has used a sequential mixed method approach to examine in detail the factors influencing unmarried adolescents' use of sexual and reproductive health services in Nigeria.

## 9.3 Key contributions of the study to the body of Knowledge

- One of the key contributions of this study is the focus on the views of both providers and adolescents on Sexual and Reproductive Health (SRH) service concerns/needs, perceived enablers and barriers to adolescents' use of services. No single study has examined both adolescents and the service provider's perception, as well as the discrepancies in views on

the use of SRH services between these two groups. This area of work is a substantial contribution to the scientific body of knowledge.

- Previous studies have examined the determinants of comprehensive knowledge of HIV (CKH) among adolescents using a two-level model. However, this study fills an important gap by examining the factors that influence an adolescent's CKH beyond the individual/family and community level to factors at the state level that influence adolescents' CKH in Nigeria, such as media exposure at the state level and the variations in CKH across the states in Nigeria.
- This study contributes to the body of knowledge by showing the effect of "Age of Household head" on adolescents' comprehensive knowledge of HIV and use of contraceptives, which until this time, had been ignored in the literature. This evidence shows the effect of autonomy and freedom on adolescents' use of services as the study indicates that adolescents in youth headed households were more likely to use contraceptives and have comprehensive knowledge of HIV than those in an adult headed household.
- Some studies have examined the individual and community level determinants of contraceptive use among adolescents. However, this study made an important contribution by revealing the factors beyond just the individual and community level influence to interconnected state level factors that have an effect on adolescents' contraceptive use such as the effect of educational years in the state on contraceptive use and the variations in contraceptive use across the states in Nigeria.
- This study made an important contribution to the field by re-contextualising Foucault's theory of sexuality. This study extends the understanding of Foucault's work beyond western culture. Foucault's work was developed out of his analysis of the western approach to sexuality and gender. This study extends our understanding of Foucault's work beyond western culture to an African context in order to understand a non-western approach to sexuality.
- One of the criticisms of the Social-Ecological Theory centres on the difficulties of testing the theory. This study makes an important contribution by testing and validating the theory by proving empirical evidence to confirm the assumption of the Social Ecological Theory/Model which argues that sexual health behaviour and use of services are affected by the interaction between individual characteristics, the community and the environment.

## 9.4 Limitations of the study

The data used for the quantitative strand of this study was taken from three nationally representative surveys conducted in 2003, 2008 and 2013. Although these surveys provided important information to measure the trends and determinants of CKH, contraceptive use and other population health indicators, they are not without demerits. First, one of the limitations of using the DHS survey is that it is retrospective in nature; subjecting it to recall bias, which could affect the result. Participants in this study were meant to recall past events. For example, the questionnaire used for the data collection containing some information, such as: *When was the last time you used a method of contraceptive? When did you start using that method and how long did you use the method for?* These questions are subject to recall bias, which may affect the quality of the data used in the secondary analysis; perhaps impacting on the results. However, a detailed evaluation of the DHS data has shown that these data are reasonably well reported (Boerma and Sommerfelt, 1993).

Secondly, apart from recall bias, social desirability bias may exert a strong influence on both the quantitative and qualitative data. Social desirability bias is problematic in studies that rely on self-reported sexual behaviour data (Kelly et al., 2013). This area of study (Adolescents sexual health) is generally socially unacceptable, and therefore self-reported information on this could be under-reported. For example, some of the DHS questions say *1. When was the last time you had sexual intercourse?* 2. If they have had sex in the last 4 weeks? this type of question is more likely to be under-reported due to sex outside marriage and among adolescents being censured, stigmatised, and socially intolerable. Adolescents may feel pressured to under reporting or over-reporting certain outcomes. This may affect the quality of the answers provided during the face to face survey, especially those relating to contraceptive use which would imply that the respondents were sexually active; justifying the reason given in chapter 5 for including all unmarried adolescent in the analyses instead of focusing on the sexually active adolescents.

Thirdly, the multivariate analysis did not control for facility/institutional level factors. This was due to the unavailability of these variables in the DHS dataset. The NDHS data did not capture information on the facility level characteristics, including the service provider's attitude, quality of service delivery and confidentiality. There is a chance that controlling for this information would have helped to explain the variation in contraceptive use among adolescents in the model.

However, the facility level determinants were captured in the qualitative interviews, and it complemented the quantitative study, which is the beauty of a mixed method study.

Furthermore, concerning the qualitative data collected, the choice of a workplace setting for the interview was a limitation in this study, although it was advantageous in terms of safeguarding the participants but to an extent impacted on the interview quality. Service providers in this study were interviewed in their workplaces. Some granted the interview during their working hours as it was not possible to interview them any other time. As a result, some of the interviews were interrupted as some of the interviewees were intermittently attending to other matters in the clinics and answering phone calls. This affected the length, flow and quality of the interview. However, the majority of the interviews were of high quality, which is reflected in the quality of data presented in this thesis.

Finally, due to the limited resources available for this study, participants for the interviews and Focus Group Discussions (FGDs) were recruited from the Federal Capital Territory Abuja. If resources were available, it would have been ideal for recruiting participants and extending the study to other geopolitical zones in Nigeria. However, the quantitative data is a national representative sample; therefore, there is the possibility that some of these variations were captured in the quantitative data.

## 9.5 Recommendations for policy, practice and service provision.

### 9.5.1 Implication for Policy

- The evidence from the qualitative findings shows that adolescent girls are sexually harassed and abused by their male teachers. This necessitates the need for The Federal Ministry of Education to champion and mandate all private and public schools in Nigeria to develop a safeguarding policy to protect young people from sexual harassment and abuse from teachers. There is also a need for the Nigerian senate to strengthen and enforce the laws around sexual abuse and rape.
- The FMoH and the State Ministry of Health (SMoH) through various agencies e.g. NACA, should ensure that interventions to increase the comprehensive knowledge of HIV/AIDS among adolescents go beyond addressing individual-level factors (sex education in schools) to interconnected contextual-level factors that influence adolescents' health (engagement

with religious and community leaders, political willingness to deliver proposed budgets). The evidence from the quantitative strand of this study shows that adolescents' contraceptive knowledge did not translate into equitable use. Therefore, the FMoH should focus on and develop interventions that would focus on the translation of knowledge into proper and equitable sexual health practices.

- The Federal Ministry of Health (FMoH) should design policies and interventions that would cater to the needs of adolescents in the northern region of Nigeria where there is a prevalence of Muslim adolescents of Hausa origin. There is a need to close the inequality gap that exists among adolescents across the south and north geopolitical zones through delivering culturally appropriate sexual health services, including condoms and their use. This is a necessity as this study shows that adolescents from the northern region are less likely to use contraception than those from the southern region.
- As at 2013, 45% of girls and 31% of boys drop out at the secondary level. The Federal government through the Federal Ministry of Education (FMoE) should invest in education across the states, especially among adolescent girls. No individual should be left without acquiring at least secondary level education. Different developmental agencies in Nigeria should support the promotion of this course, especially girl-child education.

### 9.5.2 The implication for service provision

- The evidence reported in the study reveals that adolescents' Comprehensive Knowledge of HIV is lower (32.1%) than the UN General Assembly Special Session (UNGASS) recommendation (95%). This shows the need for the Federal Ministry of Health and the Federal Ministry of Education to strategically collaborate and engage with the state and local partners to deliver comprehensive sexuality education (Family Life HIV/AIDS Education (FLHE) and community outreach) to both in-school and out-of-school adolescents in Nigeria by ensuring appropriate allocation of resources, training of teachers, availability of teaching resources and quality assurance monitoring. The FLHE in Nigeria should incorporate the UNFPA nine essential components of Comprehensive Sexuality Education.
- The Federal Ministry of Health and the National Agency for the Control AIDS should form a strategic partnership to develop a supplementary online platform for SRH information to

young people. The evidence in this study shows that the majority of the adolescents, especially the boys, seek SRH information from a friend and the internet. This suggests the need for an integrative online platform/database that would be populated with age-appropriate SRH information and would link to youth-friendly services.

- The findings show that the current contraceptive use among unmarried adolescents was suboptimal and less than the national average. This implies that the current family planning delivery needs to be re-evaluated within the context of the Nigeria Family Planning Blueprint (NFPB) in order to ensure it is delivered promptly and that the environment is youth friendly. A Youth-friendly environment is one of the WHO recommended areas of improvement to ensure SRH service utilisation by adolescents. Efforts should be made to eliminate any financial cost of contraceptives to adolescents, including cost for the consumables.

### 9.5.3 Implication for Practice

- The Federal Ministry of Health should train service providers to be more responsive to young people's SRH needs. A well-tailored training programme for service providers focusing on the value systems, beliefs and ethics of providing SRH services is needed. With the government plans to integrate adolescent and youth-friendly Sexual health services in Nigeria, there is an overarching need to build the capacity of service providers. This area of intervention is not only cost effective but would help to achieve the desired result rather than spending resources in building new facilities when the old ones are not meeting the needs of young people.
- The Federal Ministry of Health (FMoH) should develop a monitoring and evaluation system to track adherence to service delivery guidelines (e.g. using mystery clients occasionally). There is a need for regular supportive supervision in order to maintain the quality of care and motivation. The FMoH should develop guidelines or standardised complaint procedures to enable service users to evaluate/complain and make suggestions about the SRH services they are receiving. This practice would provide useful feedback to enable effective and higher quality SRH service delivery that would meet the needs of users.
- The FMoH and the Federal Civil Service Commission of Nigeria (FCSC) should review the recruitment process of the Primary Health Care (PHC) to ensure only individuals who

understand and are willing to comply with the requirements and the standards of SRH care delivery are recruited and posted to the various PHC centres in Nigeria. This would help reduce the number of service providers with judgemental attitudes towards adolescents' use of SRH services.

### 9.5.4 The implication for future research agenda

This study, in addition to identifying the challenges adolescent face in accessing SRH services in Nigeria, also, revealed areas of further research. First, the qualitative strand in this study explored the views of adolescents and services providers on SRH service use among adolescents. However, there is also a need to examine the views and perceptions of key stakeholders, like religious/community leaders, school teachers/directors, policymakers, and parents on adolescent use of SRH services.

Secondly, the result in the current study shows that the intra-state correlation shows that 6.4% of the total unexplained variation in the odds of having comprehensive knowledge of HIV and 4.4% of the total unexplained variations in the odds of using a contraceptive could not be accounted for in this study. Although part of this include the facility level factors that were controlled for during analyses. However, there is need for further research to explore the complexities that surround adolescent health services and the challenges in providing sustainable adolescent and youth-friendly health-care services in Nigeria using a system thinking approach.

Finally, there is need to explore the factors that influence integrated youth friendly services into Primary Healthcare Centre (PHC) i.e. to develop in-depth understanding of how and under what conditions do integrated youth-friendly health services (YFHS) into existing services work or fail to improve adolescents' access to SRH services.

## 9.6 Conclusion

This study hypothesises that beyond individual level factors, adolescents' access and use of SRH services are influenced by community/state and institutional level factors. The evidence from both the quantitative and qualitative strand of this study further consolidates this assumption;

indicating that both micro level (individual) and macro level (community, facility, state) level factors influence adolescent's access and use of SRH services in Nigeria. There is need while focusing on the micro level factors to pay closer attention to the macro level barriers, as more improvement in the use of SRH services would be seen if the latter is given a priority. This supports the WHO recommendations that policymakers at all levels should ensure that the SRH interventions encompass multilevel programming; moving from individual focus to social and policy modifications. The Federal Ministry of Health Policy Development Plan for the integration of adolescents' SRH to the Primary Health Care (PHC) provides a sound basis. However, this could only achieve the desired results if both the attitudinal qualities of service providers and confidentiality issues in the PHC centres in Nigeria are dealt with. Addressing these issues would not only accelerate the National Reproductive Health Policy goal of increasing adolescent and young people's access to quality SRH services in Nigeria but would enormously contribute to the UN Sustainable Development Goals (SDGs) 3 and 5 (specifically targets 3.7, 5.6) and potentially impact on other areas of the SDGs such as reducing poverty, gender equality and enhancing economic growth as adolescent's (especially the girls) access to quality and age-appropriate SRH information and services would inform their decision-making ability and strengthen their negotiation skills.

## References


Adepoju A (2006) Adolescent Sexual and Reproductive Health in Nigeria: Behavioural Patterns and Needs; iUniverse,

Adih, W. K., & Alexander, C. S. (1999). Determinants of condom use to prevent HIV infection among youth in Ghana. *Journal of Adolescent Health, 24*(1), 63-72.

Aduayi VA, Aduayi OS, Olasode OA (2016) Sexual coercion and violence among young women in Nigeria: a northern and southern comparison. African Journal of Reproductive Health 20:37-43.

Alo, O. A and Akinde, I. S., 2009. Premarital activities in urban society of South West Nigeria. WAJN, 19: (2) – 10 – 16.

Alabi O, Doctor HV, Jumare A, Sahabi N, Abdulwahab A, Findley SE, et al. (2014) Health & Demographic Surveillance System Profile: The Nahuche Health and Demographic Surveillance System. Northern Nigeria (Nahuche HDSS): International Journal of Epidemiology; 2014. p. dyu197.

Advisory Group on Contraception (2012) Sex, Lives and Commissioning advisory services [Online] Available at https://www.fpa.org.uk/sites/default/files/healthy-women-healthy-lives-full-report-july-2012.pdf. (Accessed 12/5/2017).

Agampodi S.B; Agampodi T.C & Piyaseeli U.K.D (2008) Adolescent's perception of reproductive health care services in Sri Lanka. BMC Health Services Research, 8:98 doi: 10.1186/1472-6963-8-98.

Ahanonu, E. L. (2014). Attitudes of Healthcare Providers towards Providing Contraceptives for Unmarried Adolescents in Ibadan, Nigeria. Journal of Family & Reproductive Health, 8(1), 33–40. Arch Pediatr Adolesc Med, 165. Pp. 77-84.

Allen S; Meinzen-Derr, J; Kautzman M; Zulu I; Trask S, Fideli U, Musonda R, Kasolo F, Gao F & Haworth A. (2003) Sexual behaviour of HIV discordant couples after HIV counselling and testing. AIDS; 17:733–40.

Alli F & Maharaj P (2013) Interpersonal Relations Between Health Care Workers and Young Clients: barriers to Accessing Sexual and Reproductive Health Care. J Community Health; 38:150–155.

Alo, O. A., & Akinde, I. S. (2010). Premarital sexual activities in an urban society of southwest Nigeria. Journal of Medical Humanities and Social Studies of Science and Technology, 2, 1–16. Retrieved from http://www.ea-journal.com/art2.1 / Premarital-sexual-activities-in-an-urban-society-of-Southwest-Nigeria.pdf.

Amsalu Feleke, S., NegeseKoye, D., FelekeDemssie, A. & BirhanuMengesha, Z. (2013) Reproductive health service utilisation and associated factors among adolescents (15-19 years old) in Gondar town, Northwest Ethiopia. BMC health services research, 13 (1), 1-10.

Amuyunzu-Nyamongo M, Biddlecom A.E, Ouedraogo C and Woog V. (2015) Qualitative Evidence on Adolescents' Views of Sexual and Reproductive Health in Sub-Saharan Africa. Guttmacher Institute New York.

Aschengrau, A & Seage, G.R (2009). Essential of epidemiology in public health. Sudbury, MA: Jones and Bartlett

Atelik, K. (2012) the non-use of services: adolescents and sexual health provision in Ankara, Turkey. Journal of children's services, 7 (3), 201-212.

Baker, D. P; Leon, J & Collins, J. M. (2011) Facts, attitudes, and health reasoning about HIV and AIDS: Explaining the education effect on condom use among adults in Sub-Saharan Africa. AIDS and behaviour, 15 (7), 1319-1327.

Bamgbala, A.O., Adebajo, S.B., Inem, V.A., Onajole, A.T., Ayankogbe, O.O., Roberts, A.A. & Campbell, P.C. (2006) Perceptions and practices of private medical practitioners to adolescent reproductive health in Lagos State, Nigeria. The Nigerian postgraduate medical journal, 13 (2), 117-122.

Bankole A; Singh S; Woog V & Wulf D (2004) Risk and Protection: Youth and HIV/AIDS in sub-Saharan Africa. New York: The Alan Guttmacher Institute.

Bankole, A., Ahmed, F.H., Neema, S. & Ouedraogo, C. (2015) Knowledge of correct condom use and in of use among adolescent's consistency four countries in Sub-Saharan Africa. African Journal of Reproductive Health 11(3):197-220.

Barnhardt, C.L., Reyes, K., Vidal Rodriguez, A. & Ramos, M. (2016) A Transformative Mixed Methods Assessment of Educational Access and Opportunity for Undocumented College Students in the Southeastern United States. Journal of mixed methods research,

Baumeister R.F. & Twenge J. M (2002). Cultural Suppression of Female Sexuality. Review of General Psychology Copyright by the Educational Publishing Foundation, Vol. 6, No. 2, 166–203.

Bearinger L.H, Sieving R.E., Ferguson. J, & Sharma, V (2003) Global perspectives on the sexual and reproductive health of adolescents: patterns, prevention, and potential. Lancet; 369(9568):1220-1231.

Bearinger, L.H; Sieving, R.E; Ferguson, J & Sharma, V (2007) Global perspectives on the sexual and reproductive health of adolescents: patterns, prevention, and potential. Lancet, 369 (9568) (2007), pp. 1220-1231.

Beauchamp, T.L. & Childress, J.F. (2012) Principles of biomedical ethics-New York; Oxford: Oxford University Press.

Bekker, L. & Hosek, S. (2015) HIV and adolescents: focus on young key populations. Journal of the International AIDS Society, 18 (2).

Berer, M. (2014) the sustainable development agenda and unmet need for sexual and reproductive health and rights. Reproductive health matters, 22 (43), 4-13.

Bergman, M. M. (2008) Advances in mixed methods research Los Angeles; London: Sage.

Bethea, J., Hippisley-Cox, J., Coupland, C. & Pringle, M. (2007) General practitioners' attitudes towards the provision of services to young people aged under 16: a cross-sectional survey. Quality in primary care, 15 (1), 11-19 9p.

Bicetre, L.K and U, M.C.I (2004) Trends and determinants of reproductive health service use among young women in the United States. Contraception, 80 (2), 224-224.

Biddlecom AE, Munthali A, Singh S & Woog V. (2007) Adolescents views of and preferences for sexual and reproductive health, services in Burkina Faso, Ghana, Malawi and Uganda. Afr J Reprod Health; 11[3]:99-110

Blanc A.K, Tsui, A.O; Croft, T.N & Trevitt J.L (2009) Patterns and trends in adolescents' contraceptive use and discontinuation in developing countries and comparisons with adult women. Int Perspect Sex Reprod Health, 35 (2), pp. 63-71

Blanc, A. K, Kimberly, G; Ofomata-Aderemi U & Akinfaderin-Agarau F (2016) Myths and Misinformation: An Analysis of Text Messages Sent to a Sexual and Reproductive Health Q&A Service in Nigeria. Family Planning; 47[1]: 39–53)

Blixen, C.E., Webster, N.J., Hund, A.J., Perzynski, A.T., Kanuch, S.W., Stoller, E.P., McCormick, R.A. & Dawson, N.V. (2008) Communicating about alcohol consumption to nonharmful drinkers with hepatitis C: Patient and provider perspectives. Journal of general internal medicine, 23 (3), 242-247.

Boerma. J.T. & Sommerfelt A, E. (1993). Demographic and health surveys (DHS): contributions and limitations. Rapp. trimmest. Statist. Sanit. Mond., 46.

Bogale GW, Boer H, Seydel ER (2011) Effects of a theory-based audio HIV/AIDS intervention for illiterate rural females in Amhara, Ethiopia. AIDS Educ Prev 23: 25–37.

Both, R. & Samuel, F. (2014) Keeping silent about emergency contraceptives in Addis Ababa: a qualitative study among young people, service providers, and key stakeholders. BMC women's health, 14 (1), 1-19.

Bourton, V. (2006) Sex education in school: young people's views. Paediatric Nursing, 18 (8), 20-22.

Bowling, A. (2009) Research methods in health Maidenhead: McGraw-Hill Open University Press.

Boyatzis, R. E. (1998). Transforming qualitative information: Thematic analysis and code development. Thousand Oaks, CA: Sage.

Boyce, C. & Neale, P. (2006) Conducting in-depth interviews: A Guide for designing and conducting in-depth interviews. Evaluation, 2 1-16.

Braun V & Clarke V. (2016) Using thematic analysis in psychology. Qualitative Research in Psychology, 3 2016; (2). Pp. 77-101. ISSN. 1478-0887 Available from http://eprints.uwe.ac.uk/11735.

Braun, V. & Clarke, V. (2006) Using thematic analysis in psychology. Qualitative Research in Psychology, 3 (2). Pp. 77-101. ISSN 1478-0887.

Bronfenbrenner, U. (1974). Developmental research, public policy, and the ecology of human development.

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development.

Bronfenbrenner, U. (1979). The ecology of human development: Experiment by nature

Bronfenbrenner, U. (1994). Ecology models of human development. In M. Gauvain & M.

Brown J.R & Dant R. P (2008) On what makes a significant contribution to the retailing literature. Journal of Retailing Volume 84, Issue 2, Pages 131-135

Browne, W. & Rasbash, J. (2004). 'Multilevel Modelling', in Hardy, M. and Bryman, A. (eds.), Handbook of data analysis, Sage Publications, pp 459-78.

Browne, W.J. (2009) MCMC Estimation in MLwiN, v2.10. Centre for Multilevel Modelling, University of Bristol. (Chapter 10).

Bulsara, C. (2015) Using a mixed methods approach to enhance and validate your research. Notre Dame University, 1-82. Brightwater Group ResearchCentre, 1-82, 2015. 55.

Buseh, A.G., Glass, L.K., Mc Elmurry, B.J., Mkhabela, M. & Sukati, N.A. (2002). Primary and preferred sources for HIV/AIDS and sexual risk behaviour information among adolescents in Swaziland, Southern Africa. International Journal of Nursing Studies.

Cameron, R. (2011) Mixed Methods Research: The Five Ps Framework: One-stop search. The electronic journal of business research methods, 9 (2), 96-108.

Campbell, PC. (2006) Perceptions and practices of private medical practitioners to adolescents' reproductive health in Lagos State Nigeria. The Nigeria postgraduate medical journal 13 (2) 117-122.

CardovaPozo, K., Chandra-Mouli, V., Decat, P., Nelson, E., De Meyer, S., Jaruseviciene, L., Vega, B., Segura, Z., Auquilla, N., Hagens, A., Van Braeckel, D. & Michielsen, K. (2015) Improving adolescent sexual and reproductive health in Latin America: reflections from an International Congress. Reproductive health, 12 (1), 11-11.

Carroll C, Lloyd-Jones M, Cooke J & Owen J. (2012) Reasons for the use and non-use of school sexual health services: a systematic review of young people's views. Journal of public (oxf).

Catholic for A free Choice (2004) Catholic attitude of sexual behaviour and Reproductive Health [Online] Available at http://www.catholicsforchoice.org/wp-content/uploads/2014/01/2004worldview.pdf (accessed 08/06/2019).

Cavallaro, D. (2001) Critical and Cultural Theory: Political Science / History & Theory A&C Black.

Çelik, K. & Esin, A. (2012) the non-use of services: adolescents and sexual health provision in Ankara, Turkey. Journal of children's services, 7 (3), 201-212.

Challa, S., Manu, A., Morhe, E., Dalton, V., Loll, D., Dozier, J., Zochowski, M., Boakye, A., Adanu, R. & Hall, K. (2017) Multiple levels of social influence on adolescent sexual and reproductive health decision-making and behaviours in Ghana. Women & Health, 58(4), pp.434-450.

Chambers R, Boath E & Chambers S (2002) Young people and professionals' views about ways to reduce teenage pregnancy rates: To agree or not agree. Journal of Fam Planning and reproductive healthcare Reprod Health Care. 28(2):85-90.

Chandra-Mauli A and Parameshwar P (2017) Never before opportunity on adolescent contraception part 1 [Online] Available at https://www.youtube.com/watch?v=qm3mtUsMH4A (Accessed 04/2/2020).

Chandra-Mouli, V., Parameshwar, P.S., Parry, M. et al. (2017) A never-before opportunity to strengthen investment and action on adolescent contraception, and what we must do to make full use of it. Reprod Health 14, 85 (2017). https://doi.org/10.1186/s12978-017-0347-9

Chandra-Mouli, V; McCarraher, D. R; Phillips S.J; Williamson N.E & Hainsworth G (2015) Contraception for adolescents in low and middle-income countries: needs, barriers, and access. ReprodHealth; 11(1):1.

Chandra-Mouli, V; Lane C & Wong S (2015) What Does Not Work in Adolescent Sexual and Reproductive Health: A Review of Evidence on Interventions Commonly Accepted as Best Practices ghsp 3: 333-340. Childhood. Child Development, 45, 1–5. doi:10.1111/1467-8624.ep12265367.

Chandra-Mouli V, McCarraher DR, Phillips SJ, Williamson NE, Hainsworth G. (2014) Contraception for adolescents in low and middle income countries: needs, barriers, and access. Reprod Health.

Chilinda, I., Hourahane, G., Pindani, M., Chitsulo, C. & Maluwa, A. (2014) Attitude of Health Care Providers towards Adolescent Sexual and Reproductive Health Services in Developing Countries: A Systematic Review. Health (1949-4998), 6 (14), 1706-1713 8p.

Chimbindi, N.Z., Mcgrath, N., Herbst, K., Tint, K.S. & Newell, M. (2010) Socio-Demographic Determinants of Condom Use Among Sexually Active Young Adults in Rural KwaZulu-Natal, South Africa. 88-95.

Ciampa, P.J., Skinner, S.L., Patricio, S., Rothman, R.L., Vermund, S.H. & Audet, C.M. (2012) Comprehensive Knowledge of HIV among Women in Rural Mozambique: Development and Validation of the HIV Knowledge 27 Scale. PLoS ONE, 7 (10),

Cleland J, Boerma JT, Carael M*, et al (2004)* Monitoring sexual behaviour in general populations: a synthesis of lessons of the past decade Sexually Transmitted Infections;**80:**ii1-ii7.

Coates TJ., Richter L, Caceres C. (2008) Behavioural strategies to reduce HIV transmission: how to make them work better. Lancet. 372(9639):669-684. Doi: 10.1016/S0140-736(08)60886-7.

Cole (Eds.), Readings on the development of children (2nd ed., pp. 37–43). New

Conner, M. & Norman, P. (1996). Predicting Health Behavior. Search and Practice with Social Cognition Models. Open University Press: Ballmore: Buckingham.

Corbin, J., & Strauss, A. (2008). Basics of qualitative research: Techniques and procedures for developing grounded theory. Thousand Oaks, CA: Sage.

Corley, K.G & Gioia D.A (2004) Identify ambiguity and change in the wake of a corporate spin-off. Administrative science quarterly 49, 173-208.

Cortez, R; Saadat, S; Marinda, E & Oluwole O. (2015) adolescent sexual and reproductive health in Nigeria. Health, Nutrition and Population Global Practice.

Creswell, J. & Clark, V. P. (2007) Choosing a mixed methods design and designing and conducting mixed methods research, 53-106.

Creswell, J. W. & Plano Clark, V. L. (2011) Designing and conducting mixed methods research Los Angeles, Calif.; London: SAGE Publications.

Creswell, J. W. & Plano-Clark, V. L. (2007) Designing and conducting mixed methods research: Los Angeles, Calif.; London: SAGE Publications.

Critical Appraisal Skills Programme (2014) CASP Checklists [Online] available at http://www.casp-uk.net/untitled. Oxford. CASP. (Accessed 7/01/201).

Cottingham J, Kismodi E, Martin-Hilber A, Lincetto O, Stahlhofer M, Gruskin S (2010). Using human rights for sexual and reproductive health: improving legal and regulatory frameworks. Bull World Health Organ; 88:551–5.

Cunliffe, A. L. (2011) 'Why complicate a done deal? Bringing reflexivity into management research', in C. Cassell and B. Lee (eds.), Challenges and Controversies in Management Research. London: Routledge. Pp. 404–418.

Darroch J. E; Woog V; Bankole, A & Ashford L.S (2016) Adding It Up: Costs and Benefits of Meeting the Contraceptive Needs of Adolescents, New York: Guttmacher Institute, https://www.guttmacher.org/sites/default/files/report_pdf/adding-it-up-adolescents-report.pdf.

Darroch, J.E. & Singh, S. (1999) Why Is Teenage Pregnancy Declining? The Roles of Abstinence, Sexual Activity, and Contraceptive Use. Occasional Report No. 1, The Alan Guttmacher Institute (AGI), New York.

Day, S. (2012) 'A reflexive lens: Exploring dilemmas of qualitative methodology through the concept of reflexivity', Qualitative Sociology Review, 8(1): 60–85.

De Sweemer, (1975) Family Planning Programs: World Review 1974. Studies in Family Planning 6: 291–293.

Delamater, J.D., & Hyde, J.S. (1998). Essentialism vs social constructionism in the study of human Sexuality. The Journal of Sex Research. Volume 35. The Use of Theory in Research and Scholarship on Sexuality.

Delano C.E. (2002). "Traditional Method of Birth Control". Planner's Forum. 1 (1) pp.8-11. Journal of Education and Practice www.iiste.org (Online) Vol.4, No.15.

Department of Maternal Newborn Child and, Adolescent Health (2012) Making Health Services Adolescent Friendly - Developing National Quality Standards for Adolescent Friendly Health Services. 3-3. framework for action. Geneva: documents/2017/20170720_Global_AIDS_update).

Diez-Roux A.V; Aiello A.E (2005) Multilevel analysis of infectious diseases, J Infect Dis, vol. 191 Suppl 1 (pg. S25-33).

Dixon L.J; Correa, T; Straubhaar J; Covarrubias L; Graber D; Spence J; Rojas V (2014) Gendered Space: The Digital Divide between Male and Female Users in Internet Public Access Sites. Journal of computer mediated communication.

Donaldson, A. A.; Lindberg, D.M; Ellen, J.M & Marcell; D.M (2013) Receipt of Sexual Health Information from Parents, Teachers, and Healthcare Providers by Sexually Experienced U. S. Adolescents. Journal of adolescent health, 53 (2), 235-240.

Donovan, C., Mellanby, A.R., Jacobson, L.D., Taylor, B. & Tripp, J.H. (1997) Teenagers' views on the general practice consultation and provision of contraception. The Adolescent Working Group. The British journal of general practice: The journal of the royal college of general practitioners, 47 (424), 715-718.

Downing, J. & Cook, P. A. (2006) Evaluation of young people's contraceptive and sexual health services in Knowsley. 1-70.

Durokifa, A. A; Abdul-wasi, B. M (2016) Evaluating Nigeria's Achievement of the Millennium Development Goals (MDGs): determinants, deliverables, and shortfalls. africa's Public Service Delivery & Performance Review

Ege, E., Akin, B. & Altuntug, K. (2008) Opinions of midwifery students on adolescent sexuality and reproductive health in Turkey. Social behaviour and personality, 36 (7), 965-972.

Elder, J. P., Lytle, L., Sallis, J. F., Young, D. R., Steckler, A., Simons-Morton, D., Ribisl, K. (2007). A description of the social-ecological framework used in the trial of activity for adolescent girls (TAAG). *Health education research*, *22*(2), 155–165. doi:10.1093/her/cyl059.

Erulkar A.S; Mekbib T.A; Simie N & Gulema T. (2006) Differential use of adolescent reproductive health programs in Addis Ababa, Ethiopia. J Adolesc Health; 38(3):253–260.

Erulkar, A.S; Onoka C.J; & Phiri A. (2015) what is youth-friendly? Adolescents' preferences for reproductive health services in Kenya and Zimbabwe. Afr J Reprod Health; Dec; 9(3):51-8.

Esiet, Adenike. (2010). Institutionalizing sexuality education at federal and state levels in Nigeria. Presentation at Bogota Consultation on Sexuality Education.

Every Woman Every Child, Global Strategy for Women's, Children's and Adolescents' Health (2015), http://globalstrategy. [Online] available at everywomaneverychild.org/pdf/EWEC_globalstrategyreport_200915_ FINAL_WEB.pdf (Accessed 23/02/2019).

Family Planning 2020, (2015) Accelerating progress, strategy for 2016–2020, [Online] available at http://www.familyplanning2020.org/ microsite/strategy. (Accessed 05/06/2019).

Federal Government of Nigeria (2014) Nigeria Family Planning Blueprint (Scale-Up Plan) October. [Online] available at https://www.healthpolicyproject.com/ns/docs/CIP_Nigeria.pdf. (Accessed 2/9/2018).

Federal Ministry of Health (2007) National Policy on the Health & Development of Adolescents & Young People in Nigeria. 36-36 [Online]Available at http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/nigeria/strategicframework.pdf (15/06/2019).

Federal Ministry of Health (2009) Assessment Report of the National Response to Young People's Sexual and Reproductive Health in Nigeria. 1-19.

Federal Ministry of Health (2013). The National guideline for promoting access of young people to adolescent and youth-friendly services in Primary Healthcare Facilities in Nigeria. [Online] Available on http://www.health.gov.ng/doc/GuidelinesPromotingAccess.pdf. (Accessed 07/01/2018).

Federal Ministry of Health (2014) guidelines for young persons' participation in research and access to sexual and reproductive health services in Nigeria. [Online] Available at https://www.popcouncil.org/uploads/pdfs/2014HIV_YoungPersonsSRH-Nigeria.pdf. (Accessed 24/01/2019).

Federal Ministry of Health (2017) National Family Planning Communication Plan (2017-2020) Strategy for Increasing the use of Modern Contraceptives in Nigeria.

Federal Ministry of Health [Nigeria] & Action Health Incorporated [Lagos] (2009). Assessment report of the national response to young people's sexual and reproductive health in Nigeria.

Federal Ministry of Health [Nigeria]. 2013. National Reproductive Health Working Group meeting report. Abuja, Nigeria: Federal Ministry of Health.

Federal Ministry of Health Nigeria (2011a) Executive session presentation on saving newborn lives in Nigeria in the context of the integrated maternal, newborn and child health strategy. Abuja, Nigeria: Federal Ministry of Health.

Federal Republic of Nigeria (2008) National HIV / AIDS and Reproductive Health Survey Federal Ministry of Health [Online] Available at https://naca.gov.ng/wp-content/uploads/2016/11/NARHS-Plus-2012-Final-18112013.pdf (Accessed 23/12/2018).

Federal Republic of Nigeria Poverty Work Program (2016) Poverty Reduction in Nigeria in the Last Decade [Online] Available at http://documents.worldbank.org/curated/en/103491483646246005/pdf/ACS19141-REVISED-PUBLIC-Pov-assessment-final.pdf (Accessed; 18/05/2019).

Feldman, J. B. (2012). Best Practice for Adolescent Prenatal Care: Application of an Attachment Theory Perspective to Enhance Prenatal Care and Diminish Birth Risks. Child and adolescent social work journal, 29 (2), 151-166.

Finer, L.B. and Zabin, L.S. (1998) Do the Timing of the First Family Planning Visit Still Matter? Family Planning Perspectives, 30, 30-33+42.

FMOH (2007) National policy on the health & development of adolescents & young people in Nigeria. 12-12. [Online] Available at https://www.prb.org/wp-content/uploads/2018/05/National-Policy-on-the-Health-and-Development-of-Adolescents-and-Young-People-in-Nigeria-2007.pdf. (Accessed 11/4/2016).

FMOH-Nigeria/UNFPA (2010) Action Plan for advancing young People's Health & Development in Nigeria [Online] Available at https://www.prb.org/wp-content/uploads/2018/05/Action-Plan-for-Advancing-Young-People%E2%80%99s-Health-and-Development-in-Nigeria-2010-2012.pdf. (Accessed 19/11/2015).

Fonkaew, W; Settheekul, S; Fonkaew, K. & Surapagdee, N. (2011) Effectiveness of a youth-led educational program on sexual and reproductive health for Thai early adolescents. Pacific Rim international journal of nursing research, 15 (2), 81-95 15p.

Foucault M. (1978). The history of sexuality, Vol 1: An introduction. New York: Pantheon.

Foucault M. (1972) Power and Knowledge. Selected Interviews & Other Writings 1972-1977. Edited by Collin Gordon. Translated by Colin Gordon, Leo Marshall, John Mepham, Kate Soper. Vintage Bo.

Foucault, M. (1998) The History of Sexuality: the will to knowledge, trans. R. Hurley, vol. 1. London: Penguin.

Foucault, M., (1978). The History of Sexuality, Vol. 1: An Introduction. Penguin, London.

French, R.S. (2002) the experience of young people with contraceptive consultations and health care workers. International journal of adolescent medicine and health, 14 (2), 131-138.

Galati, A.J (215) Onward to 2030: Sexual and Reproductive Health and Rights in the Context of the Sustainable Development Goals. Guttmacher Policy Review Fall 2015 Vol. 18, No. 4

Ganatra B, Gerdts C, Rossier C, Johnson BR, Tuncalp O, Assifi A, Sedgh G, Singh S, Bankole A, Popinchalk A, Bearak J, Kang Z, Alkema L. (2017) Global, regional, and sub-regional classification of abortions by safety: estimates from a Bayesian hierarchical model. The Lancet. 2017 Sept 2010–14.

Geary, R.S.; Gómez-Olivé, F.X; Kahn, K. T; Stephen N; Shane A. (2014) Barriers to and facilitators of the provision of a youth-friendly health services programme in rural South Africa. BMC Health Services Research201414:259

Gebregergish, S. (2015) the prevalence and determining factors of comprehensive knowledge of HIV/AIDS and condom use among adolescents in Sierra Leone Data from DHS 2013 [Online] Available at https://pdfs.semanticscholar.org/5581/f36232925e0f936ba1853d73b3664a36968d.pdf. (Accessed 27/02/2017).

Gill, J., & Johnson, P. (2010) Research Methods for Managers. 4th edn. London: Sage.

Given, L. M. (2008). The SAGE encyclopedia of qualitative research methods (Vols. 1-0). Thousand Oaks, CA: SAGE Publications, Inc. doi: 10.4135/9781412963909

Glanz, K., B; Rimer & Lewis. F. (2002). Health behaviour and health education. San Francisco, CA: John Wiley & Sons, Inc.

Glasier A; Gülmezoglu A.M; Schmid G.P; Moreno C.G & Van Look P.F. (2006) Sexual and reproductive health: a matter of life and death. Lancet. Nov 4; 368 (9547):1595-607.

Gloppen, K.M; David-Ferdon, C; Bates J (2010) Confidence as a Predictor of Sexual and Reproductive Health Outcomes for Youth. Journal of Adolescent Health 46; S42–S58

Godia, P.M., Olenja, J.M., Lavussa, J.A. & Quinney, D. (2013) Sexual reproductive health service provision to young people in Kenya; health service providers experiences BMC Health Services Research 2013 (13):476

Godswill, J. (2014) Adolescents Sexual and Reproductive Health Challenges in Northern Nigeria: Road Map to Effective Interventions. International letters of social and humanistic sciences, 24 1-11.

Goldstein H. (2003) Multilevel statistical models. 3rd ed. ed. Goldstein H, editor. London: UK: Halsted Press;

Goldstein, H., Rasbash, J. & Browne, W.J. (2002). Partitioning variation in multilevel models. Understanding Statistics, 1:223–231.

Gombachika, B.C; Fjeld, H; Chirwa, E; Sundby, J; Malata, A; and Maluwa, A (2012) "A Social Ecological Approach to Exploring Barriers to Accessing Sexual and Reproductive Health Services among Couples Living with HIV in Southern Malawi," ISRN Public Health

Gott M, Ingleton C, Gardiner C, et al. (2013) Transitions to palliative care for older people in acute hospitals: a mixed-methods study. Health Services and Delivery Research, No. 1.11. Southampton (UK): NIHR Journals Library.

Grandy W. R; Klepinger D.H & Billy J.O (1993) The Influence of Community Characteristics on the Practice of Effective Contraception. Family Planning Perspectives, Vol. 25, No. 1 (Jan. - Feb. 1993), pp. 4-11 Published by Guttmacher Institute Stable URL: https://www.jstor.org/stable/2135986.

Green L.W & Kreuter MW (2005) Health Program Planning: An Educational and Ecological Approach. New York: McGraw-Hill.

Greene, J. C. (2008) Mixing methods in social inquiry San Francisco, Calif.: Jossey-Bass.

Gruber, E., & Grube, J. W. (2000). Adolescent sexuality and the media: a review of current knowledge and implications. The Western journal of medicine, 172(3), 210-4.

Guest, G., Namey, E., & Mitchell, M (2013) Qualitative research: defining and designing. Collecting qualitative data (pp. 1-40). 55 City Road, London: SAGE Publications, Ltd doi: -10.4135/9781506374680

Gupta, I. & Mitra, A. (1999). "Knowledge of HIV/AIDS among Migrants in Delhi Slums." Journal of Health and Population in Developing Countries. 2(1):26-32.

Guttmacher Institute (2012) Advancing sexual and reproductive health worldwide through research, policy analysis and public education (Online) available at https://www.guttmacher.org/. (Accessed 17/06/2019).

Hall, K. S., Moreau, C., & Trussell, J. (2012). Determinants of and disparities in reproductive health service use among adolescent and young adult women in the United States, 2002-2008. *American journal of public health, 102(2),* 359–367. doi:10.2105/AJPH.2011.300380.

Hammersley, M. & Atkinson, P. (1983). Ethnography: Principles in Practice. London: Tavistock.

Hardy, C., Phillips, N., & Clegg, S. (2001) 'Reflexivity in organization and management theory: A study of the production of the research subject', Human Relations, 54(5): 531–560.

Hargreaves, J.R., Morison, L.A., Kim, J.C., Busza, J. &Phetla, G. (2010) Characteristics of sexual partnerships, not just of individuals, are associated with condom use and recent HIV infection in rural South Africa

Harmaz, K. (2006). Grounded theory: A practical guide through qualitative analysis. Thousand Oaks, CA: Sage.

Harper C.R; Steiner R.J & Brookmeyer K.A. (2018) Using the Social-Ecological Model to Improve Access to Care for Adolescents and Young Adults. Journal of Adolescent Health. Volume 62, Issue 6, Pages 641–642.

Hawker S, Payne S, Kerr C, Hardey M & Powell J. (2002) Appraising the Evidence: Reviewing Disparate Data Systematically. Sage Journals; Qualitative Health Research ;12(9): 1284-1299

Haynes, K. (2012) 'Reflexivity in qualitative research', in G. Symon and C. Cassell (eds.), Qualitative Organizational Research: Core Methods and Current Challenges. London: Sage. Pp. 72–89.

Heale, R. & Twycross, A. (2015) Validity and reliability in quantitative studies. Evidence-based nursing, BMC Journals 18 (3), 66-67.

Health, A. (2006) Introduction Access to Health Services for Young People for Preventing HIV and Improving Sexual and reproductive health.

Heather C D. Pinkerton, L M & Bogart (1999) Perceived Benefits and Barriers Associated with the Female Condom among African-American Adults. Journal of Health Psychology: Vol 4, Issue 2, pp. 165 - 175

Hebert L.E; Schwandt, H.M; Boulay, M & Skinner J. (2013) Family planning providers' perspectives on family planning service delivery in Ibadan and Kaduna, Nigeria: a qualitative study. Journal of Family Planning Reproductive Health Care. Jan; 39(1):29-35

Heckel, N.I. (1996). Population laws and policies in sub-Saharan Africa, 1975–1995. International Family Planning Perspectives 12(4):122–124.

Hendriksen, E.S; Pettifor, A; Lee, S; Coates, T.J; Rees, H.V. & Cantab, M.A. (2007) Predictors of Condom Use Among Young Adults in South Africa: The Reproductive Health and HIV Research Unit National Youth Survey. 97 (7).

Hibbert, P; Coupland, C & MacIntosh, R. (2010) 'Reflexivity: Recursion and relationality in organizational research processes', Qualitative Research in Organizations and Management: An International Journal, 5(1): 47–62. Household surveys in 42 countries. Acta Obstet Gynecol Scand. 91(9):1114–1118.

Hindin, M.J; Kalama A.M; Thompson, T and Upadhyay U.D (2016) Interventions to Prevent Unintended and Repeat Pregnancy among Young People in Low- and Middle-Income Countries: A Systematic Review of the Published and Gray Literature, Journal of Adolescent Health, 59(3): S8–S15, doi: 10.1016/j.jadohealth.

Hox, J. J. (2010) Multilevel Analysis. Quantitative methodology series, 382-382. [Online] available at http://www.advocatesforyouth.org/storage/advfy/documents/youthfriendly.pdf http://www.who.int/reproductivehealth/publications/unsafe_abortion/induced_abortion_2012.pdf. (Accessed 23/11/2018).

Idoko, J. (2012) Addressing Youth vulnerability to HIV/AIDS in Nigeria. National agency for the control of AIDS [Online] Available at http://cped.org.ng/wp-content/uploads/2017/06/Addressing-Youth-vulnerability-to-HIV-AIDS-in-Nigeria.pdf. (Accessed 16/06/2019).

International Federation of Gynecology and Obstetrics (2011) Adolescent sexual and reproductive health (ASRH). London: FIGO; http://www.figo.org/figo-project publications.

International Planned Parenthood Federation (2008) Provide: Strengthening youth-friendly services. London; 2008. http://www.ippf.org/si85tes/default/files/inspire_provide.pdf. (Accessed 20/11/2017).

Jaruseviciene L, Lazarus J.V & Zaborskis A (2011) Confidentiality and parental involvement in adolescent sexual and reproductive health care: a cross-sectional study of Lithuanian general practitioners. Scandinavian Journal of Public Health. 484-491.

Ivankova, N. V., Creswell, J. W. & Stick, S. L. (2006) Using Mixed-Methods Sequential Explanatory Design: From Theory to Practice. Field methods, 18 (4), 1-8.

Iwokwagh, N. S; Agbana, B & Agbana B (2014) New Media Interventions for Adolescents Reproductive and Sexual Health: Evidence from Nigeria. 190-195. International Conference on Communication, Media, Technology and Design 24 - 26 April 2014, Istanbul – Turkey.

Iyer, P. & Aggleton, P. (2013) 'Sex education should be taught, fine…but we make sure they control themselves': teachers' beliefs and attitudes towards young people's sexual and reproductive health in a Ugandan secondary school. Sex education, 13 (1), 40-53. J Adolesc Health, 40, pp. 206-217.

Jacobson, L., Richardson, G., Parry-Langdon, N. & Donovan, C. (2001) how do teenagers and primary healthcare providers view each other? An overview of key themes. British journal of general practice,

James, K., & Vinnicombe, S. (2002) 'Acknowledging the individual in the researcher', in D. Partington (ed.), Essential Skills for Management Research. London: Sage. Pp. 84–98.

Jaruseviciene, L; Lazarus, J.V & Zaborskis, A. (2011) Confidentiality and parental involvement in adolescent sexual and reproductive health care: A cross-sectional study of Lithuanian general practitioners. 484-491.

Jaruseviciene, L., Levasseur, G. & Liljestrand, J. (2006) Confidentiality for adolescents seeking reproductive health care in Lithuania: the perceptions of general practitioners. Reproductive health matters, 14 (27), 129-137 9p.

Jaruseviciene, L; Orozco, M; Ibarra, M; Cordova Ossio, F; Vega, B., Auquilla, N., Medina, J., Gorter, A.C., Decat, P., De Meyer, S., Temmerman, M., Edmonds, A.B., Valius, L. & Lazarus, J.V (2013) Primary healthcare providers' views on improving sexual and reproductive healthcare for adolescents in Bolivia, Ecuador, and Nicaragua. Global health action, 6 1-8.

Jejeebhoy, S.J & Santhya K.G (2011) Sexual and reproductive health of young people in India: A review of policies, laws and programmes. Population Council New Delhi India.

Jessica L. M & Hamid R. (2015) Adolescent sexual and reproductive health: The global challenges. International Federation of Gynaecology and Obstetrics, London, UK

Johansson, A. (2006) Perspectives of midwives and doctors on adolescent sexuality and abortion care in Vietnam. 414-421. Scandinavian Journal of Public Health

Johnson, B T; Scott-Sheldon, L, A & Huedo-Medina, T, B (2011) Interventions to reduce sexual risk for human immunodeficiency virus in adolescents: A meta-analysis of trials 1985–2008. Arch Pediatr Adolesc Med. 2011 Jan;165(1):77-84. doi: 10.1001/archpediatrics.2010.251.

Johnson, R. B. & Onwuegbuzie, A. J. (2004) Mixed Methods Research: A Research Paradigm Whose Time Has Come. Jstor, 33 (7), 14-26. American Educational Research Association.

Johnston K; Harvey C; Matich P; Page P; Jukka C; Hollins J; Hons B & Larkins S. (2015) Increasing access to sexual Health care for rural and regional young people: Similarities and differences in the views of young people and service providers. The Australian Journal of Reproductive Health.

Joint United Nations Programme on HIV/AIDS- Global HIV & AIDS statistics (2018) [Online] available at https://www.unaids.org/en/resources/fact-sheet. (Accessed 2/10/2018).

Kaggwa, E.B; Diop, N & Storey J.D. (2008) The Role of Individual and Community Normative Factors: A Multilevel Analysis of Contraceptive Use Among Women in Union in Mali. International Family Planning Perspectives,2008,34(2):79–88.

Kamal, S.M. (2012) Childbearing and the use of contraceptive methods among married adolescents in Bangladesh. The European journal of contraception and reproductive health care, 17 (2), 144-154.

Kane, M.M. and Colton, TC. (2005) Integrating SRH and HIV/AIDS services: Pathfinder International's experience synergizing health initiatives. Watertown, Massachusetts, Pathfinder International.

Kelly, C. A., Soler-Hampejsek, E., Mensch, B. S., & Hewett, P. C. (2013). Social desirability bias in sexual behavior reporting: evidence from an interview mode experiment in rural Malawi. International perspectives on sexual and reproductive health, 39(1), 14–21. doi:10.1363/3901413

Kennedy, E.C; Bulu, S; Harris, J; Humphreys, D; Malverus, J. & Gray, N.J. (2013) "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 services research, 13 (1), 1-22.

Khanal, V., Adhikari, M. & Karkee, R. (2013) Social Determinants of Poor Knowledge on HIV among Nepalese Males: Findings from National Survey 2011. Journal of community health, 38 (6), 1147-1156 10p.

Kiapi-Iwa, L. & Hart, G.J. (2004) the sexual and reproductive health of young people in Adjumani district, Uganda: a qualitative study of the role of formal, informal and traditional health providers. AIDS Care, 16 (3), 339-347.

Kilbourne-Broo M, McKay P (1998) Adolescent reproductive health: making a difference. OutLook. 1998; 16(3):1–8 [Online] available at https://path.azureedge.net/media/documents/eol16_3.pdf. (Accessed 23/3/2016)

Kirby, D. B; Laris, B.A; Rolleri, L.A (2007) Sex and HIV Education Programs: Their impact on sexual behaviours of young people throughout the world. J Adolesc Health. 2007 Mar;40(3):206-17.

Klingberg-allvin, M., Tam, V.V. & Nguyen T. N (2007) Ethics of justice and ethics of care Values and attitudes among midwifery students on adolescent sexuality and abortion in Vietnam and their implications for midwifery education: A survey by questionnaire and interview. 44 37-46. International Journal of Nursing Studies 44(1):37-46

Knopf, J. A; Finnie, R. K; Peng, Y; Hahn, R. A; Truman, B. I; Vernon-Smiley, M; Community Preventive Services Task Force (2016). School-Based Health Centers to Advance Health Equity: A Community Guide Systematic Review. *American journal of preventive medicine*, *51*(1), 114–126. 2016.01.009.

Kumi-Kyereme, A., Awusabo-Asare, K. & Darteh, E.K.M. (2014) Attitudes of gatekeepers towards adolescent sexual and reproductive health in Ghana. African journal of reproductive health, 18 (3), 142-153.

Kyei-Nimakoh, M; Carolan-Olah, M; McCann, T.C (2017) Access barriers to obstetric care at health facilities in sub-Saharan Africa—BMC-Systematic Reviews (2017) 6:110 DOI 10.1186/s13643-017-0503-x

Lammers, J; Wijnbergen, S. J; & Willebrands, D. (2013). Condom use, risk perception, and HIV knowledge: a comparison across sexes in Nigeria. HIV/AIDS (Auckland, N.Z.), 5, 283–293. http://doi.org/10.2147/HIV.S31687.

Lince-Deroche, N; Hargey, A; Holt, K & Shochet, T. (2015) Accessing Sexual and Reproductive Health Information and Services: A Mixed Methods Study of Young Women's Needs and Experiences in Soweto, South Africa. African journal of reproductive health; 19 (191), 73-73.

Lloyd CB, (2005). Growing Up Global: The Changing Transition to Adulthood in Developing Countries, Washington, D.C.: National Academies Press.

Lobiondo-Wood G, Haber J. (2013) Nursing research in Canada. Methods, critical appraisal, and utilization. 3rd Canadian edn. Toronto: Elsevier.

Macbeth, D. (2001) 'On "reflexivity" in qualitative research: Two readings, and a third', Qualitative Inquiry, 7(1): 35–68.

Magadi M.A (2017) "Multilevel determinants of teenage childbearing in sub-Saharan Africa in the context of HIV/AIDS", *Health & place*.

Magadi, M.A. & Curtis, S.L. SSRC Applications and Policy Working Paper A03 / 13 Trends and Determinants of Contraceptive Method Choice in Kenya. Stud Fam Plann. 2003 Sep;34(3):149-59.

Manji A, Peña R & Dubrow R (2007) Sex, condoms, gender roles, and HIV transmission knowledge among adolescents in León, Nicaragua: Implications for HIV prevention. AIDS Care. Sep 1;19(8):989–95.

Marrone, G., Abdul-Rahman, L., De Coninck, Z. & Johansson, A. (2014) Predictors of contraceptive use among female adolescents in Ghana. African journal of reproductive health, 18 (1), 102-109.

Mason, L. (2005) 'They haven't a clue!' A qualitative study of staff perceptions of 11–14-year-old female clinic attendees. Primary health care research & development (sage publications, ltd.), 6 (3), 199-207.

Matich. P. A; Harvey B C; Page P, A; Karen, K. A, Clare Jukka, A.C, Jane Hollins A & Sarah LarkinsA (2015) Young people's perceptions of sexual and reproductive health in regional and rural Queensland: capturing the views of adolescents through reference groups and a user-friendly electronic survey. Sexual Health http://dx.doi.org/10.1071/SH13131

Mavedzenge, S, N; Doyle, A & Ross, D (2011) HIV prevention in young people in sub-Saharan Africa: A systematic review J Adolesc Health, 49 (2011), pp. 568-586

McGregor, S. L. T. & Murnane, J. A. (2010) Paradigm, methodology and method: Intellectual integrity in consumer scholarship. International journal of consumer studies, 34 (4), 419-427.

Megabiaw, B. & Awoke, T. (2013) Comprehensive knowledge, attitude and practice of street adults towards human immunodeficiency virus / acquired immune deficiency syndrome (HIV /AIDS) in Northwest Ethiopia. 5 (6), 181-187.

Mills, A. J., Durepos, G., & Wiebe, E. (2010). Encyclopedia of case study research (Vols. 1-0). Thousand Oaks, CA: SAGE Publications, Inc. doi: 10.4135/9781412957397

Mngadi, P.T., Srn, M; B. & Health, D.R. (2008) Health providers' perceptions of adolescent sexual and reproductive health care in Swaziland. 148-156.

Moher D, Liberati A, Tetzlaff J and Altman DG. Preferred reporting items for systematic Reviews and meta-analyses: the PRISMA statement. BMJ-Brit Med J. doi:10.1136/bmj. 2009; b2535.

Moore A (2013) Adults Only? Young People and (Non) Participation in Sexual Decision Making. Edge Hill University. Global Studies of Childhood Volume 3 Number 2 2013 www.wwwords.co.uk/GSCH

Moore, S; & Rosenthal, D. (2006). Adolescence and society. Sexuality in adolescence: Current trends. New York, NY, US: Routledge/Taylor & Francis Group.

Morgan D L. (1997) Focus Group as Qualitative research 2nd ed. Thousand Oaks CA: Sage.

Morris, J.L; & Rushwan, H. (2015) Adolescent sexual and reproductive health: The global challenges, International Journal of Gynecology & Obstetrics, Volume 131, Supplement 1.

Mosley W.H & Chen, L.C (1984) An analytical framework for the study of child survival in developing countries. Population and Development Review 10 (Suppl): 25-45.

MOYA; C. (2002) Advocate for youths; Creating Youth-Friendly Sexual Health Services in Sub-Saharan Africa. [Online] available at https://www.eldis.org/document/A16229. (Accessed 16/6/2019).

Muntean, N; Kereta, W & Mitchell, K.R; (2015) Addressing the Sexual and Reproductive Health Needs of Young People in Ethiopia: An Analysis of the Current Situation. SRH services for Ethiopian youth. African journal of reproductive health, 19 (3).

Murray D.M & Hannan P.J. (1990) Planning for the appropriate analysis in school-based drug-use prevention studies. J Consult Clin Psychol; 58:458-68.

Mutumba, M; Wekesa, E; & Stephenson, R. (2018). Community influences on modern contraceptive use among young women in low and middle-income countries: a cross-sectional multi-country analysis. BMC public health, 18(1), 430. doi:10.1186/s12889-018-5331-y

Nair, M.K.C; Leena, M.L; George, B; Thankachi, Y & Russell, P.S (2013) ARSH 5: Reproductive health needs assessment of adolescents and young people (15-24 y): a qualitative study on 'perceptions of community stakeholders'. Indian journal of paediatrics, 80 Suppl 2 S214-S221.

National Agency for the Control, of AIDS (2014) Federal Republic of Nigeria: Global AIDS Response Country Progress Report. The federal Republic of Nigeria global aids response country progress report Nigeria GARPR 2014 Nigeria, 1-69.

National Population Commission (NPC) [Nigeria] and ICF International. 2014. Nigeria Demographic and Health Survey 2013. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF International.

National Population Commission (NPC) [Nigeria] and, ICF Macro (2009) National Demographic and Health Survey. Nigerian demographic health survey 2008, 187-196.

National Primary Health Care Development Agency. (2012b). National guidelines for the development of a primary healthcare system in Nigeria (4th revised edition). Abuja, Nigeria: National Primary Health Care Development Agency.

National Research Council (US) Working Group (1993) on Factors Affecting Contraceptive Use. Factors Affecting Contraceptive Use in Sub-Saharan Africa. Washington (DC): National Academies Press (US); 1993. 5, Family Planning Programs and Policies. Available from: https://www.ncbi.nlm.nih.gov/books/NBK236398/

United Nations Children's Fund (UNICEF) (2011) Adolescence an age of opportunity [Online] Available at

https://www.unicef.org/adolescence/files/SOWC_2011_Main_Report_EN_02092011.pdf. (Accessed 23/10/2015).

NDHS (2008) National Population Commission (NPC) [Nigeria] and ICF Macro, author. Nigeria Demographic and health survey 2008. Abuja, Nigeria: National Population Commission Nigeria and ICF Macro; 2009 NDHS 2008; ICF 2009

Ndyanabangi, B and Diesfeld, H, (2004) Reproductive Health Behaviour among In-School and

Out-of-School Youth in Kabarole District, Uganda African. African Journal of Reproductive Health;

8[3]:55-67. Acta Obstet Gynecol Scand. 2012 Sep;91(9):1114.

Neal S; Matthews Z; Frost M; Fogstad H; Camacho A.V; Laski L (2012) Childbearing in adolescents aged 12-15 years in low resource countries: a neglected issue. New estimates from demographic and household surveys in 42 countries.

Newmann, S.J; Rocca, C.H; Zakaras, J.M. (2016) Does integrating family planning into HIV services improve gender-equitable attitudes? Results from a randomized cluster trial in Nyanza. Kenya AIDS Behav; 20: 1883–1892.

Ngome, E; Odimegwu, C; Adedini, S; Ononokpono, D; Imasiku, E; Elwange, B & DeWet, N (2012) Determinants of Condom Use among Adolescents in Botswana (p. 15). Retrieved from paa2012.princeton.edu/papers/12156.

Nigeria Demographic and Health Survey (2013) National Population Commission Federal Republic of Nigeria Abuja, Nigeria ICF International Rockville, Maryland, USA.

Federal Ministry of Health (2013) Nigeria. Demographic and health survey. Abuja, Nigeria, 1-566.

Nwokolo N, McOwan A, Hennebry G, Chislett L and Mandalia S. Young people's views on the provision of sexual health services. Sexually Transmitted Infections. 2002;78(5):342-345. doi:10.1136/sti.78.5.342.

Obare, F., Birungi, H., Undie, C., Wanjiru, M., Liambila, W. & Askew, I. (2011) Levels, trends and determinants of contraceptive use among adolescent girls in Kenya [Online]Available at https://pdfs.semanticscholar.org/f25b/3d7d0c69e390a7e9c1f3135bcba902259a44.pdf(13/12/2015).

Ochako, R; Ulwodi, D; Njagi, P; Kimetu, S. & Onyango, A. (2011) Trends and determinants of Comprehensive HIV and AIDS knowledge among urban young women in Kenya. AIDS research and therapy, 8 (1), 11-11.

Oginni A. B; Ahonsi B. A and Adebajo S (2015) Trend and Determinants of Unmet Need for Family Planning Services among Currently Married Women and Sexually Active Unmarried Women Aged 15-49 in Nigeria. African Population Studies Vol. 29, No. 1, 2015.

Ogunfowokan A. A & Fajemilehin B.R (2015) Experiences of sexual abuse by adolescent girls in Ife/Ijesa zone, Nigeria. Nigeria Journal of Health Sciences. Volume: 15 | Issue Number: 2 | Page: 89-97.

Ogunrotifa A. B (2012) millennium development goals in Sub-Sahara Africa: a critical assessment. Radix international journal of research in social science. Volume 1, Issue 10.

Okezie C. A; Ogbe A.O & Okezie C.R (2010) Socio-economic determinants of contraceptive use among rural women in Ikwuano Local Government Area of Abia State, Nigeria. International NGO Journal Vol. 5(4), pp. 74-77.

Okonkwo, A., & Okonkwo, U. (2010). Patent medicine vendors, community pharmacists and STI management in Abuja, Nigeria. African Health Sciences, 10(3), 253–265.

Okonofua F.E; Odimegwu C; Ajabor H; Daru, P.H & Johnston A. (1999) Assessing the Prevalence and Determinants of Unwanted Pregnancy and Induced Abortion in Nigerian. Stud Fam Plann. 1999 Mar;30(1):67-77.

Oljira, L., Berhane, Y., & Worku, A. (2013). Assessment of comprehensive HIV/AIDS knowledge level among in-school adolescents in eastern Ethiopia. *Journal of the International AIDS Society*, *16*(1), 17349. doi:10.7448/IAS.16.1.17349

Olle L. (2004) Medical Responses to Adults who have experienced Sexual Assault. Royal Australian and New Zealand College of Obstetrics and Gynecology.

Olumide, A.O. & Ojengbede, O.A. (2016) the media as a critical determinant of the sexual and reproductive health of adolescents in Ibadan, Nigeria. Sexual & reproductive HealthCare, 8 63-74 12p.

Omobuwa O.; Asekun-Olarinmoye E. O. & Olajide F. O. (2012) Knowledge and perception of reproductive health services among in-school adolescents in Ile-Ife, Osun State, Nigeria. Journal of Medicine and Medical Sciences Vol. 3(7) pp. 481-488, July 2012

Onokerhoraye, A.G & Dudu J. E (2017) Perception of Adolescents on the Attitudes of Providers on Their Access and Use of Reproductive Health Services in Delta State, Nigeria. Scientific research; An academic publisher. Vol.9 No.1, January 2017

Orach C.G; Otim G; Aporomon J.F; Amone. R, Okello, S.A; Odonngkara B, & Komakech H (2015). Perceptions, attitude and use of family planning services in post-conflict Gulu district, northern Uganda. BMC; Conflict and Health; 9:24. https://doi.org/10.1186/s13031-015-0050-9.

Orji, E.O. & Onwudiegwu, U. (2002) Prevalence and determinants of contraceptive practice in a defined Nigeria population. J Obstet Gynaecol. Sep; 22(5):540-3.

Orr, K; & Bennett, M. (2009) 'Reflexivity in the co-production of academic-practitioner research', Qualitative Research in Organizations and Management: An International Journal, 4(1): 85–102.

Oyediran K.A; Feyisetan O.I; Akpan, T. (2011) Predictors of condom use among young never-married males in Nigeria. J Health Popul Nutr. 2011 Jun;29(3):273-85.

Oyedokun, A.O (2007) Determinants of Contraceptive Usage: Lessons from Women in Osun State, Nigeria. Journal of Humanities and social sciences Volume 1, Issue 2.

Oyefabi, A. O; Nmadu, A.G; Yusuf, M.S. Prevalence, perceptions, consequences, and determinants of induced abortion among students of the Kaduna State University, Northwestern Nigeria. JM ed Trop; 2016 18-86-92.

Özdemir, A; Utkualp, N & Palloş, A (2016) Physical and Psychosocial Effects of the Changes in Adolescence Period. International Journal of Caring Sciences May– August 2016 Volume 9.

Parkes, A; Wight, D; Researcher, S; Henderson, M; Researcher, S; Parkes, C.A; Social, M.R.C., Health, P., Unit, S. & Gardens, L. (2004) Teenagers use of sexual health services: perceived need, knowledge and ability to access. Journal of Family Planning and Reproductive Health Care; 30(4): 217–224.

Patton, G. C; Coffey, C; Sawyer, S. M; Viner, R. M; Haller, D. M; Bose, K; Vos, T; Ferguson, J. & Mathers, C. D. (2009) Global patterns of mortality in young people: a systematic analysis of population health data. Lancet 374, 881-892.

Patton, M. Q. (1990). Designing qualitative studies [excerpt: Purposeful sampling]. In Qualitative research and evaluation methods (2nd ed., pp. 169-186). Beverly Hills, CA: Sage.

Payne, G., & Payne, J. (2004) Reflexivity; Sage key Concepts: Key concepts in social research (pp. 191-195). London: SAGE Publications, Ltd doi: 10.4135/9781849209397

Petre. M. & Rugg. G. (2010) The Unwritten Rules of PhD Research Open Up Study Skills. Berkshire: Open University Press

Phillips EM & Pugh DS (2010) How to get a PhD: A Handbook for Students and Their Supervisors. Fifth edition. Open University Press, Maidenhead.

Pinheiro, J.C. and Bates, D.M. (2000). Mixed-Effects Models in S and S-PLUS, Springer.

Pitts M, Burtney E & Dobraszczyc U (1996) There is no shame in it anymore: how providers of sexual health advice view young people ' s sexuality; 11 1-9.

Plano Clark, V. L. & Creswell, J. W. (2008) the mixed methods reader Los Angeles, Calif.; London: Sage Publications.

Population Council of Kenya (2011) “Reproductive Health Output-Based Aid (OBA) Voucher Program” accessed at www.rhvouchers.org/kenya/, on June 14,

Population Reference Bureau (2018): The Youth Family Planning Policy score card [Online] available at

https://www.prb.org/wp-content/uploads/2017/03/Youth_FP_Policy-Scorecard_Final_May_2018.pdf. Accessed (28/01/2019)

Price N.L & Hawkins, K. (2007) A conceptual framework for the social analysis of reproductive health. J Health Popul Nutr; 25(1):24-36.

Prion S & Adamson, K. A (2014) Making Sense of Methods and Measurement: Rigor in Qualitative Research. Clinical Simulation in Nursing;10, e107-e108

Public Health England and Department of Health and Social Care (2018) Integrated Sexual Health Services: A suggested national service specification [Online] Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/731140/integrated-sexual-health-services-specification.pdf. (Accessed 19/01/2019).

Radovich E; Dennis M; Wong K; Ali M; Lynch C; Cleland J; Owolabi O; Lyons-Amos M & Benova L. (2018) Who meets the contraceptive needs of young women in sub-Saharan Africa? Journal of Adolescent Health; 2018 62(3): 273-280.

Rahman MM, Kabir M, Shahidullah M. (2009) Adolescent knowledge and awareness about AIDS/HIV and factors affecting them in Bangladesh. J Ayub Med Coll Abbottabad. 21(3):3–6.

Rasbash, J; Steele, F; Browne, W.J. & Goldstein, H. (2009) A User's Guide to MLwiN, v2.10. Centre for Multilevel Modelling, University of Bristol. (Chapter 9).

Rasbash, R (2018) What are multilevel models and why should I use them? Centre for multilevel modelling. [Online] Available at http://www.bristol.ac.uk/cmm/learning/multilevel-models/what-why.html. Accessed 06/3/2019).

Reddy, D.M; Fleming, R. & Swain, C. (2002) Effect of Mandatory Parental Notification on Adolescent Girls' Use of Sexual Health Services. Journal of the American Medical Association, 288, 710-714. https://doi.org/10.1001/jama.288.6.710.

Reifsnider, E; Gallagher, M & Forgione, B (2005) "Using ecological models in research on health disparities," Journal of Professional Nursing, vol. 21, no. 4, pp. 216–222. Reprinted in Bull WHO; 81(2): 140-148.

Rodriguez G, Goldman N. (1995) Assessment of Estimation Procedures for Multilevel Models with Binary Responses. Journal of the Royal Statistical Society Series A (Statistics in Society). 1995;158(1):73-89.

Rogers, J; Augustine, J., and Alford, S. (2005) Integrating efforts to prevent HIV, other sexually transmitted infections, and pregnancy among teens. Issues at a Glance. Washington, D.C., Advocates for Youth, Jan.

Rosen, J.E., Murray, N.J. and Moreland, S. (2004) Sexuality Education in Schools: The International Experience and Implications for Nigeria. Policy Working Paper, No. 12, USAID, Abuja.

Rubin H.J & Rubin IS (1995) Qualitative interviewing: the art of hearing data. Thousand Oaks, CA: Sage.

Rubin, S.E; Davis K & Mckee M.D (2013) Long-Acting Reversible Contraception to Adolescents. J Prim Care Community Health. July 1; 4(3): 216–219.

Rubin, S.E., Campos, G. & Markens, S. (2012) Primary Care Physicians Concerns May Affect Adolescents Access to Intrauterine Contraception. 2010-2013.

Sahile, Z., Mekuria, M. & Yared, A. (2015) Comprehensive HIV/AIDS Knowledge and Sexual Behavior among University Students in Ambo, Central Ethiopia: Implication to Improve Intervention. Journal of sexually transmitted diseases, 2015 890202-890202.

Salam, R. A; Faqqah, A; Sajjad, N; Lassi, Z. S; Das, J. K; Kaufman, M., & Bhutta, Z. A. (2016). Improving Adolescent Sexual and Reproductive Health: A Systematic Review of Potential Interventions. The Journal of adolescent health: official publication of the Society for Adolescent Medicine, 59(4S), S11-S28.

Salazar, L. F; Erin L. P; Bradley, S.N; Younge, S N; Nichole A; Daluga, R. A. Crosby, Delia L. L & Ralph J. Di Clemente (2009) Applying ecological perspectives to adolescent sexual health in the United States: rhetoric or reality. Health education research.

Salehi, R; Hynie, M. & Flicker, S. (2014) Factors associated with access to sexual health services among teens in Toronto: does immigration matter? Journal of immigrant and minority health/center for minority public health, 16 (4), 638-645.

Santhya K.G & Jejeebhoy S.J (2015) Sexual and reproductive health and rights of adolescent girls: Evidence from low- and middle-income countries. Global Public Health, 2015, vol. 10(2):189–221, doi:10.1080/17441692.2014.986169.

Sedgh G; Hussain, R; Bankole A & Singh S (2008) Women with an unmet need for contraception in developing countries and their reasons for not using a method, Occasional Report, New York: Guttmacher Institute, No. 37.

Seex J. (1996) Making space for young men in family planning clinics. Reproductive Health Matters; 7:111–14.

Shahhosseini, Z. & Abedian, K. (2015) Poster Walk Session Child and Adolescent Psychiatry, Mental Retardation part 2 Female Adolescents' Reproductive Health Education Needs: Perspectives' of Health Care Providers. European Psychiatry, 30 579-579.

Shaw, D (2009) Access to sexual and reproductive health for young people: Bridging the disconnect between rights and reality. International Journal of Gynecology and Obstetrics 106; 132–136.

Sia, D; Onadja, Y; Nandi, A; Foro, A & Brewer, T, (2014) What lies behind gender inequalities in HIV/AIDS in sub-Saharan African countries: evidence from Kenya, Lesotho and Tanzania, Health Policy and Planning, Volume 29, Issue 7, Pages 938–949, https://doi.org/10.1093/heapol/czt075.

Siddiqui, O; Hedeker, D; Flay, B.R & Hu, F.B. (1996). Intra-class correlation estimates in a school-based smoking prevention study: Outcome and mediating variables, by sex and ethnicity. Am J Epidemiology 144(4):425-33.

Smith, J; Flowers, P; & Larkin, M. (2009). Interpretive phenomenological analysis: Theory, method and research. Thousand Oaks, CA: Sage.

Snape, D. & Spencer, L. (2003) the Foundations of Qualitative Research. Qualitative research practice: A guide for social science students and researchers, 2-10.

Somefun, O.D (2019) Religiosity and sexual abstinence among Nigerian youths: does parent religion matter? BMC Public Health. 19:416 https://doi.org/10.1186/s12889-019-6732-2

Song, M; Sandelowski, M. & Happ, M. (2010). Current practices and emerging trends in conducting mixed methods intervention studies in the health sciences. In Tashakkori, A., & Teddlie, C. *SAGE handbook of mixed methods in social & behavioral research* (pp. 725-748). Thousand Oaks, CA: SAGE Publications, Inc.

Sonia S (2018) The Effects of Education, Poverty, and Resources on Family Planning in Developing Countries. Clinics Mother Child Health 15: 289. doi:10.4172/2090-7214.1000289

Steele F (2008) Introduction to multilevel modelling concepts. Centre for multilevel modelling. A User's Guide to MLwiN, v2.10. Centre for Multilevel Modelling, University of Bristol.

Stephenson, R; Baschieri, A; Clements S, Hennink, M; Madise N (2007) Contextual Influences on Modern Contraceptive Use in Sub-Saharan Africa. Am J Public Health. 97:1233–1240.

Stokols, D (1996) Translating social, ecological theory into guidelines for community health promotion," American Journal of Health Promotion, vol. 10, no. 4, pp. 282–298,

Swenson, R. R., Rizzo, C. J., Brown, L. K., Vanable, P. A., Carey, M. P., Valois, R. F., Romer, D. (2010). HIV knowledge and its contribution to sexual health behaviors of low-income African American adolescents. Journal of the National Medical Association, 102(12), 1173–1182. doi:10.1016/s0027-9684(15)30772-0.

Sychareun V. (2004) Meeting the Contraceptive Needs of Unmarried Young People: Attitudes of Formal and Informal Sector Providers in Vientiane Municipality, Lao PDR. Reproductive Health Matters. Reproductive Health Matters;12(23):155–165

Sychareun, V; Vongxay, V; Houaboun, S; Thammavongsa, V; Phummavongsa, P; Chaleunvong, K; Durham, J (2018) Determinants of adolescent pregnancy and access to reproductive and sexual health services for married and unmarried adolescents in rural Lao PDR: a qualitative study. BMC Pregnancy Childbirth. Jun 8;18(1):219. doi: 10.1186/s12884-018-1859-1.

Tashakkori, A. &Teddlie, C. (1998) Mixed methodology: Combining qualitative and quantitative approaches Thousand Oaks, Calif.: Sage.

Tashakkori, A. &Teddlie, C. (2003) Handbook of mixed methods in social & behavioural research Thousand Oaks, Calif.: Sage.

Tashakkori, A. & Teddlie, C. (2010) Sage handbook of mixed methods in social &behavioral research Thousand Oaks, Calif.; London: Sage.

Teddlie, C. & Tashakkori, A. (2009) Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioural sciences Los Angeles, Calif.; London: Sage.

Teddlie, C. (2016) SAGE handbook of mixed methods in social & behavioral research pragmatism and the philosophical foundations of mixed methods Research.

Temin BMJ, Okonofua FE, Omorodion FO, Renne EP, Coplan P, Heggenhougen HK and Kaufman J. (1999) Perceptions of Sexual Behavior and Knowledge Adolescents in Benin City, Nigeria. International Family Planning Perspectives, 25(4):186–190 and 195.

Tenkorang E. Y; Rajulton F; Eleanor Tyndale-Maticka (2009) Perceived Risks of HIV/AIDS and First Sexual Intercourse among Youth in Cape Town, South Africa. AID behaviour, 13: 234-245. 10.1007/s10461-008-9470-5.

Teshome, R. & Youjie, W. (2016a) Comparison and Association of Comprehensive HIV/AIDS Knowledge and Attitude towards people Living with HIV/AIDS among Women Aged 15- 49 in Three East African Countries: Burundi, Ethiopia and Kenya. Journal of AIDS & clinical research, 07 (04), 4-11.

The Federal Republic of Nigeria (2008) National HIV / AIDS and Reproductive Health Survey FEDERAL REPUBLIC OF NIGERIA.

The National Population Commission Federal Republic of Nigeria and ICF International Rockville, Maryland, USA (2013). Nigeria Demographic and Health Survey.

Thomas, D. & Hodges, I. D. (2010) Designing and managing your research project: Core skills for social and health research. Sage. Los Angeles.

Thomas, D. R; (2003) A general inductive approach for qualitative data analysis. School of the Population Health University of Auckland. Available [Online] at http://www.frankumstein.com/PDF/Psychology/Inductive%20Content%20Analysis.pdf

Tilahun M; Mengistie, B; Egata, G & Reda A.A. (2012) Health workers' attitudes toward sexual and reproductive health services for unmarried adolescents in Ethiopia. BMC Reproductive Health; 9 19-19.

Toth and Toth (2010) “The Right Messages—to the Right People—at the Right Time,” World Vision India Flexible Fund Case Study, accessed at www.flexfund. Org, on Jan. 25, 2010.

U, M.C.I. & Bicetre, L.K. (2009) Trends and determinants of reproductive health service use among young women in the United States. Contraception, 80 (2), 224-224.

Udegbe, B.I; Fayehun, F; Uche C. Isiugo-Abanihe U.C; Nwagwu, W; A and Nwokocha. E. (2015) Evaluation of the Implementation of Family Life and HIV Education Programme in Nigeria. African Journal of reproductive health. 2015 Jun;19(2):79-93.

Ulin, P. R; Robinson, E. T &Tolley, E. E. (2005) Qualitative methods in public health: A field guide for applied research San Francisco, Calif.: Jossey-Bass.

UNAIDS (2019) Expanded data collection and analysis provides better understanding of HIV epidemic in Nigeria [Online] Available at https://www.unaids.org/en/resources/presscentre/pressreleaseandstatementarchive/2019/march/20190314_nigeria. (Accessed 14/06/2019).

UNAID (2017) Ending AIDS: progress towards the 90–90–90 targets – global AIDS update. Geneva [Online] available at https://www.unaids.org/en/resources/documents/2017/20170720_Global_AIDS_update_2017 (Accessed 17/06/2019).

Underhill, K; Operario, D & Montgomery, P (2007) Systematic review of abstinence-plus HIV prevention programs in high-income countries PLoS Med, 4 (2007), p. e275 CrossRef

UNESCO (2018) International Technical Guidance on Sexuality Education: An Evidence-Informed Approach. Revised edition ed. Paris, France:

UNFPA (1995). International conference on population and development (ICPD-Cairo 1994)-programme of action. New York: UNFPA.

UNICEF (2017) Quality Education in Nigeria. Available [Online] at https://www.unicef.org/nigeria/education.html. Accessed (07/01/2018).

UNICEF (2017) HIV/AIDS. [Online] available at https://www.unicef.org/nigeria/children_1940.html (Accessed 17 July, 2017).

United Nations (1999) Resolution Adopted by the General Assembly: Key actions for the further implementation of the programme of action of the International Conference on Population and Development.

United Nations (2018) Sustainable Development Goals [Online] Available at https://www.un.org/sustainabledevelopment/health/ (Accessed 27/01/2019).

United Nations Children's Fund (2013) Towards an AIDS-free Generation-Children and AIDS: Sixth Stocktaking Report, 2013. New York, NY.

United Nations Economic Commission for Africa, (2017): Country Profile – Nigeria. [Online] Available at https://www.uneca.org/sites/default/files/uploaded- documents/Country Profiles/2017/nigeria_cp_eng.pdf. (Accessed 08/02/2019).

United Nations Educational, Scientific and Cultural Organization; (2018). Revised edition: international technical guidance on sexuality education – an evidence-informed approach. Paris.

United Nations General Assembly Special Session (UNGASS) Declaration of Commitment in (2010). Progress made in the implementation of the Declaration of Commitment on HIV/AIDS and the Political Declaration on HIV/AIDS. Report of the Secretary-General.

United Nations Joint Programme on AIDS (2014) The Gap Report. [Online] Available at http://files.unaids.org/en/media/unaids/contentassets/documents/unaidspublication/2014/UNAIDS_Gap_report_en.pdf (Accessed 12/02/2018)

United Nations Population Fund (2015) The Qualitative Study on Assessing Supply Side Constraints Affecting the Quality of Adolescent Friendly Health Services and the barriers for Service Utilization in Nepal. Available [Online] at http://nepal.unfpa.org/sites/default/files/pub-pdf/AFHS%20Report.pdf. (Accessed 14/06/2018).

United Nations Population funds (2016) Universal access to reproductive health: Progress and challenges. New York, NY 10158.

United Nations Population funds, (2014) Global Launch of the Opportunity in Crisis Report 'Preventing HIV from Early Adolescence to Early Adulthood.

United Nations (1994) International Conference on Population and Development. [Online] Available at https://www.un.org/en/development/desa/population/events/pdf/expert/27/SupportingDocuments/A_CONF.171_13_Rev.1.pdf. (Accessed 17/06/2019).

United Nations' Children Fund (2017) HIV/AIDS. Available [Online] at https://www.unicef.org/nigeria/children_1940.html. (Accessed 17 July, 2017).

United Nations (2015) The Millennium Development Goals Report 2015 [Online] Available at https://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20Summary%20web_english.pdf. (Accessed 2/5/2019).

USAID (2015) Urban Adolescent Sexual and Reproductive Health Social and Behavior Change Communication: Capacity [ONLINE] Available at https://healthcommcapacity.org/wp-content/uploads/2016/06/Urban-Adolescent-Kit-Final.-9.23.15.pdf. (Accessed 3/12/2018)

Utomo, I.D & McDonald P (2009) Adolescent reproductive health in Indonesia: contested values and policy inaction, Studies in Family Planning, 40(2):133–146.

Waddington C & Egger D (2008) Integrated Health Services—What and Why? Geneva: World Health Organization.

Warenius, L.U; Faxelid, E.A; Chishimba, P.N; Musandu, J.O; Ong'any, A.A & Nissen, E.B. (2006) Nurse-midwives' attitudes towards adolescent sexual and reproductive health needs in Kenya and Zambia. Reproductive health matters, 14 (27), 119-128 10p.

WHO (2001) Global Consultation on Adolescent Friendly Health Services. A consensus statements. World health, 7-9.

WHO (2006) Reproductive Health Indicators Reproductive Health and Research Guidelines for their generation, interpretation and analysis for global monitoring (online available at http://apps.who.int/iris/bitstream/handle/10665/43185/924156315X_eng.pdf?sequence=1 (Accessed 28/11/2018).

WHO (2009) Quality Assessment guide book. A guide to assessing health services for adolescent clients. [Online] available at http://apps.who.int/iris/bitstream/handle/10665/44240/9789241598859_eng.pdf?sequence=1.

WHO (2011) Sexual and reproductive health core competencies in primary health care. Geneva: World Health Organization;

World Health Organization (2014) Maternal, newborn, child and adolescent health. Adolescent pregnancy [Online] Available at http://www.who.int/maternal_child_adolescent/topics/maternal/adolescent_pregnancy/en/ (Accessed 22/ 01/2020).

WHO (2017) Violence prevention Alliance: The ecological framework [Online) available at http://www.who.int/violenceprevention/approach/ecology/en/ (Accessed 2/4/2019)

WHO (2017) Global Accelerated Action for the Health of Adolescents (AA-HA!): Guidance to support country implementation. Geneva: WHO [Online] Available at https://apps.who.int/iris/bitstream/handle/10665/255415/9789241512343-eng.pdf?sequence=1 (Accessed 28/6/2019).

WHO (2018) What works to improve young people's sexual and reproductive health [ONLINE] Available at http://www.who.int/reproductivehealth/topics/adolescence/what-works-ASRHR/en/. (Accessed 13/9/2018).

Huaynoca, S., Chandra-Mouli, V., Yaqub Jr, N., Denno, D. M., Svanemyr, J., Baig, Q. & Chandra-Mouli, V. (2014) Scaling up comprehensive sexuality education in Nigeria: From national policy to nationwide application. Sex education, 14 191-209.

Wang, W, Soumya A, and Shanxiao W (2012). HIV-Related Knowledge and Behaviors among People Living with HIV in Eight High HIV Prevalence Countries in Sub-Saharan Africa. DHS Analytical Studies No. 29. Calverton, Maryland, USA: ICF International.

Willig, C. (2001) Introducing Qualitative Research in Psychology. Maidenhead: Open University Press.

Wisdom, J. & Creswell, J. W. (2013) Mixed methods: Integrating quantitative and qualitative data collection and analysis while studying patient-centred medical home models. PCMH research methods series, (13-0028), 1-5.

Woog V; Singh S; Browne A; Philbin J (2015) Adolescent women's need for and use of sexual and reproductive health services in developing countries. New York: Guttmacher Institute.

Word Bank Development Research Group (2017) Data are based on primary household survey obtained from government statistical agencies and World Bank country department. Data for high income economies are from the Luxembourg income Study database.

World Bank Annual report (2013). End Extreme Poverty and promote shed prosperity. Available [Online] at http://siteresources.worldbank.org/EXTANNREP2013/Resources/9304887-1377201212378/9305896-1377544753431/1_AnnualReport2013_EN.pdf. (accessed 13/2/2018).

World Health Organisation (2011) Universal access to reproductive health: Accelerated actions to enhance progress on Millennium Development Goal 5 through advancing Target 5B; Dept. of Reproductive Health and Research.

World Health Organisation (2011) Universal access to reproductive health Accelerated actions to enhance progress on Millennium Development Goal 5 through advancing Target 5B.

World Health Organization (2002) Adolescent Friendly Health Services: An Agenda for Change. Geneva: WHO;

World Health Organization (2006) Reproductive Health and Research and Child and Adolescent Health and Development departments. Policy brief 4 – Implementing the reproductive health strategy. Geneva, World Health Organization,

World Health Organization (2010): Sexual and Reproductive Health [Onlne] available at http://www.who.int/reproductivehealth/. (Accessed 12/01/ 2019).

World Health Organization (2014) Adolescent pregnancy. Fact sheet No. 364. September. http://www.who.int/mediacentre/factsheets/fs364/en/; (Accessed January 11, 2016)

World Health Organization; (2010). Developing sexual health programmes: a framework for action. Geneva:

World Health Organization (2011) Unsafe Abortion: Global and Regional Estimates of the Incidence of Unsafe Abortion and Associated Mortality in 2008, Geneva.

World Health Organization; (2013) Global and regional estimates of violence against women: prevalence and health effects of intimate partner violence and non-partner violence. Geneva:

WHO (2019) Maternal, newborn, child and adolescent health [Online] Available at https://www.who.int/maternal_child_adolescent/topics/adolescence/development/en/. (Accessed 3/02/2019).

Yadav, J., Gautam, S. & Singh, K.J. (2015a) Differential in awareness and comprehensive knowledge of HIV / AIDS and its determinants among youth in India: A population-based cross-sectional study. 222-230. York, NY: Freeman.

Zainiddinov, H. & Habibov, N. (2016) Trends and predictors of knowledge about HIV/AIDS and its prevention and transmission methods among women in Tajikistan. The European journal of public health, ckw077-ckw077.

# Appendices

## *Appendix* 1: In-Depth Interview Guide

Thank you for agreeing to be part of this interview. I appreciate your willingness to participate. The reason for this in-depth interview is to "explore your view on the challenges young people face in accessing and utilising sexual health services and what you think could be done to improve services."

**Introduction (Ice breaker)**

Please describe your role at this facility

Prompts: What kinds of services do you provide in this facility? Which of these do you provide to young people? Do you have more of boys or girls coming to this facility?

***RQ1:*** **Sexual Health concerns of adolescents**

What do you think are the most common health needs/concerns of young people?

Boys....

Girls...

Where do they go for advice or care for these problems?

Prompts: Why do you think they seek advice or care from these places?

How often do young people seek advice or care at this facility?

Do you think sexuality education should be provided to young people and why?

**RQ2 Barriers to accessing services**

In your opinion, do you think young people can easily access the services provided at this facility?

Prompts: Why / why not?

Are there certain groups of young people who don't use this service?

What do you think are the main reasons why young people are not accessing sexual health services like contraceptives and HIV services or other sexual health services in your clinic?

Are there any policies or guidelines at this facility that restrict young people's access to services based on age?

**RQ3 Experiences of providing Sexual health services**

How confident do you feel providing SRH services to young people?

Why?

What would help make you more confident?

Are there any types of services that you don't feel comfortable providing to young people?

If yes, what are they and why do you feel uncomfortable about them?

What will help you be more comfortable?

Do you think unmarried young people should be able to access condoms/abortion services? Why/why not?

Do you think young people should receive SRH counselling and services without their parental consent? Why / why not?

At what age do you think young people should be able to attend a health facility by themselves? Why do you say that?

Are you aware of any policies or guidelines at this facility concerning confidentiality for young people? If yes, please describe these

How do you think young people want to be treated when they come here for sexual health information or services?

What knowledge and skills do you think a service provider needs to be able to provide SRH services and counselling to young people?

**RQ4 Service improvement/enablers of service use**

In your experience, what has been successful / worked well in delivering young people friendly services? Why?

What are the main challenges you have faced providing services to young people?

In your opinion, what could be done to address these challenges?

What do you think are the most important factors that make a health facility 'youth friendly'?

What training have you received about providing sexual and reproductive health services?

Is there anything else you would like to say about providing young people with youth-friendly services?

Additional questions:

Describe the process young people go through when they come for sexual health services?

Is there any sexual health programme going on in the community?

What are the reasons why adolescents use of contraceptives have not improved since 2003?

Why is contraceptive knowledge stalled since 2008 in Nigeria?

We have come to the end of the interview. Thanks for your invaluable time and information.

## *Appendix* 2: *Focus* Group Discussion Guide

Thank you for agreeing to be part of the focus group discussion. I appreciate your willingness to participate. The reason for this focus group discussion is to "understand the challenges young people face in accessing sexual health services and how they would want the services to be delivered". You serve as the mouthpiece of all your peers who are not here. We need your opinion and want you to share your honest thoughts with us (Ground rules). See the information sheet.

Introduction

How did you get here? Did you find it difficult locating this place?

**RQ1: Sexual health concerns/Health seeking behaviour**

1. What are the main health concerns of young people like you?
2. Where do young people like you go for information or advice regarding these issues?
    - Do you think these are good sources of information or advice for young people? Why?
    - Where and from whom would you prefer to get advice about the concerns you have mentioned earlier? why
    - If a young person has a health problem, where / from whom would he/she seek care? Why?

**RQ2: Experiences of service use**

1. Do you know any young person accessing care related to sexual and reproductive health services or advice? If yes, can you tell me about their experience?
2. What type of services do young people seek for?
3. Has any young person you know accessed sexual health information through mass media and My Question database?
4. Why do young people prefer these sources ("My Question database as their source of sexual health information)?
5. Do you think this platform is helpful for young people?
6. What do young people like most/hate about the services? (Prompts: Explain about confidentiality, treat you with respect, make you feel comfortable, Explain things clearly. Give you enough time and listened to your concerns? etc.)
7. Would you return to that facility? Why/why not?

8. Would you recommend it to your friends?
9. Do you know of any services in this locality that are for young people?

**RQ3: Barriers and enablers of service use**

10. In your opinion, what are the main challenges or reasons that make it difficult for young people to access health services? Like contraceptives, counselling, HIV testing

Prompts: finance, location, lack of knowledge of services, cultural, service providers attitude etc.

11. What do you think are the most critical factors that make a health facility "youth-friendly"?
12. Do young people want their parents to be notified when they access services?
13. Do young people want to be allowed to obtain abortion services and why?
14. Do young people want sexuality education to be provided to them? Why
15. What are the things young people want to be done to improve their use of sexual health services?

    Additional questions:

    - Have you or any of your friends been involved in the design of sexual health programmes?
    - What do you think about the location of SRH care facilities?
    - Describe the experience of young people like you in using SRH services?
    - What are the reasons why young people prefer private clinic to government/public clinic?

## *Appendix* 3: Participant information sheet for service providers

**Introduction**

Many thanks for your potential interest in this study. My name is Franklin Onukwugha, a Nigerian but currently doing my PhD at the University of Hull United Kingdom. I have worked here in Abuja at Kwali community health centre before travelling to the UK. I guess many community health workers will know me because I have done many outreach programmes with them. I am inviting you to take part in my current study, which is looking at the views and perceptions of service providers in relation to young people's access and use of sexual and reproductive health services in Nigeria. Service providers, I mean anyone who provides sexual health information or services to young people.

**Background**

The purpose of this study is to understand the challenges young people face in accessing sexual health services and how they would want the services to be delivered. Especially, to understand the views of young people and service providers on the use of sexual health services. This study depends on data collected via In-depth interviews. The interview will be conducted among service providers. Each interview will last approximately an hour

**Your right in this study**

You are free to withdraw at any stage of the interview before the recording starts without taking permission or given a reason. Your involvement in this study is entirely voluntary. It is up to you whether to take part or not. If you consider taking part, you will be asked for oral as well as written consent, which you can find at the bottom of this information sheet.

**What do I gain from the study?**

There are no direct benefits for taking part in this study except for the light refreshments and travel reimbursement that will be made available for all the participants. However, the outcome of the study is hoped to be used in developing sexual health services in the country, which will invariably benefit all.

**What is the risk involved in taking part in the study?**

There is no serious risk to self in taking part in the study; however, some sensitive issues are likely to be discussed which may be quite irritating and uncomfortable. But you are free to discontinue at any stage of the study, and this will not be held against you.

**Confidentiality**

The data gathered from the interview and FGDs will be securely stored in a private computer. Only the researcher will have access to this information and access will be password protected. All the results of this study may be used for other scholarly

activities like publication in a reputable journal. However confidentiality and anonymity will be assured at all times.

Thanks once again for your time. You are appreciated.

If you need further information regarding the study, please do not hesitate to contact Franklin Onukwugha on Email: f.i.onukwugha@2015.hull.ac.uk

This study has the full approval of the Research Committee of the School of Education and Social Sciences, University of Hull UK and the National Health Research Ethics Committee of Nigeria (NHREC). Please if you wish to take part in this study, you can sign the consent form below and return it to me. In case you need more time to think about it, you can contact me on the above email address or my local phone no: 08099110595 when you decide.

**Statement of Consent:**

I have read the above information, and I feel I understand the study well enough to make a decision about my involvement. By signing below, I am indicating my consent to participate in this study, and understand that I am agreeing to the terms described above.

Name……

Signature & date……

Contact details ……

## *Appendix* 4: Parents/*guidance* consent form for minors aged 10-15

**Introduction**

My name is Franklin Onukwugha, a Nigerian but currently doing my PhD at the University of Hull United Kingdom. I have worked here in Abuja at Kwali community health centre before travelling to the UK. I guess many community members may know me. I am inviting your child to take part in my current study, which is looking at the challenges young people face in accessing sexual and reproductive health services in Nigeria. So, we need young people who can share with us in a focus group discussion the views of their friends on sexual health services.

**Background:**

This study is designed to understand the challenges adolescent face in accessing sexual health services and how they would want the services to be delivered. Also, trying to understand the views of young people towards the use of sexual health services. This study depends on data collected via focus group discussion (FGDs). The focus group discussion will be conducted among adolescents aged 10-19 years.

**Procedure**

For your child to take part in this study, he/she must provide a signed copy of this parent consent form. If you agree for your child to take part in the study, he/she will join other young people in a group of 8-10 people to discuss issues around adolescent sexual and reproductive health. Each FGD will last approximately an hour.

**Your child right in this study**

Your child is free to withdraw at any stage of the focus group discussion before or after the recording starts without taking permission or given reason. Your child involvement in this study is entirely voluntary. It is up to you whether you want your child to take part or not. If you consider your child to take part, him/her will be asked for oral consent at the time of the FGD, which will be recorded.

**What do I gain from the study/what will your child gain from the study?**

There are no direct benefits for taking part in this study except the light refreshments and travel reimbursement that will be made available for all the participants. However, the outcome of the study is hoped to be used in developing sexual health services in the country, which will invariably benefit all.

**What is the risk involved in taking part in the study?**

There is no serious risk to your child in taking part in the study. However, some sensitive issues are likely to be discussed which may be quite irritating and uncomfortable. But your child is free to discontinue at any stage of the FGDs, and this will not be held against him/her.

**Confidentiality**

The data gathered from the FGDs will be securely stored in the computer. Only the researcher will have access to this information and access will be password protected. All the results of this study may be used for other scholarly activities like publication in the reputable journal. However confidentiality and anonymity will be assured at all times.

Thanks once again for your time. You are appreciated.

If you need further information regarding the study, please do not hesitate to contact Franklin Onukwugha on Email: f.i.onukwugha@2015.hull.ac.uk

This study has the full approval of the Research Committee of the School of Education and Social Sciences, University of Hull UK and the National Health Research Ethics Committee of Nigeria (NHREC). Please if you wish to take part in the study, contact me on the above email address or my local phone no: 08099110595.

**Statement of Consent:**

I have read the above information, and I feel I understand the study well enough to make a decision about my child's involvement. By signing below, I am indicating my consent to allow my child to participate in this study and understand that I am agreeing to the terms described above.

Name of child.....

Parent's name& signature.....

Researcher signature & date.....

## *Appendix* 5: Consent form for Adolescents aged 16-19

**Introduction**

My name is Franklin Onukwugha, a Nigerian but currently doing my PhD at the University of Hull United Kingdom. I have worked here in Abuja at Kwali community health centre before travelling to the UK. I guess many community members may know me. I am inviting you to take part in my current study, which is looking at the challenges adolescents face in accessing sexual and reproductive health services in Nigeria. So, we would like you to share information with us through a focus group discussion of the experience of young people in accessing services.

**Background:**

This study is designed to understand the challenges young people face in accessing sexual health services and how they would want the services to be delivered. Also, trying to understand the views of young people towards use of sexual health services. This study depends on data collected via focus group discussion (FGDs). The focus group discussion will be conducted among adolescents aged 10-19 years.

**Your right in this study**

You are free to withdraw at any stage of the focus group discussion before the recording starts without taking permission or given a reason. Your involvement in this study is entirely voluntary. It is up to you whether you want to take part or not. If you consider taking part, you will be asked for oral consent at the time of FGD, which will be recorded.

**What do I gain from the study?**

There are no direct benefits for taking part in this study except the light refreshments and travel reimbursement that will be made available for all the participants. However, the outcome of the study is hoped to be used in developing sexual health services in the country, which will invariably benefit all.

**What is the risk involved in taking part in the study?**

There is no serious risk to self in taking part in the study. However, some sensitive issues are likely to be discussed which may be quite irritating and uncomfortable. But you are free to discontinue at any stage of the study, and this will not be held against you.

**Confidentiality**

The data gathered from the FGDs will be securely stored in the computer. Only the researcher will have access to this information and access will be password protected. All the results of this study may be used for other scholarly activities like publication in a reputable journal. However, confidentiality and anonymity will be assured at all times.

If you need further information regarding the study, please do not hesitate to contact Franklin Onukwugha on Email: f.i.onukwugha@2015.hull.ac.uk

This study has the full approval of the Research Committee of the School of Education and Social Sciences, University of Hull UK and the National Health Research Ethics Committee of Nigeria (NHREC). For additional information about the study, you reach me on the above email address or my local phone no: 08099110595.

**Statement of Consent:**

I have read the above information, and I feel I understand the study well enough to make a decision about my involvement. By signing below, I am indicating my consent to participate in this study and understand that I am agreeing to the terms described above.

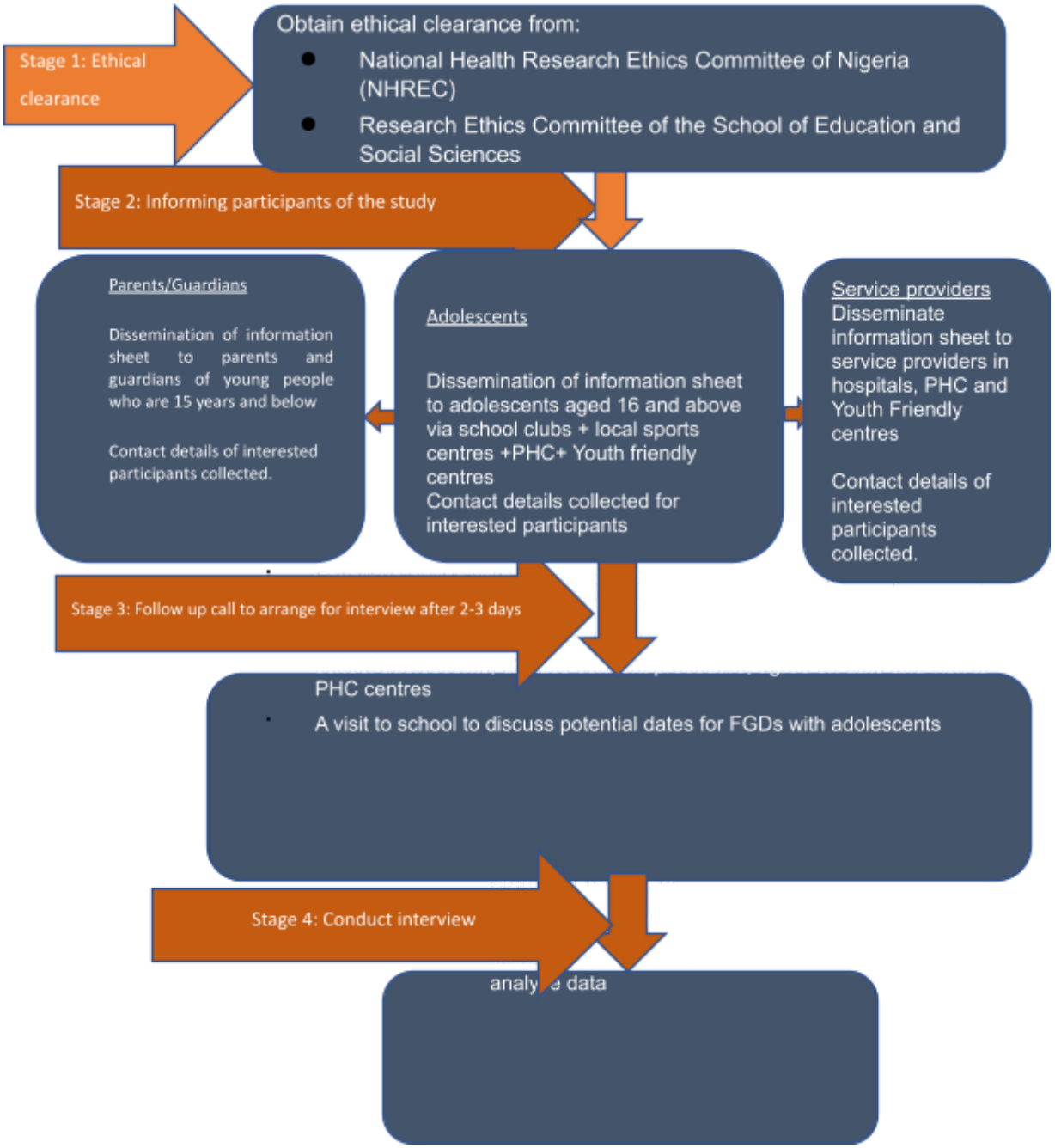
Name……

Signature & date……

Contact details ……

**Thanks once again for your time. You are appreciated.**

## *Appendix* 6: Sampling plan chart



## *Appendix* 7: Research committee of the School of Education and Social Sciences

School of Education and Social Sciences,

University of Hull,
Cottingham Rd.,
Hull HU6 7RX

19th May 2017

To whom it may concern,

I am writing to confirm that data collection for the research project, 'Trends and Determinants of Knowledge and use of Sexual and Reproductive Health Information and Services among unmarried Adolescents in Nigeria', has been approved by the Research Ethics Committee of the School of Education and Social Sciences for the period of June 2017-May 2018. The project leader is Franklin Onukwugha.
If you have any questions about the approval for the project, please feel free to contact me using the details below.

Yours faithfully,

Dr Iain Brennan AFBPsS

Director of Research
School of Education and Social Sciences

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E. i.brennan@hull.ac.uk

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## *Appendix* 8: National Health Research Ethics of Nigeria (NHREC)


**NHREC Protocol Number NHREC/01/01/2007-19/06/2017**
**NHREC Approval Number NHREC/01/01/2007-20/06/2017**
**Date: 20 June, 2017**

**Re: Trends and Determinants of Knowledge and use of Sexual and Reproductive Health Information and Services Among Unmarried Adolescents in Nigeria**

Health Research Ethics Committee (HREC) assigned number: NHREC/01/01/2007

Name of Student Investigator: Franklin Onukwugha

Address of Student Investigator: No. 2 Ferens, University of Hull
Cottingham Rd, Hull, East Yorksire
United Kingdom, HU67RX
Email: f.ionkwugha@2015.hull.ac.uk
Tel: +447578549799

Date of receipt of valid application: 20-06-2017
Date when final determination of research was made: 20-06-2017

**Notice of Expedited Committee Review and Approval**

This is to inform you that the research described in the submitted protocol, the consent forms, advertisements and other participant information materials have been reviewed and *given expedited committee approval by the National Health Research Ethics Committee.*

This approval dates from 20/06/2017 to 19/06/2018. If there is delay in starting the research, please inform the HREC so that the dates of approval can be adjusted accordingly. Note that no participant accrual or activity related to this research may be conducted outside of these dates. *All informed consent forms used in this study must carry the HREC assigned number and duration of HREC approval of the study.* In multiyear research, endeavour to submit your annual report to the HREC early in order to obtain renewal of your approval and avoid disruption of your research.

*The National Code for Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations and with the tenets of the Code including ensuring that all adverse events are reported promptly to the HREC. No changes are permitted in the research without prior approval by the HREC except in circumstances outlined in the Code. The HREC reserves the right to conduct compliance visit your research site without previous notification.*

Signed

**Professor Zubairu Iliyasu MBBS (UniMaid), MPH (Glasg.), PhD (Shef.), FWACP, FMCPH**
**Chairman, National Health Research Ethics Committee of Nigeria (NHREC)**

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Tel: +234-09-523-8367
E-mail: chairman@nhrec.net, secretary@nhrec.net, deskofficer@nhrec.net,
URL: http://www.nhrec.net,

a.

***Appendix* 9: Table 2.3: Summary of papers included in the review: Background, methodological details, limitations and key findings:**

| Authors name | Aim & objectives | Study Design, sampling & recruitment | Study Limitation | Findings |
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| Agampodi *et al*. (2008) | To explore the perceived reproductive health problems, health-seeking behaviours, and barriers to reach services among a group of adolescents. | Qualitative study: Focus group discussion: A convenient sampling of 32 adolescents age 17-19. | The number of FGDs conducted was limited, and they were confined to the Sinhalese community only and the Muslim community was not involved. | Study found that adolescents have poor knowledge of existing SRH services. Female participants seek help from friends due to lack of confidentiality, youth friendliness, and accessibility of available services. Adolescents prefer public clinic and services from health providers. Adolescents showed a negative attitude towards involving parents and want the services to be confidential. |
| Alli, *et al.* (2013) | To examine the extent interpersonal relationships, form a barrier to young people access and satisfaction of health services. | Qualitative study: Non-Probability purposive sampling of 200 young people age 18-19 and 4 FGDs. | Not reported | Young people identified staff attitude such as being judgemental, poor communication, culture, accessibility, and availability as the barriers to adolescent's access to services. |

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| Amuyunzu-Nyamongo*e t al.* (2005) | To examine how young people in Sub-Saharan Africa view SRH issues, and what they think about sources of sexual and reproductive health information and services. | A qualitative study: A total of 55 focus group discussions (FGDs) were conducted. | Facility based approach used to recruit participants was difficult to implement in Malawi because parents were reluctant releasing their kids due to rumour of child trafficking. | Study found that young people placed a high value on confidential and accurate SRH information. The mass media, health care providers, schools or teachers and dramatic performances were sources for SRH information. Barriers to obtaining SRH information reported include: not having access to information, unwelcoming health care providers, not being able to ask questions, illiteracy, feeling too shy or ashamed to ask parents and not trusting the accuracy of information. Young people are aware that they may be at risk of contracting STIs, including HIV, but the quality and depth of their knowledge vary and misconceptions persist. |
| Bamgbala *et al.* (2006) | The attitude and experiences of private medical practitioners to adolescent SRH issue and to assess the factor that may influence their attitude | Quantitative study: Cross-sectional study-Survey: Random sampling of 187 private practitioners were recruited | Not reported | Practitioners (86%) believe adolescent should use contraception. They suggest teachers and parents should provide sexuality education to adolescents. The religious affiliation of private medical practitioners influences their perception and practices. 61% of practitioners believe abortion should be legalised though with restriction and post-abortion care should be provided. |
| Bethea *et al.* (2007) | To explore the findings of our previous study which found that general practices with young general practitioners (GPs) and female GPs | Quantitative: Cross-sectional survey of 621 GPs. A questionnaire was sent to all GPs in four areas within what was the Trent Health region. | Not reported | The study found that older GPs were less likely than younger GPs (aged under 36 years) to prescribe contraception to young women aged under 16 years without parental consent. They were also more likely to state that a parent or guardian could have access to the content of |

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| | had lower teenage pregnancy rates | | | consultation without the consent of the young person. |
| Biddlecom et al. (2007) | To identify adolescent use of SRH services and their opinion and preferences regarding different sources of care. | Quantitative-A household survey of female and male adolescent age 12-19. Participants were selected through systematic sampling method. | The study did not cater to specific populations groups within individual countries such as rural and urban residence, in-school or out of -school adolescent. | The study found that a good number of sexually active adolescents do not know a source for contraceptive or STI treatment due to fear, embarrassment and financial reasons. Adolescent showed a strong preference for public clinics with a strong positive perception of confidentiality, accessibility, treated with respect and to a lesser cost. Though country difference exists male and female view is similar. |
| Both & Samuel, (2014) | To assess how emergency contraceptive (ECS) is dispensed by service providers, and how young people access, purchase, and get informed about ECs. | Qualitative study: semi-structured questionnaire, in-depth interview conducted amongst 65 young people age 15-29, eight service providers and 3 key. | The study was conducted using a small sample size and cannot be generalized to the whole of Ethiopia especially rural areas where ECs may not be readily available, or use of SRH activities differ. | The study found that providers attitude affected the amount and type of SRH information available to young people. Providers were uncomfortable with high sales of ECs; young people preferred to seek information from discreet sources, including friends and partners, leaflets and the mass media. Also, service providers misunderstood young people' s purchasing behaviour, characterized by buying ECs quickly and feeling too embarrassed to ask questions, as a rejection of counselling. |
| Bourton, (2006). | This study aimed to explore adolescents' levels of knowledge on sexual health issues and their views on the sex education they receive as part of their compulsory education | Mixed method study: Questionnaire and focus group discussion. Four FGDs were conducted among adolescents aged 16-17 | Not reported | Participants felt their sex education was 'too little, too late' and that it should be taught by someone other than a teacher. Sources of SRH information include friends, family, magazine, media. Young people were displeased with the way the emotional and moral component of sexuality education was thought. |

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| Bush *et al* (2002) | To describe the primary and preferred sources of information regarding HIV/AIDS and sexual risk behaviour about several socio-demographic variables. | Quantitative study: The sample for this study consisted of 941 students from four coeducational high schools located in three of the four regions of Swaziland. Participants had a mean age of 16.4 years (SD=1.5).<br>There were 456 (48.5%) boys and 485 (51.5%) girls completed the survey. | Not reported | Broadcast/print media was the primary source for HIV/AIDS and sexual risk behaviour information for the students; most participants preferred information from the healthcare workers. The majority of the<br>participants reported the print and broadcast media as their primary source for HIV/AIDS information (62.0%); followed by siblings and friends (13.9%); Parents, family, and elders was the medium reported least by the participants as their primary source for<br>HIV/AIDS information (6.3%). |
| Chambers *et al.* (2002) | To compare the views of young people and professionals about ways to reduce the frequency of teenage pregnancy. | Quantitative study: Delphi study technique. Fifty-six professionals from health, education, social care, youth and community and other sectors and 55 young people. | Low response rate from young people. The study took a subjective process which can introduce bias. There may have been inadvertent bias as workshop facilitators capture a small group of facilitators. | The study found that young people emphasised the importance of interventions being young person-centred, whereas professionals stressed that re-organisation contraceptive and sexual health and education services was key-focusing on a service-based solution. Young people suggested more creative ways of communicating health and education messages than did professionals. Both groups advocated peer education and recognised the need for developing help and services for young men. Young people advocated for disseminating SRH information in teens magazine but rejected by professionals. |

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| Donaldson, *et al.* (2013) | To describe the extent to which sexually experienced adolescents in the United States receive sexual health information (SHI) from multiple of three sources: parents, teachers, and healthcare providers | Quantitative study: NationalSurvey, quantitative analysis. 875 & 1026 heterosexually experienced, unmarried/non-cohabiting females and males ages 15- 19 years were recruited for the study. | The National survey of family growth (NSFG) is a cross-sectional survey and asks respondents to retrospectively report on SHI receipt. They are more likely not to remember accurately. The survey did not assess the timing of SHI receipt, nor measure the exact content of the information. | Parents and teachers SHI sources were reported by 55% and 43% of sexually experienced female and male adolescents, respectively, for birth control information; and by 59% and 66%, respectively, for STI/HIV information. SHI from either parent or teacher sources, only one in ten reported healthcare providers as a source of birth control information, with a similar proportion reporting healthcare provider as a source of STI/HIV information. SHI receipt was found to vary by gender with more females than males reporting birth control information receipt from parents and teachers, and about one in six males reporting no birth control or condom information receipt from either source. Among the three sources examined in this study, healthcare providers were identified as being least involved in the delivery of SHI content to sexually experienced adolescents. |

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| Donovan, *et al.* (1997) | To discover the attitudes of 15- to 16-year-olds to the GP consultation and contraceptive services. | Quantitative study: 4481 Adolescent age 15-16 were sampled | Not reported | The median consulting rate per year was two for males and three for females. Over 60% of adolescents attended the consultation with a parent. Of the males, 27.5% 'felt that the discussion with their GP could be relayed to their parents against their wishes', as did 25.1% of the females. Other difficulties with GP appointments were identified as embarrassment (63% of females and 46% of males), difficulty getting a quick appointment (44% of both males and females), and an unsympathetic GP (32% of females and 20.5% of males). Other factors include lack of trust in confidentiality, lack of staff friendliness, and delay in the appointment. |
| Ege *et al* (2008) | To evaluate how midwifery students feel about adolescents sexuality, the use of contraceptive methods, and abortion | Quantitative study: a total of 55 students in the<br>the second year of a midwifery course was included in the sampling. | Not reported | The study found that 87.3% of midwifery students believed a girl should be a virgin when she married, that 50.9%<br>Believed abortion was morally wrong and that 23.6% believed only married couples should be informed of contraceptive methods. The study showed that students were influenced by their attitudes by social-value judgments about adolescent sexual and reproductive health. |
| Erulka *et al.* (2005) | To assess the perceptions of young people on the importance of different aspects of RH services often considered youth-friendly | Quantitative study: Survey research design. A total of 1,344 never-married adolescents aged 10–19 years were surveyed in Kenya, while 539 | Not reported | Adolescents rated confidentiality, short waiting time, low cost and friendly staff as the most important characteristics in accessing SRH services. The least important characteristics included youth-only service, youth involvement and young staff, suggesting that adolescents do not prioritise stand-alone youth services such as |

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| | | adolescents in Zimbabwe via random sampling method | | youth centres, or necessarily need arrangements particular to youth such as youth involvement. |
| French, (2002). | To examine young people's attitudes towards and experiences of consultations with health care providers about contraception, taking account of the context of their contraceptive use | Qualitative study: Focus group discussions and in-depth interviews: 32 In-depth interviews were conducted among young people age 16-21 and focus groups were conducted | Not reported | The result shows young people knowledge about contraception; sexually transmitted infections and the risk of pregnancy was often high. What young people said they wanted from consultations with health care workers and their experiences of the consultation process often conflicted |
| Godia, *et al.* (2013) | To explore the perceptions and experiences of Health Service Providers (HSP) in providing SRH services to young people in Kenya | Qualitative study: Focus group discussions (FGDs) and semi-structured in-depth interviews (IDIs). Purposive sampling was used to recruit participants from selected health service centres. Nineteen in-depth interview and 2 focus group discussion with health service providers | The study took place in eight facilities in Kenya, and hence the result presented may not be generalised to the whole of Kenya health service provider. The study relied on self-reported data. | The study shows that majority of health service providers (HSP) were not comfortable providing contraceptives to young people-reasons are linked to personal feelings, cultural and religious values and beliefs. Secondly, they reported lack confidence in providing services to young people. Also, some awareness of the youth-friendly services concept among HSP but not of supporting national policies and guidelines |

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| Hebert, *et al.* (2013) | To understand the perception of, experience with and challenges of delivering family planning services | Qualitative study: In-depth interview: 59 in-depth interviews were conducted among Family Healthcare providers. Thematic content analysis approach was used to analyse the data | Not reported | The result shows that many providers exclude youth and unmarried individuals from family planning services. Many providers lack basic training in family planning provision. Providers often describe their motivation to provide in terms of the health benefits offered by family planning methods. |
| Iyer&Aggleton, (2013) | To describe teachers' beliefs and attitudes towards young people's SRH and to discuss how conservative attitudes to young people's sexual activity and adherence to gender stereotypes can limit students' access to SRH information and services. | Qualitative study: Focus Group Discussion (FGD) and interview were conducted with 13 teachers to elicit rich information. | The research took place in an NGO-run private school in the pre-urban setting, which means that participants from rural areas were excluded. Limited time in the field led to some other important aspect of the study were excluded. | The study reveals that teachers were in disagreement that girls should not use a contraceptive. Teachers attitude, beliefs and superstitious towards young people sexuality affect their access to services |

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| Jacobson *et al.* (2001). | To determine how teenagers, view primary care, to discover how primary care providers view teenage patients, and to note any differences in opinions between the two groups | Mixed method study: Questionnaire survey, focus group discussions, and semi-structured interviews: 2265 teenage patients age 14-18, 16 general practitioners (GPs), 12 practice nurses, and 12 general practice receptionists were sampled. | The low response rate from the questionnaire than expected, a large proportion of the young people sampled were in school excluding the out of school young people. The number involved in the FGDs were smaller than originally designed. | The teenagers reported a lack of knowledge of services available from primary care, a feeling of a lack of respect for teenage health concerns, poor communication skills in GPs, and a poor understanding of confidentiality issues. The providers did not always share these concerns, and they also had differing views on communication and confidentiality issues. |
| Jarusevicien e, *et al.* (2006) | To investigate GPs perception of confidentiality, and the factors that influence GPs decision whether or not to protect the confidentiality of adolescent seeking SRH services | Qualitative: in-depth interview: 20 GPs recruited using a purposive sampling technique | The study cannot be generalised due to the small sample size. Secondly, the study only examined the opinion of GPs without considering that of adolescents. | The study found that the decision whether to respect the confidentiality of adolescents was hugely influenced by external factors such as legislative framework, societal attitude, institutional features in clinical facilities, e.g. the presence of nurse during the consultation, GP relationship with adolescent, families and their attitude. |

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| Jarusevicien e, *et al.* (2011) | To gain knowledge about current practices of GPs in informing parents on the importance of confidentiality as well as in protecting the privacy of minors | Quantitative study: Cross-sectional study.607 questionnaires were sent randomly to Lithuanian GPs. Data analysed using SPSS version 15.0 | 26.5% of GPs from the original data set did not respond. As the questionnaires were anonymous, we could not check whether respondents differed substantially from non-respondents. Secondly, the data were self-reported and therefore subject to recall and response biases. The third limitation may be the representativeness of the sample. | This study found that Lithuanian GPs do not provide uniform confidentiality guarantees in adolescent SRH health care. Confidentiality protection in sexual and reproductive health care is not always properly ensured. Lithuanian GPs frequently violate adolescents' right to confidential health services; younger GPs show stronger support for confidentiality. |
| Jarusevicien e, *et al.* (2013) | To elicit the views of primary healthcare providers from Bolivia, Ecuador, and Nicaragua on how adolescent sexual and reproductive health (ASRH) care in their communities can be improved | Qualitative study: Overall, 126 healthcare providers (46 from Bolivia, 39 from Ecuador, and 41 from Nicaragua) participated in the study. Almost half of the participants were physicians, and approximately one-third was nurses | This study had several limitations. First, the groups of study participants were not similar across the countries: medical students were present only in Bolivia. In Nicaragua, groups consisted nearly exclusively of health-care providers: physicians and nurses. Physicians dominated in Nicaragua, | The study shows that Healthcare providers emphasized managerial issues such as the prioritization of adolescents as a patient group and increased healthcare providers' awareness about adolescent-friendly approaches via training activities to improve providers skills in dealing with adolescents. |

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| | | | nurses, auxiliary medical staff, and medical students in Bolivia | |
| Johansson *et al.* (2006) | To explore the perspectives of midwives and doctors on adolescent sexuality and abortion, and what they considered to be quality abortion care for adolescents and the barriers to it, as well as to their own training needs | Qualitative study: Data was collected through Observations of care in abortion clinics and focus-group discussions (FGD) Doctors and midwives from three healthcare facilities. | Only 4 FGDs were carried out. The older participants tended to take the lead in the discussions, possibly bending these towards more ‘‘traditional’’ views. Only two male participants were included in the FGD, both young and not very talkative. Thus, our findings represent mainly female perspectives. | Health care providers identified that barriers to quality abortion care were of technical and managerial. They considered that unmarried counselling clients in connection with abortion should focus on warning against the risks and dangers of abortion and pre-marital sexual relations, which they strongly disapproved of. |
| Johnston et al. (2015) | To describe the views of sexual health service providers on access issues for young people and consider them together with the views of young people themselves | A cross-sectional mixed method study design involving a semi-strucutred interview with health service providers and electronic survey with young people. Thirty-two service providers and 391 young people age 15-24 were recruited using purposive sampling method. | The selection process was purposive, and such selection bias may be present. The data used to come up with the findings was generated through 2 different methods. Young people were asked to rate the importance of various markers of service quality, and service providers were asked about the barriers and enablers for young people accessing SRH services. | Service providers identified structural barriers, confidentiality, lack of awareness of SRH services as the barrier for young people seeking SRH care. Young people reported structural factors to be important but placed greater value on personal attributes of service providers most importantly welcoming and non-judgemental. In terms of the qualities of SRH services, having a young staff was the least. |

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| Kennedy et al. (2013) | To explore the barriers and enablers of and SRH information and service delivery preferences of adolescent and the attitude and perceptions of service providers and policy makers regarding the provision SRH services to adolescent. | A qualitative study-Through focus group discussion and Semi-structured interview: 341 male and female adolescent and 12 service providers were recruited. | Participants in this study were recruited from 2 most populous island excluding adolescent from remote areas. The use of convenience sampling method may have also excluded more marginalised. The schools selected for the study have been involved in SRH promotion activities. This can aswell introduce bias | Adolescent identified a friendly service provider as an important feature for young people access to services. Nearly all groups described a fear of unfriendly, and judgemental providers. Most concerned they would be scolded and made to feel ashamed of sexually active. Free services, confidentiality, and privacy were also key features. |
| Kiapi-Iwa, & Hart (2004) | To explore the relationship between different types of health service providers and young people in the district. We also seek to answer the question, what are the best ways of improving young people's access to sexual health care? | Mixed method study: Qualitative study: In-depth interviews and a cross-sectional survey. In-depth interviews held with 11 young people age 10-21 and service providers and cross-sectional survey with 245 young people through a multi-stage sampling method. | Lack of time to conduct more interviews and the need for interpretation during some of the interviews. The interviewer has a medical background, and this may create a bias to the responses | Results showed that Health workers are the most important category of people providing information on sexual and reproductive health (SRH) for young people. Many health workers are conservative about adolescent sexuality. Physical, social, psychological and economic factors create barriers to service accessibility. Young people visit informal and traditional health care providers due to confidentiality and privacy they offer. |

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| Klingberg-Allvin, *et al.* (2007) | This study aimed to investigate Vietnamese midwifery students' values and attitudes towards adolescent sexuality, abortion and contraception and their views on professional preparation | Mixed method study: Survey and interview. A survey including 235 midwifery students from four different secondary medical colleges in northern Vietnam was carried out. Also, 18 midwifery students were individually interviewed | Matters of adolescents' sexual and reproductive health are sensitive issues in Vietnam, and one might expect students' answers to be biased towards that which is socially acceptable rather than their personal views | The study revealed general disapproval of adolescent pre-marital sexual relations and abortion. Respondents felt poorly prepared to deal with adolescents sexual health needs. Gender-based imbalance in sexual relationships, limited knowledge about reproductive health issues among youth, and negative societal attitudes were concerns expressed by the students. |
| Kumi-Kyereme (2014) | To explore the views of adults on adolescent sexual and reproductive health. | Qualitative study: 60 IDIs were conducted. Respondents were purposively selected consisting of health care providers, sampled from four communities | Not reported | The study found that the major ASRH problems were teenage pregnancy and HIV/AIDS. The results indicated some challenges confronting ASRH promotion including resistance from parents, attitudes of adolescents, the communication gap between adults and adolescents and views of health care providers. Among health workers, three broad categories were identified: those who were helpful, judgmental and dictators. Some adults supported services for young people while others did not. |

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| Lince-Deroche (2015) | To assess young women's SRH knowledge and experiences and to determine how they get SRH information and services. | Mixed method study: Young women aged 18-24 were recruited from 3 health clinics. Ninety young women were surveyed while 15 women were interviewed. | Limitations of this study include the small sample size and the minimum age (18 years) for participation. The requirement to recruit from age 18 upward was set by the local ethics committee, but because sexual debut is often earlier than 18 for young women in South Africa, future similar studies should include younger women. | The study indicated providers' unsupportive attitudes, uneven power dynamics in relationships and communication issues with parents and community members as a challenge to young women access to SRH services. The clinic is the main source for SRH services. Young women indicated their daily concern to be pregnancy and HIV/AIDS. |
| Mason (2005). ' | To discover what issues staff felt were important to 11–14-year-old girls, so that a future study is conducted with the young girls themselves. | Qualitative study: One to one interview. Eight service providers from two Brook Advisory Centres were interviewed. The interviews were semi-structured and analysed using content analysis | Not reported | The study revealed that lack of knowledge around sexually transmitted infection, alcohol consumption, peer pressure, low self-esteem and confidence, and as were the major concern staff had about young people. However, a new issue to emerge was the high proportion of young girls attending the clinic for the emergency contraceptive pill despite not knowing whether they had had intercourse or not. The study also found that staff perceived the need to understand issues from the perspective of the young girls themselves. |

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| Matich *et al* (2015) | To explore young people's views regarding barriers and enablers for accessing SRH services | Quantitative study: Cross-sectional study via eight reference group meetings and an electronic survey in four sites | The methodological limitations of the study related to the sampling methods employed in the young people's survey. There was an over-representation of females in the survey and plans have been put in place to overcome this issue in future research by focussed sampling at venues that are likely to include more males | The study showed that the most valued markers of quality in SRH services defined by young people are all related to staff characteristics. Young people preferred services where staff were friendly, good listeners, non-judgemental. In addition, young people preferred to seek care from SRH specialist services |
| Mngadi, *et al.* (2008) | To explore health providers' perceptions of adolescent sexual and reproductive healthcare services in Swaziland. | Quantitative study: Fifty-six healthcare providers, working in 11 health clinics in Swaziland in 2005, were surveyed using a semi-structured questionnaire. | The sample was compromised because it consisted only of health providers who were available during the study period. Hence, it excluded those who were on leave, on relief duty at other stations, had migrated to other countries for greener pastures and those who were on study leave. | The study indicated that the majority of providers had unresolved moral doubts, negative attitudes, values and ethical dilemmas towards abortion care between the law, which is against abortion, and the reality of the adolescents' situation. Forty-four wanted to be trained on post-abortion care while 8 on how to perform abortions. Twenty-six wanted the government to support adolescent-friendly services and to train healthcare providers in adolescent sexual and reproductive health services. |

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| Muntean *et al* (2015) | To explores the extent to which current service provision addresses the SRH needs of young people. Focusing on views of Key informants | Qualitative study: Snowballing sampling technique was used to recruit 14 key informants for semi-structured interviews. This was combined with a systematic review. | The small sample size was used: Since the sample is small, these opinions cannot be generalised to represent the views of all experts in Ethiopia. The review relied heavily on data extracted from DHS, which has its methodological limitations. | Factors affecting utilization of sexual and reproductive services by young people include limited SRH knowledge, lack of open discussion of sexual matters, low status of women, cultural and logistical barriers, competing priorities among community health professionals, limited resources for health facilities, and negative attitudes of providers towards unmarried youth. |
| Nair, *et al.* (2013) | To understand the perceptions of program managers and service providers using in-depth interview technique, well-accepted qualitative research that can also offer semi-quantitative input | Qualitative study: In total 34 in-depth interviews were conducted. Purposive sampling was used to selecting participants from 3 districts. | Not reported | The study identified barriers to the utilization of services for adolescents to be lack of awareness of parents, stigma to utilize services, economic factors, a facility available at faraway places, and non-availability of services. SRH problems facing adolescent include sexuality, psychosocial conflict, identity crisis, substance abuse. |
| Nwokolo et al. (2002) | To identify factors that encouraged young people's use of sexual health services to create a service suited to their needs. | Quantitative study: A peer designed questionnaire were distributed to744 pupils aged 11–18 years in six secondary schools. A total of 294 males and 450 females were sampled with a 100% response rate | Not reported | The study found that pupils wanted clinics to run more frequently than the usual once a week; the staff attributes that were most important were attitudinal rather than to do with sex, age, and they did not mind if the waiting room contained older people. Young people wanted the clinic to be open after school; girls preferred to attend with a friend; a confidential, walk-in service was preferred. Young people felt the age of the staff is not an issue. |

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| Omobuwa (2012) | To explored the perceived reproductive health problems amongst in-school adolescents and their health-seeking behaviours, assessed their knowledge of available reproductive health services and identified existing barriers to its access. | Quantitative: descriptive cross-sectional study: 392 respondents were recruited by multi-stage sampling and utilized a semi-structured questionnaire for dat a collection. | Not reported | The study shows adolescents most preferred places of seeking healthcare were government hospitals (37.8%) and private hospitals (28.1%). The most commonly perceived adolescent health problems include menstrual problems, unwanted pregnancy, HIV/AIDs and lack of sexuality education. The mass media, especially the television and radio were found to be their main sources of health information. The study found adolescents have little or no access to sexual |
| Parkes *et al.* (2004) | To compare teenage users and non-users of services, examining the role of socio-demographic background, sexual experience, access, knowledge and school sex education | Quantitative study: 15-16-year-olds (n = 5747) were questioned about their use of sexual health services in the SHARE trial of a school sex education programme in 25 schools Scotland, UK. Multilevel statistical models were used. | Not reported | The study shows proximity to specialist clinics was linked with greater use services while low spending money and high parental monitoring were associated with less use. Teenagers with better knowledge, who rated their school sex education as effective, who were comfortable talking about sex and who had discussed contraception with peers were more likely to have used services. Differences in use relating to sexual experience, knowledge, feeling comfortable talking about sex and talking with peers helped to explain gender differences in service uptake |

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| Pitts, *et al.* (1996) | To examine full y young persons' sexual health needs within the district & the current service provision for young persons' sexual health needs within the district and produce recommendations for future service provision. | Qualitative study: Interviews were carried out with 19 providers of sexual health care to young people. Four main groups were identified (GPs), Nurses, community officers, school nurses) as providers of services for young people. | Not reported | The study shows there were marked differences of view between those who provide advice via a general practice and those who operate from a designated service for young people. All providers studied tend to hold negative views of young people and their sexual activity. It is considered how far these under-lying attitudes may militate against the provision of appropriate services. Study found that the risk of STIs including HIV/AIDS is often underemphasized. |
| Rubin, *et al.* (2012) | To explored primary care physicians' (PCPs) approaches to contraception counselling with adolescents, focusing on their views about who would be appropriate IUD candidates | Qualitative study: Phone interview: Using purposeful stratified sampling, 28 urban family physicians, paediatricians, and obstetrician were recruited. Using standard qualitative techniques, a coding template was developed and applied. | Not reported | Most respondents have a patient-centred general contraceptive counselling approach. However, when considering the Intrauterine device (IUDs), many PCPs describe more paternalistic counselling. Many respondents believe adolescents' primary concern is pregnancy prevention, many PCPs prioritise STI prevention and thus would not offer an IUD. Attributes PCPs associate with an appropriate IUD candidate include responsibility, reliability, maturity, and monogamy |

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| Rubin, *et al.* (2013) | To explored New York City primary care physicians' experiences, attitudes, and beliefs about counselling and provision of LARC to adolescents | Qualitative study: Phone interview: Using purposeful stratified sampling, 28 urban family physicians, paediatricians, and obstetrician were recruited. Using standard qualitative techniques, a coding template was developed and applied. | Less than one-half of invited participants completed an interview. It is probably that respondents more frequently counselled, efforts to minimize social desirability bias, interviewees knew that the interviewer was a physician whose research interest is LARC use and adolescents. | The study founds that enablers to IUD counselling and provision include knowledge of adolescent appropriateness, a clinical environment supportive of adolescent contraception, IUD availability in the clinic, and ability to insert IUDs or easy access to a someone who can. Enabling motivation to include belief in the overall positive consequences of IUD use; this is influenced by a physician perception of adolescent risk of pregnancy and STIs. |
| Shahhosseini, &Abedian (2015) | To compare the attitudes of Iranian health care providers and adolescents towards the latter's health education needs. | Quantitative study: A cross-cross-sectional survey, including 72 health care providers and 402 female students from 14 high schools in northern Iran, was carried out in 2011. | Not reported | Providers identified educational needs of adolescent to be: education about prevention of high-risk sexual behaviour which was significantly different from an adolescent perspective. This is followed by education about life skills" and education about undesired consequences of a relationship with boyfriends. Results showed that health care providers and adolescents both emphasized on the mothers' role as the most reliable source of adolescents' education |

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| Sychareun, (2004) | To explore the attitudes of formal and informal sector providers in serving the contraceptive needs of unmarried youth in Vientiane, their perceptions of quality of care, confidentiality and privacy, any differences between providers in the two sectors | Mixed method study: in-depth interview & survey: Purposive sampling of 56 key informants were recruited for In-depth interviews, followed by a quantitative survey of 150 formal sectors and 100 informal sector providers | Not reported | The study found providers feel discomfort in communicating with unmarried youth and providing contraceptives to them, and low priority placed on their right to privacy and confidentiality. Providers tended to attribute difficulties almost entirely to young people's inhibitions and unwillingness to listen. Less than 60% of formal sector providers would supply contraceptives to unmarried youth, compared to 80% of informal providers, but the latter were more likely to charge a fee for supplies |
| Temin *et al.* (1999) | To explore the adolescents' perceptions of sexual behaviour among their peers, their knowledge of STDs and their preferred means of preventing and treating STDs | Qualitative study: Focus group discussion. Twenty-four single-sex focus group discussions were conducted among young people aged 15–20 attending secondary schools in Benin City. Data were analysed using a content analysis approach | Not reported | The result shows that young people had some knowledge about STDs, especially HIV and AIDS, but many believed infections were inevitable. When they had an STD, most went to traditional healers; they were unlikely to seek treatment from doctors because of high cost, slow service, negative provider attitudes toward young people and a perceived lack of confidentiality. The participants considered media campaigns as the best way to educate young people about STDs and condom use |

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| Tilahun (2012) | To examine health care workers' attitudes toward sexual and reproductive health services to unmarried adolescent | Quantitative study: a descriptive cross-sectional survey using stratified proportional sampling to recruit 423 health care service providers working in eastern Ethiopia in 2010. | Even though Health care workers (HCWs) had privacy during the administration of the questionnaires, the possibility of social desirability bias could not be excluded. Due to this possibility of under-reporting, we did not examine their practice about providing RH services to adolescents | The study found that nearly one third (30%) of health care workers had negative attitudes toward providing RH services to unmarried adolescents. 46.5% of the respondents had unfavourable responses toward providing family planning to unmarried adolescents. About 13% of health workers agreed to set up penal rules and regulations against adolescents that practice pre-marital sexual intercourse. The results indicated that being married, lower education level, being a health extension worker, lack of training on SRH services to be significantly associated with negative attitudes toward provision of SRH Services to adolescents. |
| Tu, *et al.* (2004) | To ascertain the perspectives of family-planning service providers in eight sites in China on the provision of sexual and reproductive health services to unmarried young people | Mixed method study: Survey and Focus group discussion (FGD). Data were drawn from a survey of 1927 family-planning workers and 16 focus group discussions conducted in eight sites in China. | Findings from the study are not intended to be representative of China generally nor could the huge ethnic and cultural diversity existing in the country have been captured in this in-depth study of eight sites. Caution must be exercised in generalizing findings, even to the province or city from which data are drawn | The study found that Family-planning workers recognized the need to protect the sexual health of unmarried young people and were unambiguous about the need for government agencies to provide information and education on sexual and reproductive health to unmarried young people. While about 70% of family-planning workers were willing to provide contraceptives to unmarried young people, and about 60% approved government provision of contraceptive services to unmarried young people, only one quarter agreed that the services could be extended to senior high schools |

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| Warenius et al. (2006) | To investigate attitudes among Kenyan and Zambian nurse-midwives toward adolescent sexual and reproductive health problems, to improve services for adolescents. | Quantitative study: A cross-sectional survey of 820 nurse-midwives working in sexual and reproductive health services in 2 districts Kenya | Not reported | Findings revealed that nurse-midwives disapproved of adolescent sexual activity, including masturbation, contraceptive use and abortion, but also had a pragmatic attitude to handling these issues. Those with more education and those who had received continuing education on adolescent sexuality and reproduction showed a tendency towards more youth-friendly attitudes |