FACTORS AFFECTING HEALTH-SEEKING BEHAVIOUR AND UPTAKE OF MATERNAL HEALTH SERVICES BY ADOLESCENT MOTHERS IN NIGERIA: A REVIEW OF LITERATURE.

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FACTORS AFFECTING HEALTH-SEEKING BEHAVIOUR AND UPTAKE OF MATERNAL HEALTH SERVICES BY ADOLESCENT MOTHERS IN NIGERIA: A REVIEW OF LITERATURE

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

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The area where other people's work has been used (from either a printed or virtual source or any other source) has been carefully acknowledged and referenced following the academic requirements.

The thesis "**Factors affecting health-seeking behaviour and uptake of maternal health services by adolescent mothers in Nigeria: A review of literature**" is my work.

Signature: 

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I am evidence of Gods existence; therefore, my sincere gratitude is to Almighty God for His Unfailing love upon my life and the grace to complete this project.

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DEDICATION

I dedicate this project to Almighty God. Thank you for being my all-sufficient God.

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LIST OF ABBREVIATION

ANC	Antenatal Care
BHCPF	Basic Healthcare Provision Fund
CBHIS	Community-Based Health Insurance Scheme
CORPs	Community Health Educator Programs
HSDPs	Health Systems Development Projects
LMICs	Low- and Middle-Income Countries
MMR	Maternal Mortality Ratio
MoU	Memorandum of Understanding
MSS	Midwife Service Scheme
MHS	Maternal Health Services
NT	National Target
NDHS	Nigeria Demographic and Health Survey
NSHIP	The Nigeria State Health Investment Project
NHMIS	National Health Management Information System
PPFN	Planned Parenthood Federation of Nigeria
PHCs	Primary Health Centers
P4P	Payment for Performance
PNC	Postnatal Care
RMNCH	Reproductive Maternal Newborn and Child Health
SEM	Socioecological Model
SURE-P	Subsidy Reinvestment and Empowerment Programme
SOML	Saving One Million Lives
TBA	Traditional Birth Attendance
UNICEF	United Nations Children Fund
WHO	World Health Organization
UNFPA	United Nations Population Fund

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GLOSSARY OF TERMS

Health-seeking behaviour: Specific actions an individual (adolescent mother) takes to maintain health or remedy health problems, including health behaviour during pregnancy, common ailments treatments, reliance on available health systems within the community, or prompt referral for care outside of the community. [1,2]

Uptake: The actual usage or utilization of available health services by the people for whom the service is design. [3,4]

Maternal mortality: This refers to "deaths due to complications from pregnancy or childbirth".[5]

Adolescents: An individual in the 10-19 years group. [6]

Adolescent pregnancy: Pregnancy in a woman aged 10–19 years. [6]

Adolescent mothers: The percentage of women between 15 – 19 years of age who already had children or are currently pregnant. [7]

Perinatal mortality: The sum of fetal and newborn death on or before seven days.[8]

Preterm birth: Early delivery of a baby before 37 weeks of pregnancy.[9,10]

Eclampsia: A pregnancy-related convulsions associated with high blood pressure, with no other known cause.[11]

Puerperal endometritis: Infection of the uterus characterized by fever, abdominal or pelvic pain, tenderness of the uterus, and occasionally discharge.[12]

ABSTRACT

Background: Adolescent motherhood is a significant social and public health problem associated with adverse maternal health outcomes. Adolescent mothers face a higher risk of pregnancy complications and death than their counterparts of 20-24. In addition, they exhibit improper health-seeking behaviour in the uptake of maternal health services. However, research to identify the factors responsible for the low uptake of maternal health services (MHS) is limited and inadequately understood. This study aims to identify those factors affecting health-seeking behaviour and uptake of maternal health services by adolescent mothers in Nigeria.

Methodology: This study employed a literature review. The researcher explored the factors affecting health-seeking behaviour and uptake of maternal health services by adolescent mothers in Nigeria and analyzed the findings according to the socioecological model.

Findings: The results show that the factors affecting health-seeking behaviour and uptake of maternal health services cut across all the levels of the socioecological model. The health-seeking behaviour among adolescent mothers' is flawed, and uptake of maternal health services by adolescent mothers are low. The significant factors identified include low education level, poverty, low decision-making autonomy, residence area, stigmatization and discrimination, healthcare workers judgmental attitude, inability to access and afford MHS facilities.

Conclusion and Health implications: There is a need to incorporate adolescent-friendly maternal health services into Nigeria's existing maternal health services to target adolescent mothers' specific health and developmental needs. National policies and interventions to target adolescent mothers, especially those in underserved regions, to reduce the inequity gap in accessing maternal health services and improve their health outcomes.

Keywords: Antenatal Care, Postnatal care, skilled birth delivery, adolescent mothers, health-seeking behaviour, Nigeria

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INTRODUCTION

Adolescent motherhood is a significant social and public health problem associated with adverse maternal health outcomes. [13–16] Adolescent mothers face a higher risk of pregnancy complications like systemic infections, puerperal endometritis, eclampsia, preterm birth, perinatal mortality, low birth weight and death than older women of 20-24 years. [13,14,17]

These pregnancy-related complications and deaths are preventable with adequate use of maternal health services (MHS).[18–20] Women who received maternal health services from skilled personnel had a better pregnancy outcome and adjusted well to postnatal life than those who did not receive such maternal health services. [21,22] However, there is a report of improper health-seeking behaviour among adolescent mothers. [23–26]

It is worth noting that adolescents' voices are presently under-represented, despite the pregnancy-related risk they face.[27] Therefore targeting this group is important and pertinent to meeting the sustainable development goal (SDG) of reducing Maternal Mortality Ratio (MMR) to 70 per 100,000 deaths per live birth by 2030.

As a professional nurse-midwife, I have been opportune to interact with many pregnant adolescents with low uptake of maternal service. Unfortunately, many of the factors they mentioned for low uptake of maternal health services are personal and environmental factors beyond their control.

This literature review intends to identify the factors affecting health-seeking behaviour and uptake of maternal health services among adolescent mothers in Nigeria. The result will help policymakers and relevant stakeholders formulate strategies to facilitate the uptake of maternal health services. It will also help to design adolescent-friendly maternal health services that will help improve uptake of maternal health services, thereby generally reducing the incidence of maternal mortality in Nigeria.[28,29]

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STRUCTURE OF THESIS

This thesis comprises six chapters as the table of contents outlined. Chapter one is about the background of Nigeria, including the relevant information on the research topic. Chapter two discusses the problem statement, justification, objectives, methodology, conceptual framework, the inclusion and exclusion criteria, search strategy and search terms, and study limitation. Also, Chapter three discuss the findings from relevant articles and country-specific reports in line with the conceptual framework. In contrast, chapter four analyses the promising strategies and best practices that are more responsive to the health-seeking behaviour and the uptake of maternal health services among adolescent mothers from Nigeria and other countries with similar settings in west-Africa. Finally, chapter five discusses relevant findings on the research topic; chapter six gives conclusions derived from the study and recommendations suggested based on the identified promising strategies and best practices.

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CHAPTER 1: BACKGROUND

Chapter one introduces background information of the study. It comprises the demography of the study area and brief reviews of the literature on socioeconomic profile, health system structure, health-seeking behaviour, maternal mortality, adolescent mothers, and maternal health services.

1.1 Demography

Nigeria is the most known populous African nation with the highest youthful population. It was forecasted by the United Nations (UN) to be the most populous nation in the world by 2050.[30,31] The population is over 200 million as of 2019 and was estimated to be around 219 million by July 2021.[32] About 43% of Nigerians are youth and every one in four persons are adolescent. [30,31] The females' population is about 49.3 per cent of the nation's total population, while the female adolescents (15-19 years) account for over 10 million persons, representing about 11% of the entire female population.[7,33,34]

Nigeria is in the western area of Africa and bordered by the Gulf of Guinea, between Cameroon and Benin. Nigeria has six (6) geopolitical regions: Southeast, Southwest, South-South, Northeast, Northwest, and Northcentral. It has 36 states and a federal capital territory (FCT) Abuja (figure 1) and 774 Local Government Areas (LGA) that are constitutionally recognized.

Nigeria is a multi-ethnic federation embedded in diverse cultural beliefs with more than 250 ethnic groups which includes: Yoruba (15.5%), Hausa (30%), Igbo (15.2%), Tiv (2.4%), Fulani (6%), Kanuri/Beriberi (2.4%), Ijaw/Izon (1.8%), Ibibio (1.8%), others (24.7%). The country languages are English (official), Yoruba, Hausa, Ibo, Fulani, and over 500 other native languages. The religion comprises Christian (35.3%), Muslims (53.5%), Roman Catholic (10.6%), and others (6%).[30,32,35,36]

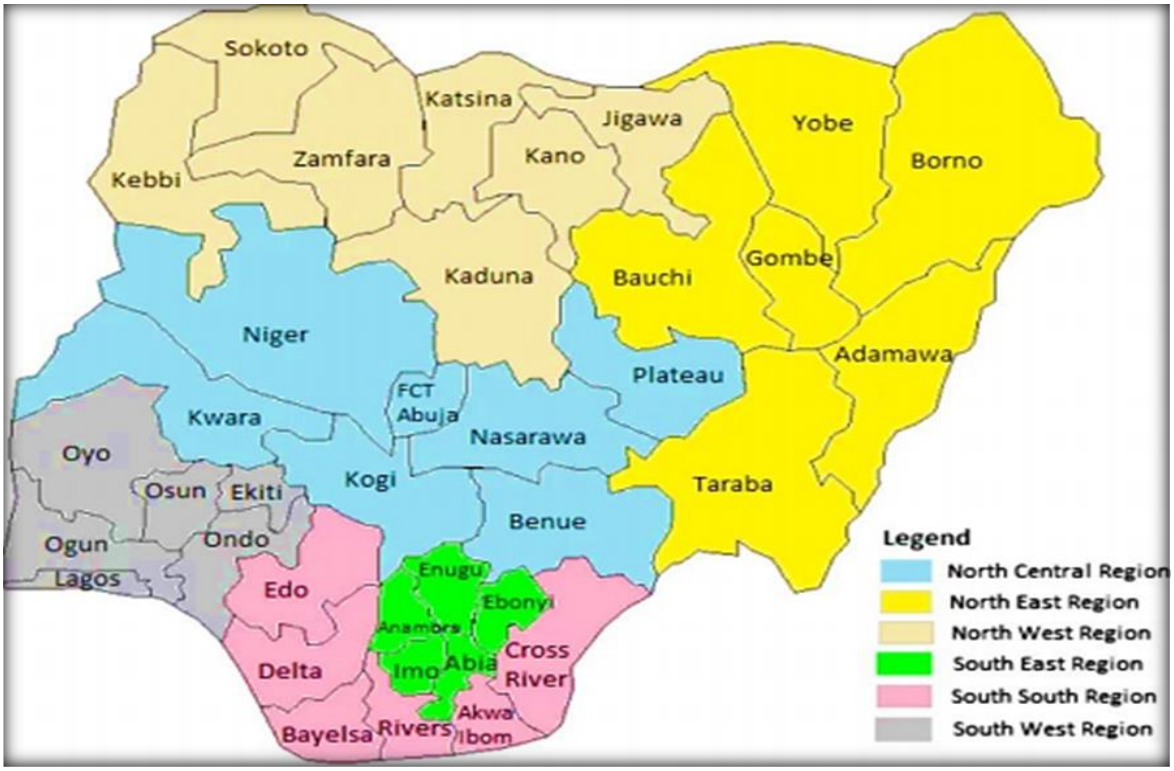


Figure 1: The map of Nigeria revealing the six (6) geopolitical zone. [30]

1.2 Socioeconomic profile

As of 2018, 40.1% of Nigeria's population live below the poverty line (Poverty headcount ratio at national poverty lines), while 39.1% lives on less than $1.90 in a day {Poverty headcount ratio at 1.90 dollars per day (PPP 2011)}.[37]

1.3 Health system structure

Nigeria operates a three-tier governance system: the federal, state, and local government areas (LGAs). The health system in Nigeria is a mixture of public, private, and donor-funded healthcare delivery, and it is structured into primary, secondary, and tertiary levels under these three tiers of the Nigerian governance system. The primary healthcare level is the point of entry to the health system, and the local government manages it; The state government manages the secondary healthcare level while the federal government oversees tertiary healthcare institutions (figure 2).[30,38]

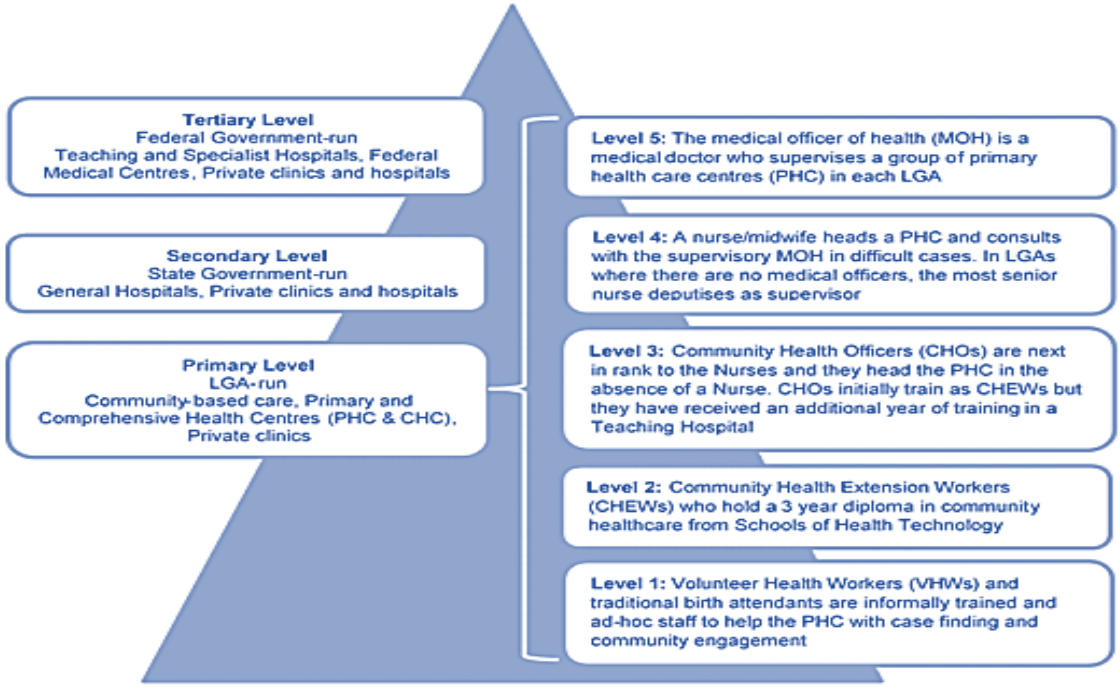


Figure 2: Nigeria health system structure. [30]

1.4 Health-seeking behaviour

Different researchers have defined the concept of health-seeking behaviour.[39,40] It is defined as a "sequence of remedial action that individuals (adolescent mother) undertake to rectify perceived ill-health." [40]

For this study, health-seeking behaviour is defined as specific actions an individual (adolescent mother) takes to maintain health or remedy health problems, including health behaviour during pregnancy, common ailments treatments, reliance on available health systems within the community, or prompt referral for care outside of the community. [1,2]

The word "Uptake" is synonymous with utilisation, and it means the actual usage or utilisation of available health services by the people for whom the service was designed. [4] Knowledge of health facilities availability does not guarantee its' uptake. The uptake of health services is affected by people's health-seeking behaviour, and it influences health outcomes. [2,41]

1.5 Maternal mortality

Maternal mortality is an indicator of pregnant women's uptake of MHS, and it is associated with improper health-seeking behaviours during pregnancy and childbirth. [42,43] Maternal mortality refers to "deaths due to complications from pregnancy or childbirth".[5]

In a developing country like Nigeria, maternal mortality is 14 times higher when compared with a developed country. [44] For Nigerian women, the lifelong risk of dying in pregnancy, childbearing, and post-delivery are 1 in 22 compared to developed countries' estimate of 1 in 4900. [45,46]

The world bank data shows that Nigeria has a very high maternal death, of about 917 maternal deaths/100,000 live births in 2017 (figure 3). [47-49] According to the 2017 Fragile State Index, Nigeria is ranked 4th among the 15 African countries on a "high alert" of maternal death. [47,49,50]

A recent report from National Health Management Information Systems (NHMIS) shows a drastic decrease in MMR from 917 maternal deaths per 100,000 live births in 2017 to about 195.8 maternal deaths per 100,000 live births in 2020.[49] However, the MMR is still very high in the northern region, with katsina having 651.9 and Jigawa having 424 maternal death per 100,000 live birth, as seen in figure 4. [49]

The reported MMR reduction between 2017-2020 is below Nigeria's national target of 288 per 100,000 live births. However, it is still far above the global minimum MMR of 140 per 100,000 live births and the SDG target of 70 per 100,000 live births, estimated as a global strategy towards ending preventable maternal mortality by 2030. [51–53]

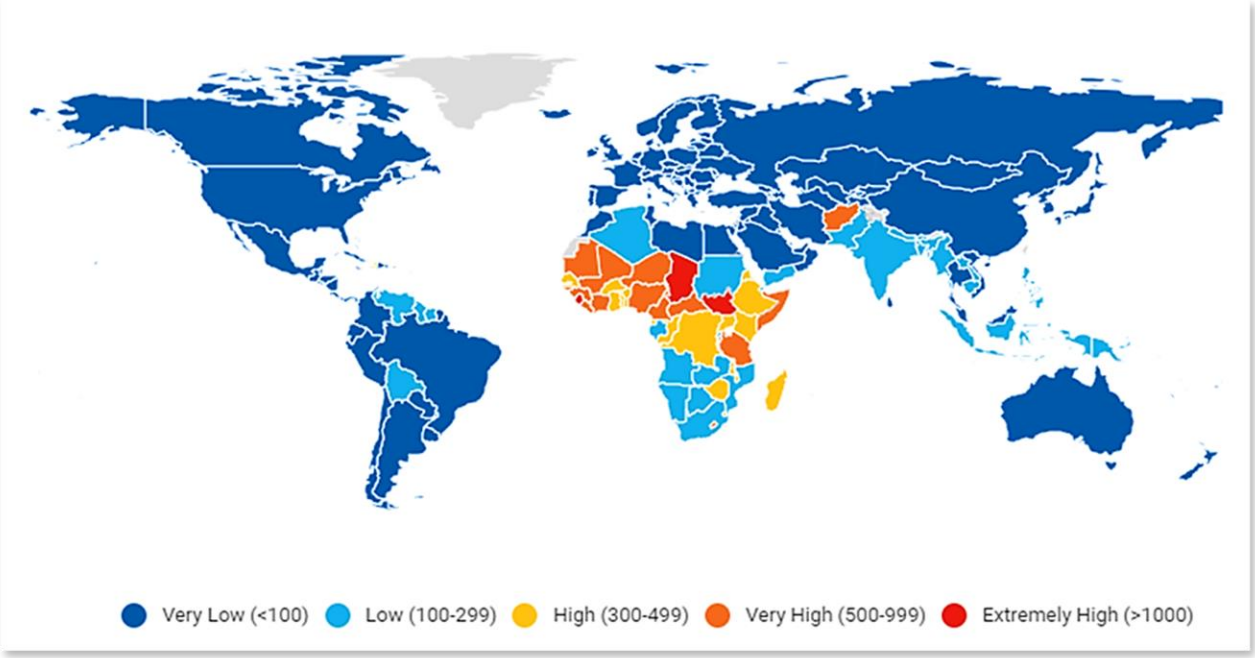


Figure 3: **Global map showing maternal mortality ratio per 100,000 live births (as of 2017).** [54]

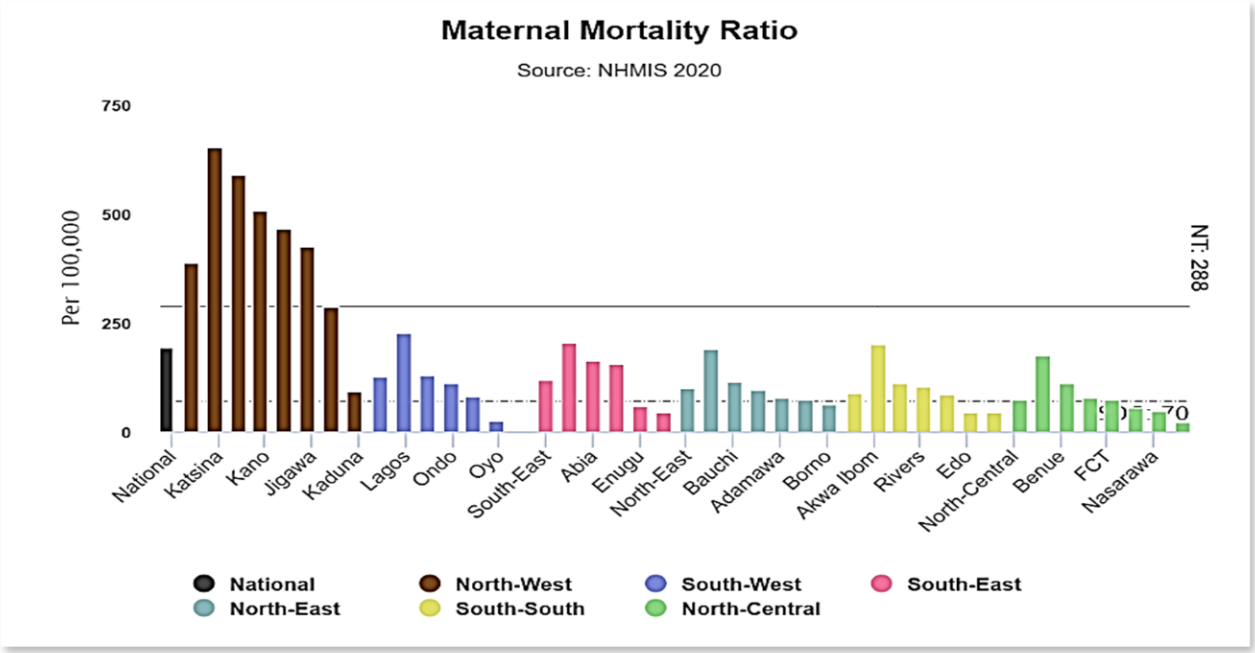


Figure 4: **Maternal Mortality Ratio per 100,000 live births in Nigeria.** [49]

1.6 Adolescent mothers

The United Nations (UN) defines adolescents as "individuals in the 10-19 years group", while adolescent pregnancy is the "pregnancy in a woman aged 10–19 years". [6] Adolescent mothers are the percentage of women between 15 – 19 years of age who already had children or are currently pregnant.[7]

In Nigeria, the percentage of adolescent mothers seems to be increasing. [34,55] The National population commission (NPC) estimated that by 2015, Nigeria might have up to about 60 million teenage mothers.[34,55] The 2018 NDHS reports the adolescent birth rate to be 106 births per 1000 women, above the national target of 90 percent with the highest rate in the northern region of Nigeria, where the average age of marriage and first intercourse is roughly 16 years (figure 5). [29,56]

Moreover, the report shows that 19 percent of adolescents have started bearing children, 14 percent have children already, while 4 percent are pregnant with their first child. [29,49,56]

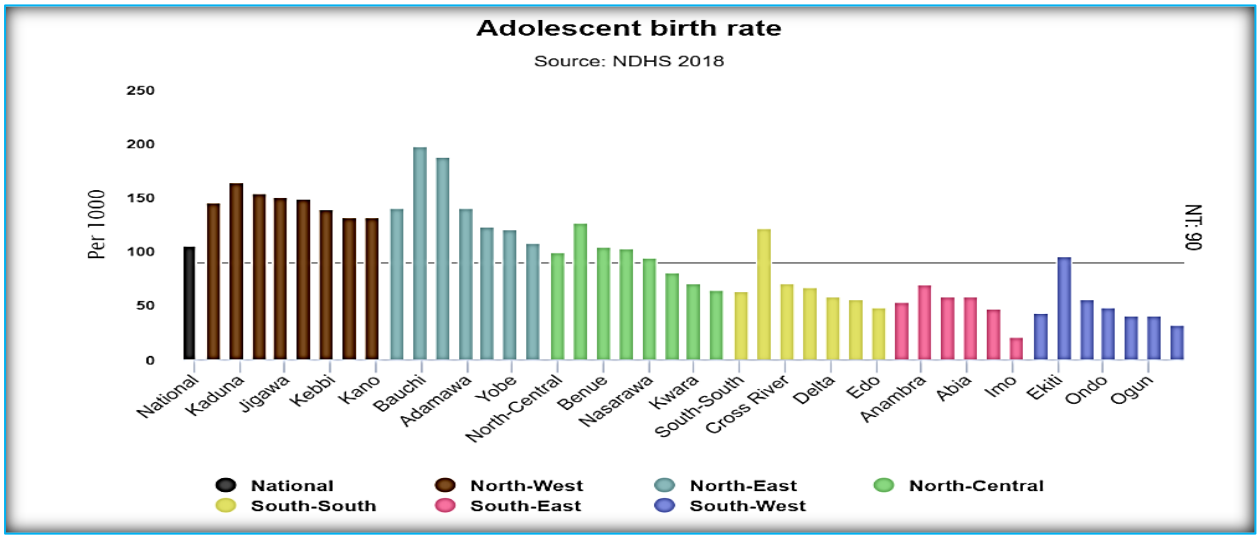


Figure 5: Adolescent birth rate per 1000 in Nigeria 2018. [49]

1.7 Maternal health services.

Maternal health services (MHS) include antenatal care (ANC), skilled birth delivery, and postnatal care (PNC). [57-61] MHS improve pregnancy outcomes and significantly reduce maternal death and morbidity. [62-65] The use of ANC predicts skilled birth delivery and PNC, meaning a woman who registered and used ANC is likely to have skilled birth delivery and follow-up for PNC.[66-68]

Antenatal care helps identify risks and complications associated with pregnancy and provides information about managing them. [69,70] Antenatal care is the most documented health-seeking in pregnancy. It includes mothers' education on self-care, routine check-ups, and laboratory investigations in a formal health facility. [1,41,60,71-77]

About four to eight antenatal care was recommended for every pregnant woman by World Health Organization to enable them to accomplish the maximum lifesaving benefit that antenatal care promises both mother and child.[57,69] Adolescent mothers who attend antenatal care by skilled birth attendants may likely have sufficient information about the importance of skilled birth delivery. [60,78,79] Hence it is a crucial strategy for reducing maternal mortality.[78,79]

Skilled birth delivery is the most vital intervention for reducing pregnancy-related mortality and disabilities. However, these services can only be effective in the presence of skilled birth attendance, a well-equipped health facility, and a swift referral system, which is still a problem in Nigeria and most developing countries. [78,79]

Postnatal care is the MHS received from birth to forty-two days post-delivery. It helps prevent the mother and child from the risk of ill health and death. About 60 percent of maternal death was said to have occurred during postnatal care in sub-Saharan Africa especially in Nigeria.[62,65,69,70,80]

1.8 Maternal health services coverage

The National target (NT) for ANC and PNC coverage in Nigeria is 80%, while the NT for skilled birth attendance is 57%. According to National Health Management

Information System (NHMIS), antenatal and postnatal coverage is below the national set target. [49,50] The recorded data for four antenatal coverage ranges from 49.1% in 2016, 56.8% in 2018, 19.1 % in 2020, and 15.1% in May 2021 as shown in table 1, and figure 6 & 7 (annex I). [30,49]

For skilled birth attendance coverage, data shows an increase in skilled birth attendance from 43.3% in 2018 to 90.4% in 2020 and 70.71% as of May 2021(as seen in table 1). [49] Though the value is above the set national target of 57 percent, the data might not be nationally representative because NHMIS data are services data mainly generated from government institutions and may be missing out on valuable data from private sectors. [81]

Most states in Nigeria have met the national target for skilled birth coverage of 57percent, except Borno (northeast region) and Osun (northwestern part) that are having skilled birth coverage of 55.4% and 52.6%, respectively, as shown in figure 8 and 9 (annexe II). [49] Although the skilled birth attendance coverage in Nigeria is high, studies still reveal that many mothers do not uptake skilled birth delivery.[29,50,82,83] In addition, the postnatal recorded data from 2018 to May,2021 ranges from 67%, 50.6% and 39.9% respectively (Table 1). [49,50]

Table 1: The coverage of the three maternal health services in Nigeria. [49]

INDICATORS	NHMIS (monthly)	NHMIS	NDHS
Skilled birth attendance (in percentage)	**70.71%** May 2021	**90.4%** 2020	**43.3%** 2018
Related Indicators			
ANC Coverage (at least 1 (in percentage)	**15.1%** May 2021	**19.1%** 2020	**56.8%** 2018
Postnatal care coverage ((in percentage)	**39.9%** May 2021	**50.6%** 2020	**67.0%** 2018

CHAPTER 2: PROBLEM STATEMENT, JUSTIFICATION, OBJECTIVES AND METHODOLOGY

This chapter consists of the problem statement, justification, study objectives, study methodology, and the selected conceptual framework.

2.1 Problem Statement

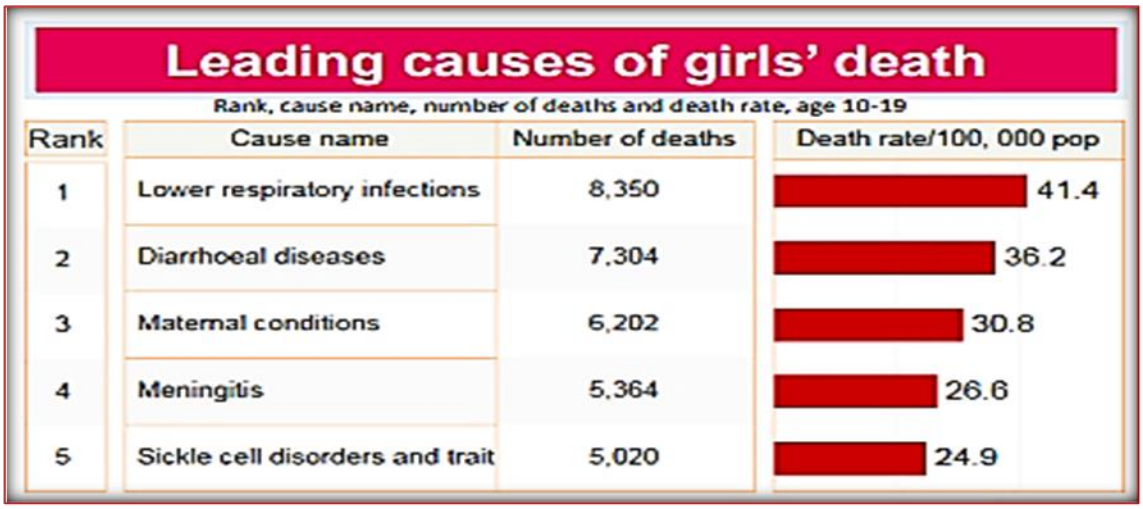
Adolescent motherhood is a significant social and public health problem associated with adverse maternal health outcomes. For example, adolescent mothers face a higher risk of pregnancy complications and death. The report shows that they are 1.5 times more likely to die when compared with 20-24 years during childbirth.[50,84]

In addition, children born to them are likely to die before their first-year birthday because they face an increased risk of ill-health than infants of older mothers. [23,55,85-87] Also, early motherhood makes most adolescent mothers a school dropout, which further predisposes them to unemployment and poverty with its associated effect in the future. [29,88]

Maternal Mortality Ratio (MMR) is a prominent indicator for measuring maternal health. [43,89,90] The Nigerian government and some agencies have done a lot to reduce MMR in Nigeria; [91-96] however, MMR is still high (as shown in Figures 3 & 4).[49,97] Moreover, there are no national data on adolescent MMR in Nigeria as adolescents are grouped under women of childbearing age (reproductive age).[49,97]

Among adolescent women, a pregnancy-related complication is the first leading cause of death globally and the third leading cause of death in Nigeria, with a total of about 6,202 recorded deaths, making it almost 31% deaths per 100,00 girls in 2018 (as shown in table 2).[19,20,97,98] Despite the higher risk this age group faces, they exhibit improper maternal health-seeking behaviours even in areas where the services are easily accessible and free.[23,56,99]

Table 2: Showing the leading cause of death among adolescent girls (who 2018). [68]



Most of these pregnancy complications are preventable, and maternal health services have been shown to give better maternal health outcomes.[19,20,100] Therefore, there is a need to improve adolescent mothers' health-seeking behaviours and increase their uptake of maternal health services. This is required to minimize the risk associated with their pregnancy and have a better maternal health outcome.

2.2 Justification

The availability of health facilities services does not guarantee its uptake.[23] Adequate uptake of maternal health services play a significant role in reducing maternal mortality and achieving the seemingly ambiguous SDG 3 agenda, [78,79]; however, adolescents exhibit improper maternal health-seeking behaviours.[23,56,101]

In order for policymakers to develop effective policy decisions on adolescent mothers' uptake of maternal health services, exploring the factors affecting their maternal health-seeking behaviours are vital. Although there have been studies on factors affecting uptake of MHS in Nigeria, there is often no specific attention on adolescent mothers as they are in groupings with other women of reproductive age (15-49 years) in Nigeria. [26,63,68,98,102-104]

Moreover, studies to identify the factors responsible for the improper uptake of maternal health services (MHS) among adolescent mothers are limited and inadequately understood. [56] in addition, identifying these factors is relevant to

achieve the United Nations (UN) target of reducing maternal mortality to below 70 per 100,000 births by the year 2030.[56,105]

This review intends to fill the identified gaps by identifying those factors affecting adolescent mothers' health-seeking behaviours and uptake of maternal health services. It will explore best practices that have worked in other countries with similar contexts and use the findings to inform policymakers and relevant stakeholders. This will enable them to formulate strategies that are more responsive among adolescent mothers and design adolescent-friendly maternal health services that will improve their health-seeking behaviour, thereby generally reducing maternal mortality in Nigeria.[28,29]

2.3 Study Objectives

2.3.1 General Objective:

To identify the factors affecting health-seeking behaviour and uptake of maternal health services among adolescent mothers in Nigeria, make recommendations to policymakers and relevant stakeholders to make policies and formulate more responsive strategies among adolescent mothers in Nigeria.

2.3.2 Specific Objectives

1. To identify the individual and interpersonal factors affecting the health-seeking behaviour and uptake of maternal health services by adolescent mothers in Nigeria.
2. To identify the community and organizational/policy factors affecting the health-seeking behaviour and uptake of maternal health services by adolescent mothers in Nigeria.
3. To analyse the promising strategies and best practices that influence the uptake of maternal health services by adolescent mothers in Nigeria and other similar settings in Africa.
4. To make recommendations to policymakers, clinicians, and relevant stakeholders to make policies and formulate strategies that are more

responsive to the health-seeking behaviour and uptake of maternal health services among adolescent mothers in Nigeria.

2.4 Methodology

The study employed a literature review. First, peer-reviewed journals were retrieved from databases like Elsevier and PubMed (Medline). Then, Google and google scholars were the search engines used to source peer-reviewed and grey literature (published and unpublished), after which snowballing was done to identify articles related to adolescent mothers, health-seeking behaviour and uptake of maternal health services.

Relevant articles that use qualitative, quantitative or mixed research methods were used to identify the factors affecting the health-seeking behaviour and uptake of maternal health services by adolescent mothers in Nigeria. Also, articles comprising women of reproductive age (15-49) were included due to limited information specific to adolescent mothers.

In addition, relevant information from the World Health Organization (WHO), Federal Ministry of Health, Nigeria Demographic and Health Survey (NDHS), United Nations Population Fund (UNFPA), National Health Management Information System

Inclusion and exclusion criteria

Articles published in English and within the last ten (10) years will be included except where important national policy documents are inclusive. In addition, Peer-reviewed and grey literature that uses qualitative, quantitative, or mixed research methods will be inclusive if it relates to health-seeking behaviour and uptake of maternal health services among adolescent mothers (both married and unmarried) and women of reproductive age in Nigeria.

Country specific reports like Nigeria Demographic Health Survey (NDHS) will be included because it provides reliable estimates of related health indicators among adolescents (15-19). In addition, relevant articles from Low and middle-Income Countries (LMICs) and African countries with similar characteristics are included due

to limited reports on the health-seeking behaviour and uptake of maternal health services among adolescent mothers in Nigeria, and to enable the researchers to have a broader view of the subject matter.

Articles with access to only publications abstracts are excluded

2.4.1 Search Strategy, terms, and combinations

The researcher used different keywords combination in the literature search. About 377 published and grey literature were retrieved. However, after reading the abstract and considering the inclusion and exclusion criteria, some were excluded. The key terms were combined using Boolean operators and searched based on the target group, uptake of maternal health services, health-seeking behaviour, and the stated objectives.

The searched term was on the different factors affecting the health-seeking behaviour and uptake of maternal health services by adolescent mothers in Nigeria. It also includes the best practices that influence the uptake of maternal health services among adolescent mothers in Nigeria and other similar settings in west Africa. The exact keywords and search strategies are displayed below (Table 3 & 4).

Table 3: Showing the search strategies summary

S/N	STUDY OBJECTIVES	SEARCH ENGINES/DATABASE	TYPES OF LITERATURE	USED KEYWORDS
1	To identify the individual and interpersonal factors affecting the health-seeking behaviour and uptake of maternal health services among adolescent mothers in Nigeria.	Google Scholar, Google VU-Library PubMed Elsevier	-Peer-reviewed articles -Published and Unpublished articles -Journals -Grey literature National/International reports including: World Health Organization (WHO) Federal Ministry of Health Nigeria Demographic and Health Survey (NDHS) United Nations Population Fund (UNFPA) World Bank United Nations (UN) United Nations Children Fund (UNICEF)	Health-seeking behaviour, health seeking behavior health-seeking behavior, individual factors, interpersonal factors, age, education, adolescent, teenagers, knowledge, maternal mortality, adolescent, husband knowledge, maternal health services, maternal services, maternal health services, financial constraints, poverty, decision-making autonomy, stigmatisation, discrimination, Peer pressure, family pressure, family tradition, support system.
2	To identify the community and organizational/policy factors affecting the health-seeking behaviour and uptake of maternal health services among adolescent mothers in Nigeria	Google Scholar, Google VU-Library PubMed Elsevier		Financial status, Cultural beliefs, religious belief, Traditional beliefs, stigmatisation, community factors, organizational factors, institutional factors, discriminations, societal discrimination, maternal health services, maternal services affordability, maternal services accessibility, perceived quality, health worker, health worker attitudes, health care-givers attitude, health worker behaviour, interventions, health policies, national policies, reproductive health policies.
3	To analyse the promising strategies and best practices that influence the uptake of maternal health services among adolescent mothers in Nigeria and other similar settings in Africa.	Google Scholar, Google VU-Library PubMed		Promising strategies, best practices, maternal health services, youth-friendly services, adolescent-friendly services, intervention, Nigeria, Ghana, Rwanda, Uganda, Kenya Senegal, Malawi, West Africa, sub-Saharan Africa, Africa.

Table 4: Showing combination of keywords and Boolean operators.

KEYWORDS	OR	"maternal health services"	"factors"	"maternal mortality"	"health-seeking behaviour"	"uptake"	"adolescent"	"Nigeria"	"intervention"
SYNONYMS		AND							
		"maternal healthcare services"	"individual factors"	"maternal death"	"health-seeking behavior"	"utilization"	"adolescents"	"Nigeria"	"interventions"
		"antenatal care"	"interpersonal factors"	"maternal deaths"	"care-seeking behaviour"	"utilization's"	"adolescence"	"west-Africa"	"best practice"
		"postnatal care"	"community factors"		"care-seeking behavior"	"utilisation"	"teenage girls"	"Africa"	"best practices"
		"skilled birth care"	"organizational factors"			"utilisation's"	"teenagers"	"sub-Saharan Africa"	"promising strategies"
		"skilled birth attendance"	"national health policy"			"use"	"teens"	low and middle-income countries	"promising strategy"
		"professional assisted birth"	"socio-cultural factors"						"effective intervention "
		"professional assisted delivery"	"environmental factors"						

2.4.2 Limitations of Methodology

The study may have some language bias because only articles written in the English language were reviewed. As a result, some vital information might be missing from African countries with similar characteristics speaking other official languages. In addition, limited articles had specific data for adolescents between the described age group 15-19. Finally, the review was based on the information extracted from the available literature, and the researcher could not validate the quality of their collected data. Despite the limitations above, the strength of this study lies in the ability to increase the overall knowledge. Also, using some nationally accepted and country-specific secondary data reports guaranteed that findings have the power of representation.

2.5 Conceptual Framework

The socioecological model addresses various complex factors that guide an individual's decision to uptake maternal health services. Analyzing these factors is crucial to ensuring safe maternal health outcomes among adolescent mothers, reducing maternal mortality to below 70 deaths per 100,000 live births by 2030 (SDG 3). [23,106]

The different conceptual frameworks used to analyze the uptake of health services include Andersen's behavioural model, Rosenstock's health belief model (Rosenstock 1974), three delay models (Thaddeus and Maine 1994), and the socioecological model, among others.[107]

This study used an adapted socioecological model (SEM) (figure 10) to identify the various interlinked factors affecting health-seeking behaviour and uptake of maternal health services among adolescent mothers in Nigeria. The model was chosen because it identifies personal and environmental factors affecting health-seeking behaviour and uptake of maternal health services across all levels. It explains the complicated interaction between the levels of the SEM. The intersecting rings in the model demonstrate how factors at one level impact the factors at another level.[21]

The socioecological model (SEM) levels used in this analysis include the individual, interpersonal, community, and organizational/policy levels. The chosen model was adapted because some of the factors discussed at the systemic level of the primary model fit in more under the community level. Also, some factors relevant to Nigeria were adapted to contextualize the model and enhance a broader view. [108,109]

This model is helpful to identify various intertwined factors affecting health-seeking behaviours and uptake of maternal health services among adolescent mothers and contributes to accessible works of literature on factors affecting maternal health-seeking behaviour. [108,109]

The result will help inform policymakers and relevant stakeholders to formulate strategies that are more responsive to the health-seeking behaviour and uptake of maternal health services among adolescent mothers. It will also help to design adolescent-friendly maternal health services that will help improve the uptake of maternal health services, thereby generally reducing the incidence of maternal mortality in Nigeria.[28,29]

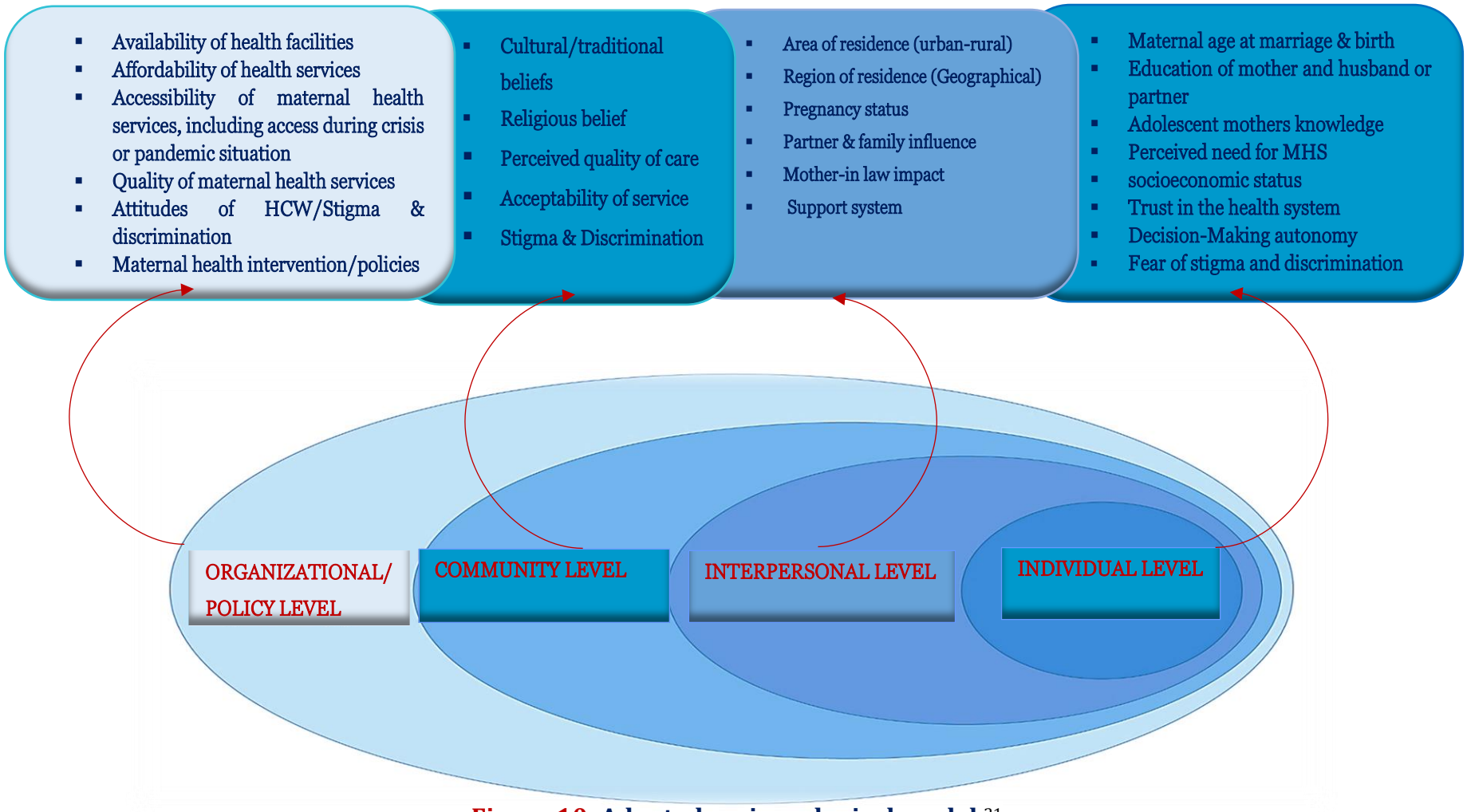


Figure 10: Adapted socioecological model [21]

CHAPTER 3: RESULTS/FINDINGS IN LINE WITH THE FRAMEWORK

3.0 Introduction

Different factors affect adolescent mothers' health-seeking behaviour and uptake of maternal health services in Nigeria and other countries with similar settings in Africa. According to the socioecological model, these factors are interrelated and include individual, interpersonal, community, and organizational/policy factors. This chapter used the adapted socioecological model to illustrate these factors.

3.1 INDIVIDUAL-LEVEL FACTORS

This level explains the following individual factors in line with the model: Maternal age at marriage and birth; educational status of adolescent mother and her partners; knowledge of risk associated with pregnancy complication; the perceived need for maternal health services; economic status; trust in the health system; decision-making autonomy; fear of stigma and discrimination.

3.1.1 *Maternal age at marriage and childbirth*

The mother's age at birth affects the maternal health-seeking behaviour of adolescent mothers. [24,56,110] NDHS key indicators report of 2018 show that adolescent motherhood increases speedily with age, ranging from two to thirty-seven percent at age 15 and 19, respectively. [111]

A study reports that adolescent mothers exposed to early marriage often start childbearing early. [13,111] Early marriage is common among uneducated and poor women, predisposing them to unwanted pregnancy and risk of death.[112] This result agrees with the recent findings by another study, which report a significant association between maternal age at birth and the uptake of maternal health services, stating that this is common among young Muslim mothers in northern Nigeria. [24]

The uptake of maternal health services was lower among adolescent mothers when compared with older mothers, especially in northern Nigeria, where child marriage is prevalent.[24,66]Additionally, disparities exist in young women's age of marriage and

childbearing depending on their education level and area of residence (rural-urban).

3.1.2 *Educational status of mothers and husband/partners*

Education is a primary key to improving maternal health and achieving SDG in general. [113,114] According to WHO, females' educational status is a strong predictor of maternal mortality; in other words, the higher the educational level of a woman, the higher the chance of survival for the woman and her child because educated women make healthy decisions about their health. [115,116]

An uneducated woman is three times more at risk of maternal mortality when compared with educated women. [14,63] A study explains that women's education is significant to positive pregnancy outcomes and a modifying factor for women's autonomy.[63,117]

The education status of adolescent mothers and their husbands or partners is the most significant factor affecting adolescent mothers' health-seeking behaviour. [24,29,118] Studies reveal that the uptake of any maternal health services was higher among adolescent mothers and partners who had at least secondary school or higher level of education than the uneducated. Further stating that poor and uneducated women do not use skilled birth delivery, making them vulnerable to maternal death and disabilities. [65,66,119]

Also, education increases mothers' knowledge of the benefits of maternal health services and help them make good decisions about their health.[18] A study reported that a low level of education among young mothers in the north significantly influences maternal health outcomes.[118] In line with this, a study in Malawi opined that uptake of maternal health services was higher among adolescents who marry an educated husband. [120]

3.1.3 *Adolescent mothers' knowledge and perceived need for maternal health services*

Scholars reported a significant association between knowledge of pregnancy risk and maternal health-seeking behaviour. [121] Understanding adolescent mothers' risk of pregnancy complications and the benefit of maternal health services can affect antenatal, skilled birth delivery, and postnatal care uptake. [50]

Christian urban dwellers who were knowledgeable about the causes of maternal mortality in the southern part of Nigeria had better health-seeking behaviour than the rural dwellers in the northern part of Nigeria. [56,122] Also, improper maternal health-seeking behaviour was recorded among women in the Northern region, with insufficient knowledge of causes of maternal death and benefits of maternal health services, which the scholars linked to inadequate education and poverty.[56]

Furthermore, the perceived need for maternal health services affects health-seeking behaviour and the uptake of maternal health services. Most women who never experience any pregnancy complications tend not to see the need for using formal maternal health services. [121]

3.1.4 *Socio-economic status*

Socioeconomic status can affect health outcomes by influencing health-seeking behaviour. [123,124] The rich women are ten times more likely to have skilled birth delivery than the poor and vulnerable women. [93] The high out-of-pocket expenditure in Nigeria prevents poor women from accessing maternal health services, thereby widening inequality in accessing health facilities. Studies show that poor women have a higher risk of maternal death; likewise, uneducated and poor women are more susceptible to maternal death and disabilities. [18,125]

Countless adolescent mothers, especially those in rural areas, do not seek maternal health facilities due to poverty, long-distance to health facilities, and cultural barriers.[125] Scholars opined that the high cost of care affects health-seeking behaviour. [126] This is in line with another study in the Benue state of Nigeria which reveals that the high price of services was a significant barrier to the uptake of available maternal and child health services.[92]

This may be the case in other parts of Nigeria because about 40 percent of Nigeria's overall population lives below the poverty line of 1.90 US dollars (855 Naira) per day or 361 US dollars (137.4 thousand Naira) per year, making it challenging to seek needed maternal health services. [30,127–129]

In contrast to prior views, a study argued that the improper health-seeking behaviour and uptake of maternal health services among most adolescent mothers in rural areas is irrespective of financial status, but majorly due to lack of knowledge about pregnancy-related signs and complications. [130] This was supported by another scholar who stated that even in areas where maternal health services were free and accessible, there was still a record of improper uptake of maternal health services. [99]

3.1.5 *Trust in the health system*

Studies show that a lack of trust in the system can affect the acceptability of maternal health services among individuals and the entire community. Further stating that previous personal negative experiences influence the lack of trust in the health system, alongside cultural and religious beliefs. [65,131,132]

Mothers' previous childbirth experience negatively affects maternal health services' uptake and influences her perception of formal health facilities. [65,131,132] Prior low quality of care, abuse and mistreatment received from health workers have damaged many women's trust in the formal health system and impacted their decision to uptake maternal health services. [65,131,132]

The belief in traditional birth coupled with prior unpleasant experiences of mothers with health workers makes them prioritize traditional birth attendance during childbirth because they believe with TBA's, they can deliver in peace without any abuse and mistreatments. [133–135]

3.1.6 *Decision-making autonomy*

Decision-making autonomy affects the uptake of maternal health services by adolescent mothers due to their age. [136-138] Studies report a higher association between women's level of autonomy and uptake of maternal health services, stating that women's dependency on husbands or partners affects their decision-making autonomy, which negatively affects the uptake of skilled birth delivery. [56,72,132,139]

A study shows that maternal health services are more likely among women with decision-making autonomy and a positive perception of health services.[140] Researchers reveal a low decision-making autonomy level among Nigeria women and relate it to the fact that their husbands or partners are responsible for making their health decision. [137] They further explain that occupation and level of education of husband or partners predict a woman health decision-making [137]

Another study reveals that in poverty situations where the financial responsibility of maternal health services falls on the family, mothers-in-law, and husband or partners, they are often the decision-makers as to where and when the uptake of maternal health services occurs. [123]

Scholars explained that a patriarchal society reduces women's rights. [141] Additionally, women's autonomy is often suppressed in a patriarchal society. [117] The study further explained that the biblical position of men as the head of the family further enhances their decision-making power. [117]

Studies from Kenya and Benin-republic reveal that culture affects women's autonomy and limits their decision-making power, especially in societies that see women as second-class citizens. [141-143] This low decision-making autonomy among women affect their uptake of skilled birth delivery because they must wait for their partners for financial assistance or get permission according to religious rules or cultural norms.[62,65,144,145]

Contrary to the prior line of thoughts, a study revealed that decision-making autonomy does not improve women uptake of maternal health services, stating that

household economic level and the level of education of mothers are the significant factors affecting the uptake of maternal health services [146]

3.1.7 *Fear of stigma and discrimination*

Stigma, discrimination from peers, rejection from family, and violence by partners are the social consequences of pregnant, unmarried adolescents.[147–149] Studies show that adolescent mothers are being judged and discriminated against by family and community members who perceived them as wayward for getting pregnant at an early age as against the social norm. [150,151]

In the western part of Nigeria, where adolescents are expected to get pregnant only after marriage, pregnant adolescents face a lot of stigma and discrimination from community members.[56,150,152] in addition, some may not use formal health services for fear of being judged and discriminated against by health workers who often treat them with disdain because of their young age at pregnancy. [42,43,56,153]

Poor adolescent mothers rely on family members for financial support to register and pay for antenatal care costs. When compared with their counterparts in high social class, they get more maltreatment from health workers who use derogatory words on them because they cannot afford some services and cannot bribe health workers [43,154–163]

3.2 INTERPERSONAL LEVEL FACTORS

3.2.1 *Area of residence (urban-rural)*

Scholars reveal the prevalence of improper maternal health-seeking behaviour in many areas in Nigeria. [72,75,76] Studies show that area of residence influences the prevalence of teenage pregnancy and affects the uptake of antenatal care and skilled birth delivery. [34,55]

A report explained that twenty-seven percent of adolescent living in the rural areas begins childbearing earlier when compared with eight percent living in urban

areas.[111] Another study opined that teenage pregnancy in rural areas (where poverty and illiteracy are more prevalent) is three times more than in urban areas.[29,34,55]

In the same line, the uptake of maternal health services is high among adolescent mothers living in urban areas and relate it to the fact that urban dwellers often belong to upper wealth quintiles, have a high level of education, and can afford to be attended to by skilled care providers. [68,164]

Furthermore, a study revealed that low uptake of antenatal care in the northwest region of Nigeria is more among the rural dwellers when compared with the urban dwellers. [71] The scholars associated that to the high poverty level in the rural areas, early age of marriage, low maternal and husband education, Islamic religion, and long-distance between the residence and health facility. [71]

Other Scholars explain that urban residents often seek maternal health services than rural dwellers, possibly due to their high level of education. [66,165,166] The improper health-seeking behaviour among southern rural dwellers was also linked to the fact that they cannot access quality maternal health services due to the long distance between the residential area and the health facilities.[123]

Additionally, a study reported a high incidence of home delivery with unskilled birth attendance in some rural areas.[167] This was supported by other studies explaining that many pregnant mothers in rural areas deliver at home without a skilled birth attendance due to inadequate knowledge about the potential danger of pregnancy complications, financial constraints, and cultural beliefs that encourage traditional birth.[112,141,142,168,169]

3.2.2 *Region of residence*

Disparities exist in the incidence of adolescent motherhood among the different regions and geopolitical zone in Nigeria, with twenty-nine percent of adolescent mothers in the northwest, compared with nine percent and six percent in the southwest and southeast, respectively.[111]

A study linked low uptake of antenatal care in Nigeria to factors like region of residence, lack of maternal education, and far distance to the health facilities. [75] This is in line with another study where it was revealed that the low uptake of postnatal care services in Nigeria is linked to illiteracy, financial constraints, region of residence, and far distance between the available health facilities and their home.[72]

NDHS 2013 shows that uptake of maternal health services is lower in the northern region, stating that only seven percent of pregnant women have skilled birth delivery in Jigawa state.[170] Other studies link this low uptake of maternal health services to unrest in conflict regions like Bokoharam terrorist group in the north and the militancy in the Niger-Delta region, stating that women fear being abducted on their way to the health facility.[171,172]

In addition, a study revealed that women living in the southern region of Nigeria were likely to have skilled birth delivery compared with those living in the northern region and linked this to higher education levels among the southern Nigeria dwellers. [165]

3.2.3 *Pregnancy status, partners/family influence, and Mother-in-law's impact*

Scholars reported that Mothers-in-law play a critical role in supporting or hindering the use of skilled maternal health services. [65,131,132,139] A scholar concedes that mother-in-law's opinion significantly affects the maternal health-seeking behaviour of their daughter-in-law. [173]

A study showed a significant association between pregnancy status (planned or unplanned) and health-seeking behaviour. [174] Further adding that the influence of peers and family support significantly influences health-seeking behaviour. [174] Another report opined that women with more than four children tend to show improper attitudes towards the uptake of maternal health services. [50]

3.2.4 *Support system*

Adolescents' mothers are at risk of not getting antenatal care without adequate support from their parents. Good support from family and friends towards the uptake of antenatal care can help minimise risks associated with adolescent pregnancy. [56]

Without proper support from the family or trusted adult in the community, pregnant adolescents might not be encouraged to register for or attend antenatal care. Those having severe early pregnancy symptoms might not eat well, rest well or seek appropriate care. [56,175] A positive support system is necessary for helping adolescent mothers get needed physical and emotional support to stay healthy during pregnancy and childbirth.[175]

3.3 COMMUNITY-LEVEL FACTORS

3.3.1 *Cultural and traditional beliefs*

Nigeria is rich in diverse cultures, some of which affect a woman's health-seeking behaviour and uptake of maternal health services. [117,145,176] Cultural and religious beliefs play a vital role in a woman's decision to uptake maternal health services in Nigeria. Scholars linked this to the patriarchal and hierarchical society, where men tend to exercise significant influence over women's decision-making autonomy.[117]

Another study reveals that some women prefer to use unskilled and traditional birth attendants instead of skilled professionals due to misconceptions and cultural norms that make them perceive pregnancy and childbirth as a natural health process requiring no assistance. [177] This finding support other studies which revealed that due to cultural norms, religion, and traditions believe, most mothers and their babies are predisposed to a severe risk of ill-health or death. [117,142,178]

Researchers found that even when adolescent mothers have the needed knowledge about pregnancy and its complications, they tend to show improper maternal health-seeking behaviour due to poverty and religious and cultural beliefs. [79,117,141,142,145,176,179,180]

The studies added that a poor woman could not access care due to the high cost of care. Also, some cultural norms encourage traditional birth and forbid women from

talking about their pregnancy at early stages, which prevents them from early registrations. Some women that even register for antenatal care still prefer to deliver with traditional birth attendants or in faith-based facilities because they believe in the efficacy of herbs, holy water, anointing oil, and other sacred items. All these prevent them from seeking proper maternal care. [79,117,141,142,145,176,179,180]

Other studies explain that most women prefer traditional birth attendants (TBAs) because they believe in the wholeness of herbs during pregnancy and childbirth, coupled with the attributed passionate care by the TBAs. Most pregnant women delay registering for antenatal because they believe that supernatural forces and witchcraft can negatively influence the outcome of pregnancy.[41,142]

3.3.2 *Religious belief*

Religion is an essential aspect of social life. It plays a significant role in health-seeking behaviour and explains disparities in the uptake of maternal health services between and within countries. [123,181] Some Muslims prevent male health workers from attending to their wives, while some Christian believers do not seek maternal health services due to their belief against orthodox treatments. [123,139]

For example, the Jehovah's Witnesses do not believe in blood transfusion, and the Faith Tabernacle church does not administer orthodox medicine. [123] Most rural dwellers often attached spiritual reasons to every situation, making them prevent seeking care from skilled health workers. [123]

Researchers opined that the uptake of antenatal care and skilled birth delivery in southern Nigeria are higher when compared to the northern part; likewise, the uptake of maternal health services is lower among the northern Muslims than the southern Christian.[83,182–184]

A study explains that Islam is a way of life that governs behaviour in northern Nigeria, stating that a Muslim woman requires permission from her husband before leaving the house. Also, women are not supposed to expose their bodies to anyone outside their husbands, including male health workers. [185] This may affect their decision-

making autonomy in seeking maternal health services and hinders their uptake of maternal health services. [185]

Contrary to the prior opinion, a scholar argued that religion is not a significant predictive factor in the uptake of maternal health services, explaining that the low uptake of skilled birth delivery among Muslim women is due to health workers' insensitive attitude towards their religious beliefs needs. [186] In the same vein, other studies linked low uptake of maternal health services found among Muslim women to the impact of culture, financial dependence on husband or partners, and distance to the health facility. [182,185]

3.3.3 Perceived *quality of care/ acceptability of service*

Studies have linked low uptake of maternal health services to the negative perception that the health workers are not friendly. [187-189] A negative perception of maternal health services affects its acceptability and uptake even in the community, further affecting the overall maternal health outcomes. [188,189]

A study explains that the acceptability and uptake of maternal health services depend on the mothers' perception. Stating that even in areas where there is free accessibility to maternal health services, the perception that health workers have a unpleasant attitude, coupled with poor perceived quality of care and lack of trust in the available health system, affects its acceptability.[190]

Other scholars opined that the perception that health workers expressed negative attitudes towards pregnant adolescents due to cultural norms of sexual abstinence until marriage is a negative stereotype that significantly serves as a barrier to accepting and accessing maternal health services[189]

Additionally, a study revealed that the acceptability of maternal health services is determined by the perception of care, stating that most pregnant women seek care from sub-standard maternity homes because of the perception that these facilities are more caring. The study adds that TBAs invest more time caring for pregnant women

than some skilled care providers who are unsupportive, especially towards adolescent mothers, due to the negative stereotype about teenage pregnancy. [188]

3.3.4 *Stigma and Discrimination*

Studies revealed that Stigma is a worldwide hindrance to health-seeking behaviour. Adding that discrimination tends to deny people social acceptance and further promote inequity in society.[191,192] Some communities treated adolescent mothers with prejudice and denied them access to an adequate education.[193]

A study in South Africa reports that most adolescent mothers exhibit improper health-seeking behaviour during pregnancy due to discrimination from family and community members who see them as wayward and irresponsible because of their age at pregnancy. [102]

The study further explains that this discrimination and being judgmental that the adolescent mothers face with their peers, family, and community make them shy away from attending antenatal care. [102]

3.4 ORGANISATIONAL/POLICY LEVEL FACTORS

This level discusses health-system-related factors and maternal health policies. It consists of factors like the availability of adolescent-friendly maternal health services, affordability of services, accessibility of services; perceived quality of service; attitudes of health workers.

3.4.1 *Availability of health facilities*

More than half of Nigerian women have experienced problems accessing maternal health services due to the unavailability of formal facilities in their areas. [112,123,144] Scholars reported that the availability of quality maternal health services during pregnancy could help to reduce maternal mortality, and that shortage of quality health facilities in the rural areas contributes to their improper maternal health-seeking behaviour and poor health outcome.[112,123,144]

A study reported that rural dwellers often suffer neglect regarding the distribution of health facilities in Nigeria. Even where health facilities were available, there is a lack

of skilled care providers or needed equipment. [123] The study further revealed that many rural dwellers exhibit improper uptake of maternal health services due to poverty, poor road, and long-distance between the area of residence and available health facilities. [123]

3.4.2 *Affordability of quality maternal health services*

The presence of an accessible and affordable maternal health service is also a factor affecting health-seeking behaviour. Due to the high out-of-pocket payment system for health care in Nigeria, adolescents might not be able to pay for service costs because they generally have less income than adults. [194]

A study revealed that most adolescents still rely on partners or family members for money to access available health services, making it difficult for them to afford maternal health services [130] Other scholars opined that the cost of treatment influences women's decision-making in the uptake of maternal health services, because the poor may not be able to afford the expensive cost of care, making them to either avoid seeking care or seek care from unskilled birth attendances. [195]

3.4.*3* *Accessibility of maternal health services, including access during crisis or pandemic situation*

Researchers acknowledge the importance of having a skilled birth delivery. [72,109,139] Adding that women who received maternal health services from qualified personnel had a better pregnancy outcome and adjusted well to postnatal life than those who did not receive such maternal health services. [109,196]

Scholars reported that unskilled delivery increases the risk of maternal mortality among those who did not register for antenatal care, have unskilled childbirth, and did not follow up with postnatal care.[197] However, many studies revealed that difficulties in physical and financial accessibility to maternal health services in some regions are why some pregnant women are not using these maternal health services. [112,123,144]

Other scholars linked difficulty in accessing maternal health facilities in rural areas to poor socioeconomic status.[57] They added that the lack of knowledge regarding pregnancy complications due to low education, poverty, unskilled birth attendants, perceived quality of services, long waiting time, lack of autonomy, and harmful cultural beliefs lead to improper uptake of maternal health services. [58,62,65]

Moreover, crisis or pandemic situations (such as COVID-19) can affect access to formal health facilities. Several studies have revealed the impact of covid-19 on the uptake of maternal health services in Nigeria. [198–200] A study indicated that about 5621 covid-19 cases and 179 deaths were recorded in Nigeria on 17th May 2020. The scholar likened the pandemic to "war" because of its devastating effect on the health system. [198]

Antenatal care, skilled birth delivery, and postnatal care are essential and should continue irrespective of the COVID-19 pandemics. [201,202] However, due to the COVID-19 pandemic, these services were disrupted in many facilities. Many pregnant mothers faced challenges ranging from difficulty accessing health facilities, poor communication between pregnant women and care providers, movement restrictions, problems with transportation, and long waiting hours before receiving care. [198–201]

A study revealed that the COVID-19 pandemic had a disastrous effect on health facilities and affected the uptake of maternal health services. [201] Another study conceded that due to limited access to maternal health services in this current pandemic, about 30% of maternal and child death might occur.[203] In addition, maternal mortality was projected to rise by 17 percent in moderate situations and 43 percent in the most terrible conditions. [201,202]

Moreover, during the pandemic, Health workers might not deliver quality care as required due to fear of being exposed to the covid-19 virus from the client. Likewise, most pregnant women were not seeking maternal health services for fear of contracting the covid-19. [198–201]

3.4.4 *Quality of maternal health service*

Quality of care is subjective and different from one context to another. Nigerian women used various words to define quality ranging from 'superior', 'good', 'excellent' ', better', or '*ogbonge (Nigerian Pidgin English)*'. [204]

Some women described quality maternal health service as the ability to render honest and truthful services. They further said that some providers were not genuine about the actual state of pregnancy and only carried out caesarean sections and other investigative procedures to make money. This untruthful attitude is why some women avoid formal maternal health facilities. [204]

The poor perception of quality-of-care caused low uptake of maternal health services, and it was linked to the negative attitude of health workers, intense belief in TBA, unavailability of required items and inaccessibility of health facilities, including physical and financial inaccessibility.[204–206]

On the contrary, another study found that antenatal attendees report satisfaction with the quality of maternal health services they receive and link it to good staff attitude, short waiting time, and affordable cost of services that increase the uptake of formal education MHC services. [207]

3.4.5 *Attitudes of health workers*

Health-seeking behaviour is also affected by whether the services are associated with stigma or discrimination. [192,208]

Several scholars believed that the attitudes of health workers affect the uptake of maternal health services, especially among adolescent mothers. [99,102,137,209,210] A study revealed that Nigeria womens' mistreatment in the form of verbal and physical abuse from some health workers during childbirth was why some women avoid health facility delivery.[209]

Another study showed that some health workers have a judgmental attitude about the age of adolescent mothers at pregnancy and childbirth, which often pushes adolescent mothers away from seeking maternal health services. [130] the study confirmed that adolescent mothers prefer accessible and affordable maternal health services; they want treatment with utmost privacy, respect, and devoid of judgmental.[130]

Scholars conceded that adolescent women were unwilling to access antenatal care due to the hostile attitude of health workers, distance to health facilities, cultural and religious beliefs, place of residence, level of income, and educational status of their partners. [211] Adding that unpleasant attitude of health workers such as slapping, physically restrain to bed during delivery, detainment at the health facilities for mothers who cannot afford to pay for delivery fees, were among the factors preventing the uptake of maternal health services. [212]

3.4.6 *Maternal health Intervention and policies*

Nigeria's government has invested in diverse programmes and implemented several policies to improve maternal and child health services in various target states and regions. [94,213] These interventions include but are not limited to: The Basic Healthcare Provision Funds (BHCPF); Midwife Service Scheme (MSS); Subsidy Reinvestment and Empowerment Programme (SURE-P); The re-introduction of Basic Midwifery programme as essential qualification, task-shifting and task-sharing policy; Saving One Million Lives Programme (SOML); The Nigeria State Health Investment Project (NSHIP); Health Systems Development Projects (HSDP). [91,93,94,213–216] Most of these programmes recorded success rates; however, sustainability is a significant problem.

Nigeria's task-shifting and task-sharing policy aim to meet the universal coverage of health needs by mobilising available human resources to ensure equity, accessibility, and effectiveness in delivering essential health services. However, some state shows poor political will and inadequate funds for its sustainability, as the governors refuse to pay the health workers. [91,94,213–216]

Policies and strategies also cover adolescent sexual and reproductive health (SRH). The policies address teenage pregnancy and support SRH services but do not provide accessibility and health workers training for these services. [216-218] The legal age of 18 attached act as a barrier to accessing these services because it put the decision to access in the hands of a third party, either parents or health workers.[217,218] The National policies that support adolescents include but are not limited to:

- The Integrated Maternal, Newborn, Child and Adolescent Health Strategy (2007) articulates a comprehensive set of actions to accelerate SDG 3, focusing on ensuring healthy lives and promoting well-being at all ages. [94,213,216]

- The National policy on the Health and Development of Adolescent and Young people in Nigeria (2007) provides a framework for generating required political will, mobilising resources, creating safe and supportive environments, fostering collaboration, and developing programmes to achieve optimal health and development for adolescent and other young people. [94,213,216]

The whole objective of these policies is to increase access to quality reproductive health information and services for adolescents and young persons. However, it only addresses the reduction of teenage pregnancy but never addresses problems associated with already pregnant adolescents. [216,219]

Child marriage is prevalent in the northern region of Nigeria, and Nigeria has yet to implement a national policy against it. According to the international and regional conventions associated with the rights of children and adolescents, the law should set the marriage age to a minimum of 18 years for both sexes. [217,218]

Also, there is no maternal health facility specific to the need of adolescent mothers. They are often group with older women of reproductive age; as a result, there is yet to be a significant change and improved outcome in their maternal service uptake. [91,94,213-216]

3.5 CONCLUDING REMARKS

The factors affecting health-seeking behaviour and uptake of maternal health services among adolescent mothers in Nigeria are numerous and cut across all levels of the socioecological model.

The individual, interpersonal and community-level factors include young maternal age at birth and marriage, widespread poverty, inequity in accessing health facilities, low education status, areas and region of residence, socio-cultural norms, stigmatization, and discrimination from the family and community and health workers.

Additionally, adolescents are likely to exhibit improper health-seeking behaviour in the uptake of maternal health services if they don't have the needed knowledge about the risk associated with pregnancy and if they lack an encouraging support system

The organizational/policy level factors include the unavailability of adolescent-friendly maternal health services, the inability to afford maternal health services and inaccessibility due to the high cost of services, and the judgmental attitude of health workers.

Adolescent mothers suffer more consequences of pregnancy complications, and they are often grouped with women of reproductive age, despite their peculiar characteristics. Lastly, there are no maternal health facilities explicitly made for adolescent mothers in Nigeria.

Furthermore, the policies regarding adolescent reproductive health are towards increasing access to quality reproductive health information and services for adolescents and young person's only to address the reduction of teenage pregnancy but never address the problems with adolescent mothers.

CHAPTER 4: PROMISING STRATEGIES AND BEST PRACTICES

This chapter answers the third objective and presents an overview of the promising strategies and best practices influencing the uptake of maternal health services among adolescent mothers in Nigeria and other similar settings in west Africa. The search strategies are as seen in Table 5.

Most of the documented promising strategies and best practices to improve health-seeking behaviour and uptake of maternal health services were generally for women of reproductive age (15-45), including adolescent mothers.

4.1 Basic Healthcare Provision Fund (BHCPF)

Nigeria's federal and state governments fund the Basic Healthcare Provision Fund (BHCPF). It was signed into the National Health Bill by former president Goodluck Jonathan in 2014 and was signed into the fiscal budget of 2019 by President Muhammadu Buhari. It is a section of the National Health Act of 2014 that aims to improve the health sector's financing. [93]

The basic package covers essential maternal health services, including antenatal care, skilled birth delivery, postnatal care, immunization and treatment for malaria, pneumonia, measles, and dysentery for under-five children and treatment for adults malaria treatment, hypertension and diabetes screenings, and family planning. [93]

This package will significantly benefit adolescent mothers, especially the poor and the vulnerable in rural areas. The only requirement is the BHCPF identity card, which can be easily obtained at the nearest PHCs. Also, it is accessible at all PHCS across Nigeria. [93]

BHCPF is a promising strategy because it aims to make available free minimum basic healthcare to the poor and most vulnerable groups in Nigeria through the accredited Primary Health Centers (PHCs) across the 36 states plus Abuja (the federal capital territory).[220,221]

4.2 Payment for performance (P4P)

Payment for performance (P4P) is a financial performance incentive that improved the uptake of maternal and child health services. [222] For example, P4P was implemented nationwide to increase staff productivity and commitment towards better maternal and child health outcomes.

It covers both public, private and faith-based facilities. This innovation gives all involved health facilities incentives based on numbers of improved Reproductive, Maternal, Newborn, and Child Health (RMNCH) related indicators. In addition, P4P incentivizes community health workers based on provided referral, thereby increasing the prioritization of RMNCH at the district and village level and ensuring equity in accessing maternal health services.

The indicators include the proportion of women attending and delivering at health facilities, including the correct use of a partograph. In addition, there is a database for users to monitor their targets against the performance of other service providers. Also, auditing systems were put in place to monitor progress and prevent corruption.

This measure fosters competition between the facilities, improving health facility performance; reducing out-of-pocket expenditure; increases uptake of maternal health services, especially skilled birth delivery. The practices show a 23% increase in health facility-based childbirth among participating health facilities and an estimated standard deviation of 0.157 in quality of antenatal care according to Rwanda antenatal care practice guidelines. [222]

However, the improvement made is not solely based on P4P initiatives as there were other parallel initiatives in place that aim at the same purpose. This collaborative approach makes it difficult to attribute the success rate to only P4P initiatives.

4.3 Community Based Health Insurance Scheme (CBHIS)

CBHIS is a voluntary scheme that is a proven form of social health insurance to efficiently increase the domestic pooling of resources and prevent catastrophic health expenditure, especially among the poor and underserved. Historically, CBHIS has been implemented in some states in Nigeria – Lagos, Kwara, and Anambra with an average 50% success rate. [223]

CBHIS has a uniform benefits package, especially at the local level, and offers comprehensive illness coverage**.** The approach is not to generate profit but to ensure provision and access to affordable services. [223] CBHI has the potential for community development and setting up accountability structures for health workers. . [223]

Some African countries evidenced the effectiveness of this scheme. [224] For example, Rwanda has one of the best social insurance coverages in sub-Saharan Africa, having 91% coverage from earlier 3%. [225] Ghana also uses social health insurance schemes to ensure that all its citizens are covered.[224] The scheme provides financial protection and an equal benefit package. [226,227]

Also, in Senegal, CBHI schemes coverage of maternal health services differ, with almost half of the scheme covering antenatal care, 60 percent covers basic delivery, while 26 percent covers complicated deliveries, including Caesarean sections.[228]

Without adequate community engagement, financial sustainability is a concern because of the possibility of the default payment and low participation in impoverished communities. The government may have to intervene by subsidising the payment for the poor and vulnerable groups to make the effect more evident. [227,229-233]

4.4 Community health education programs.

Between 2013-2015, some scholars, in collaboration with the Planned Parenthood Federation of Nigeria (PPFN), carried out a study to identify the impact of community health education on the uptake of maternal health services and pregnancy outcomes

in 96 randomly assigned communities in the northern region. The three community health education services rendered include Community health educator programs (CORPs); Safe birth kits and CORPs, Community drama and CORPs. [234]

4.4.1 Community health educator program (CORPs)

This intervention involves a door to door visit by the community resource persons (CORPs) to the pregnant women that family and community members identify. The resource person addresses the low uptake of maternal health services, low levels of trust between pregnant women and health workers, the importance of adequate diet in pregnancy, and the benefits of skilled birth delivery. [234]

4.4.2 Safe birth kits and CORPs

This package is to ensure a safe and sterile instrument and environment for delivery. The CORPs ensure pregnant women in their third trimester have sterile birth kits to reduce infection at childbirth, help the less privileged, and alleviate fear about the lack of delivery instruments at the facilities. [234]

4.4.3 Community drama and CORPs

This package includes series of dramas in addition to the CORPs program. The drama often addresses the community about the impact of mother-in-law and men autonomy over health-seeking behaviour and decision-making of pregnant mothers in the uptake of maternal health services. The drama is intended to change the social norms and debunk misconceptions associated with facility birth. [234]

In 2016, the effect of these services showed improvement in mothers' knowledge and attitude towards maternal health services. It increases the uptake of antenatal care in communities that receive the three packages of community education services. [234]

4.5 The Midwife Service Scheme (MSS)

The Midwife Service Scheme (MSS) started in 2009 to reduce the shortage of human resources by recruiting and deploying skilled birth attendants to underserved rural

communities. [94,213,235-239]. National Primary Health Care Development Agency (NPHCDA) manage the project and is funded by a special MDG-DRG (Debt Relief Gains) Account.[92,240,241].

The 36 states of Nigeria signed a memorandum of understanding (MoU) to mobilise newly qualified, unemployed and retired midwives to selected primary health care facilities in underserved rural areas. The aim is to increase Skilled Birth Attendance (SBA) coverage and further reduce maternal and child mortality. [92,241]

Progress has been accomplished with MSS initiatives. For example, it improves the availability of health workers in rural communities and improves overall maternal health outcomes. [92,241]; however, the benefit of the scheme has not been even across the country.

This scheme is not without challenges, starting from poor implementation of the MoU in some states, retention of midwives, and sustainability issues. Moreover, some states that implemented the MoU were owing to the midwives, making the majority abandon their duty post.

4.6 Subsidy Reinvestment and Empowerment Programme (SURE-P)

SURE-P invested in reducing maternal and child mortality by up-scaling the Midwifery Service Scheme. The aim is to provide the much-needed human resources in underserved areas, and upgrading/building primary health care facilities, strengthen secondary health facilities to serve as referral centres, promote demand for, and utilize services through conditional cash transfers. [213,242]

The evaluation to assess the benefit of SURE-P was done using one state in each geopolitical zone, and it showed that the project helped increase antenatal care visits and skilled birth deliveries in the selected facilities. Also, the programme success is attributed to community involvement using village health workers in encouraging women to engage in skilled birth deliveries. [243]

An evaluation carried out following the implementation of SURE-P shows an improvement in maternal health indices ranging from a 36.3% increase in the number of pregnant women attending four antenatal care and a rise of 32.1% pregnant women receiving skilled birth delivery [242]

4.7 OMOMi App

In 2015, Dr Charle Akhimien created an OMOMi app to create a world where no mother dies during childbirth. The app helps women with relevant maternal health information, improves maternal outcomes, and helps women make informed decisions about their health and their families. Although this app requires internet, many mothers, especially in the rural areas who may have benefitted from it, may not subscribe due to insufficient education and poverty.[244]

However, using such an app may be a promising strategy because Nigeria has about 170 million mobile phone users based on subscriptions. The data also suggests an estimate of 140 million users by 2025. [245]

Table 5: Search terms and keywords for promising strategies and best practices

Objectives 3	Promising strategy and best practices		Keywords	Country/Region
			AND	
To analyze the promising strategies and best practices that influence the uptake of maternal health services among adolescent mothers in Nigeria and other similar settings in west Africa.	-Basic Healthcare Provision Fund (BHCPF) -Payment for performance (P4P) -Community-Based Health Insurance Scheme (CBHIS) -Community Health Education Program (CORPs) -Subsidy Reinvestment and Empowerment Programme(SURE-P) -OMOMiApp	**OR**	"promising strategies" "best practices" "youth-friendly services" "adolescent-friendly services" "effective intervention"	Nigeria, Ghana, Rwanda, Senegal, Malawi, Kenya, Uganda, West Africa, Africa, sub-Saharan Africa

CHAPTER 5: DISCUSSION

Overview of findings

As discussed under the findings section, this literature review discovered various individual, interpersonal, community, and organizational/policy factors affecting health-seeking behaviour and adolescent mothers' uptake of maternal health services.

The review findings for best practices and promising strategies also suggest a broad intervention for improving the health-seeking behaviour and uptake of maternal health services among adolescent mothers in Nigeria; thus, the author can make evidence-based recommendations.

Individual-level factors.

In this review, studies found that almost all the individual factors affect health-seeking behaviour and uptake of maternal health services.

Adolescent mothers' age at child birth affects pregnancy outcome. Getting pregnant during the adolescent stage of life predispose adolescents to many risks associated with pregnancy complications and death. Most adolescents in the northern part of Nigeria marry and start childbearing earlier than their counterparts in the western region of Nigeria, where culture and social norms frown at early marriage and adolescent pregnancy. As a result, family and society often discriminate against any adolescent who gets pregnant in that part of the country, thus hindering maternal health service uptake.

Also, most adolescents have not attained a tertiary level of education based on Nigeria's education system. [246] The motherhood responsibilities at this age affect their education and often make them drop out of school. The low chance of continuing with their education after becoming pregnant put them at risk of being unemployable in the future with associated financial difficulty and possible poverty. The poor and uneducated face more risk of pregnancy complications because they cannot access

and afford maternal health services due to poverty and insufficient knowledge about the risk of pregnancy complications.

The socio-cultural norms in a patriarchal society like Nigeria and the insufficient decision autonomy affect adolescents' decision to seek maternal health services. Also, poor perception of maternal health services due to illiteracy and inadequate knowledge of risk associated with pregnancy affect their maternal health-seeking behaviour.

In addition, lack of trust in the health system (due to a previous negative experience about services) and religious or cultural beliefs (that prevent orthodox medicines and facility-based delivery) affect the uptake of maternal health services.

These findings are significant in tackling individual barriers to the uptake of maternal health services. Emphasizing the need for girl child education is crucial to improving her health-seeking behaviour. Improving her knowledge about the risk associated with adolescent pregnancy is one of the specific behavioural change interventions that can positively affect her uptake of maternal health services. [247]

Interpersonal level factors.

Most of the articles reported both positive and negative effects of area and region of residence on health-seeking behaviour and uptake of maternal health services. Mothers living in urban areas tend to seek maternal health services than their rural dwellers' counterparts. Low uptake of maternal health services is common in the northern region compared to other places; this is evident in the regional disparities of MMR (as shown in figure 5). This disparity was associated with poverty in rural areas, low mother and partner education level, cultural and religious belief, and long-distance between the residence and health facility. [71]

Findings show that a positive support system significantly influences good health-seeking behaviour. Most adolescent pregnancies are not planned, thus making such adolescents to require social support (which is often lacking), without which they might go to any length to get rid of the pregnancy through clandestine procedures and

suffer complications or death in the process. An effective support system is necessary for minimizing risks associated with adolescent pregnancy and helping adolescent mothers to get the needed physical and emotional support to stay healthy during pregnancy and childbirth.[50]

Community-level factors

Cultural and religious beliefs play a crucial role in a woman's decision to uptake maternal health services. Nigeria is rich in diverse cultures, some of which affect a woman's health-seeking behaviour and uptake of maternal health services. For example, due to cultural misconceptions and myths associated with pregnancy, some women prefer to use unskilled and traditional birth attendants instead of skilled professionals.

Some women register for antenatal care very late because they believe that revealing their pregnancy status can expose them to supernatural forces and witchcraft, negatively influencing pregnancy outcomes.[41,142] In other instances, those that register early still prefer to deliver with TBAs, in church or faith-based facilities because they believe in herbs, holy water, anointing oil, or other items considered sacred. Also, cultural norms that perceive pregnancy and childbirth as natural processes that don't require assistance affect uptake of maternal health services.

Similarly, the uptake of maternal health services is lower among northern Muslims than southern Christians. Some Muslim's faithful's, especially in the north of Nigeria, forbids male health workers from attending to their wives, while some Christian believers do not believe in administering modern medicine. Moreover, most rural dwellers attached spiritual meaning to every situation. These different beliefs affect their health-seeking behaviour.

The health workers' insensitivity to religious needs, cultural impact, and financial dependence on husbands or partners contribute to improper health-seeking behaviour among northern Muslim women. [186] Other findings associate low uptake of maternal health services in Nigeria to the patriarchate and hierarchical society, where

men tend to exercise significant influence over women's decision-making autonomy.[117]

These findings highlight the need for awareness creation on the harmful effect of cultural and religious beliefs using religious and traditional leaders to encourage their members on the importance of formal maternal health services. Also, train health workers on cultural competency to enable them able to give adequate care irrespective of cultural or religious beliefs.

Organizational/Policy level factors.

This review findings reveal the importance of some health-related factors and policies and how they affect health-seeking behaviour and uptake of maternal health services. The importance of formal maternal health services cannot be overemphasized. The findings show that women who received maternal health services from skilled personnel had a better pregnancy outcome and adjusted well to postnatal life than those who did not receive such maternal health services.

However, more than half of women in Nigeria reported the unavailability of formal health facilities and difficulty accessing maternal health services in some regions. In Nigeria, rural dwellers are often neglected regarding health facilities distribution. In areas where health facilities are available, there is either no skilled care providers or no delivery equipment to attend to them. Many rural dwellers also exhibit improper uptake of maternal health services due to poverty, poor road, inadequate knowledge on the benefit of maternal health services and long-distance between the area of residence and available health facilities. [123]

The covid-19 pandemic has further put more pressure on the already weak health system and has negatively affected the uptake of maternal health services. [201] Most health workers don't give quality care, and some women refuse facility-based delivery for fear of contracting covid-19.

The health workers' poor and judgmental attitudes towards adolescent mothers during pregnancy and childbirth pushes them away and affect the acceptability and

uptake of maternal health services. [248] Most women seek maternal health services from unskilled birth attendance because they are perceived to give supportive care.

The national policies that aim to increase access to quality reproductive health information and services for adolescents and young person's only address the reduction of adolescent pregnancy but never address problems associated with adolescent mothers who are already pregnant. In addition, this policy also set a specific age of access to some of these services, making it difficult for adolescents below 18 years to access them.

Also, the available maternal health facilities did not address the age-specific need of adolescent mothers. Adolescent mothers prefer accessible and affordable maternal health services; they want to be treated with utmost privacy, respect and not being judged when seeking care. To effectively improve the uptake of maternal health services among adolescent mothers, it becomes necessary that policymakers form policies and interventions targeting adolescent mothers specific and developmental needs.

Discussion of findings on the best practices and promising strategies

As analyzed in chapter 4, Nigeria has taken many strategies to increase uptake of maternal health services and reduce MMR. The strategy primarily targets the underserved populace in selected states or geopolitical zones and recorded success rates. However, the appraisals of the analyzed best practices show that combining one or two of these interventions is needed to effectively improve health-seeking behaviour and adolescent mothers' uptake of maternal health services.

Challenges with some of the strategies include lack of implementation, sustainability issues and lack of funding. Therefore, policymakers need to explore the sustainable source of generating funds for the programme's sustainability. Also, there is a need to specifically focus on adolescent mothers as they face a higher risk of ill-health and death during pregnancy than older mothers.

The national policies on maternal health should target adolescent mothers. Adolescent-friendly maternal health facilities should be established and accessible for all, especially the poor adolescent mothers in rural areas.

Review limitations

The limitations in this review include the addition of articles comprising women of reproductive age (15-49) due to limited articles specifically on adolescents' mothers (15-19). This is of concern because adolescent mothers face a higher risk of pregnancy complications. Also, the study may have some language bias because only English articles were reviewed. As a result, some vital information might be missing from other African countries with similar characteristics that speak other official languages. Finally, the appraisal is based on the information extracted from the available literature, and the researcher cannot validate the quality of their collected data.

Despite the limitations above, the strengths of this review's lie in the ability to increase overall knowledge. In addition, there is diversity in the evidence included in the findings; however, due to regional and cultural disparities, the results might not be transferable to another context. Finally, using some nationally accepted and country-specific reports guaranteed that findings have the power of representation.

The socio-ecological model is used to organize the findings in this review. The model uses the best approach to get the best result for at-risk people, like adolescent mothers. It is relevant because it identifies various intertwined factors affecting health-seeking behaviours and adolescent mothers' uptake of maternal health services. Furthermore, it explains the complicated interaction between the individual, interpersonal, community, and organizational/policy level factors. Finally, the intersecting rings in the model demonstrate how factors at one level impact the factors at another level.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

This review concludes that numerous factors affecting health-seeking behaviour and uptake of maternal health services by adolescent mothers in Nigeria cut across all the levels of the socioecological model. The major factors include maternal age, low education level, poverty, low decision-making autonomy, stigmatization and discrimination, health workers' judgmental attitude, and inability to access and afford the cost of health facilities.

Adolescent mothers prefer accessible and affordable maternal health services; they want to be treated with utmost privacy, respect and not being judged when seeking care. However, the available maternal health services do not target adolescents' mothers' specific health and developmental need of adolescents' mothers.

The National policies that aim to increase access to quality reproductive health information and services for adolescents and young person's only address the reduction of adolescent pregnancy but never address problems associated with improper uptake of maternal health services by adolescent mothers.

In addition, the existing strategies to improve the uptake of maternal health services target the underserved populace and are promising strategies because of the reported success rate; however, it is not sustainable. Therefore, policymakers need to explore the sustainable source of generating funds for the sustainability of existing strategies.

The BHCPF, MSS and the SURE-P MCH were best practices and promising strategies to improve the uptake of maternal health services by adolescent mothers in Nigeria. It targets the poor and vulnerable groups and records success rates. These findings support an assessment of scholars like Abimbola and colleagues, which reveal that with adequate political will and availability of the needed resources, the initiatives will enormously improve the uptake of maternal health services, reduce MMR, and improve maternal health outcomes in Nigeria.

Therefore, to improve health-seeking behaviour and uptake of maternal health services by adolescent mothers, the following recommendations are made

Interventions

- There is a need to prioritize the less-privileged adolescent mothers in the rural areas by ensuring free and accessible maternal health services that target their specific health and developmental needs at primary health care.

- There is a need to incorporate adolescent-friendly maternal health services into Nigeria's existing maternal health services to target adolescent mothers' specific health and developmental needs.

- Interventions targeted towards improving uptake of maternal health services among adolescent mothers should be context-specific, considering the regional disparities in maternal health-seeking behaviour.

- In-service training to improve health workers knowledge on adolescent health and developmental need. Also, to improve their attitude and skills to ensure non-discriminatory and non-judgmental care and treat adolescent mothers with utmost privacy and respect, without judging them during care.

- There is a need for community engagement to improve adolescent mothers' health-seeking behaviour. Hence, need for awareness creation at the community level to improve adolescent mothers' knowledge about the risk associated with adolescent pregnancy and the importance of maternal health services to improve maternal and child health outcomes in Nigeria.

- Relevant stakeholders and adolescent agencies should educate community members through traditional rulers and religious leaders on abolishing misconceptions and beliefs detrimental to health.

- Women empowerment. Emphasizing the need for a girl child education is crucial to her empowerment and improving her health-seeking behaviour.

Policymakers

- Policymakers should be encouraged to adequately invest in adolescent health as it has excellent economic potentials for Nigeria.

- National policies, strategies and interventions to target adolescent mothers, especially those in underserved regions, to reduce the inequity gap in accessing maternal health services and improve their health outcomes

- Advocate for the resuscitation and scaling up of MSS and SURE-P to target adolescent mothers, especially those in underserved regions, to reduce further inequity gap in accessing maternal health services and improve their health outcomes.

- Advocate for more capital spending on health and the continuous release of earmarked funds for BHCPF at the Primary Health Care.

- Policymakers need to explore the sustainable source of generating funds to sustain the existing promising strategies to improve adolescent mothers' uptake of maternal health services.

Research

- There is a need for adequate qualitative research on adolescent mothers' health-seeking behaviour and uptake of maternal health services across different geopolitical zones in Nigeria to identify the disparities within the other regions and to have enough data specific to adolescent mothers.

ANNEX I: Regional and Sub-national ANC Coverage in Nigeria

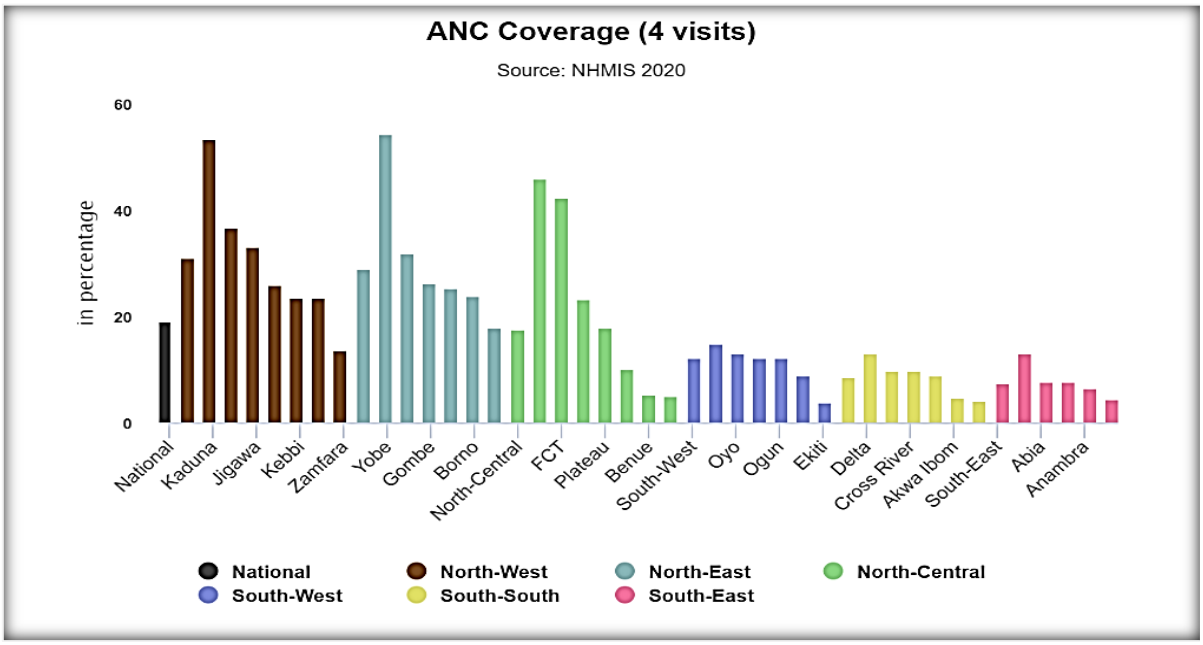


Figure 6: **Regional antenatal coverage (4 visits) in Nigeria.** [67]

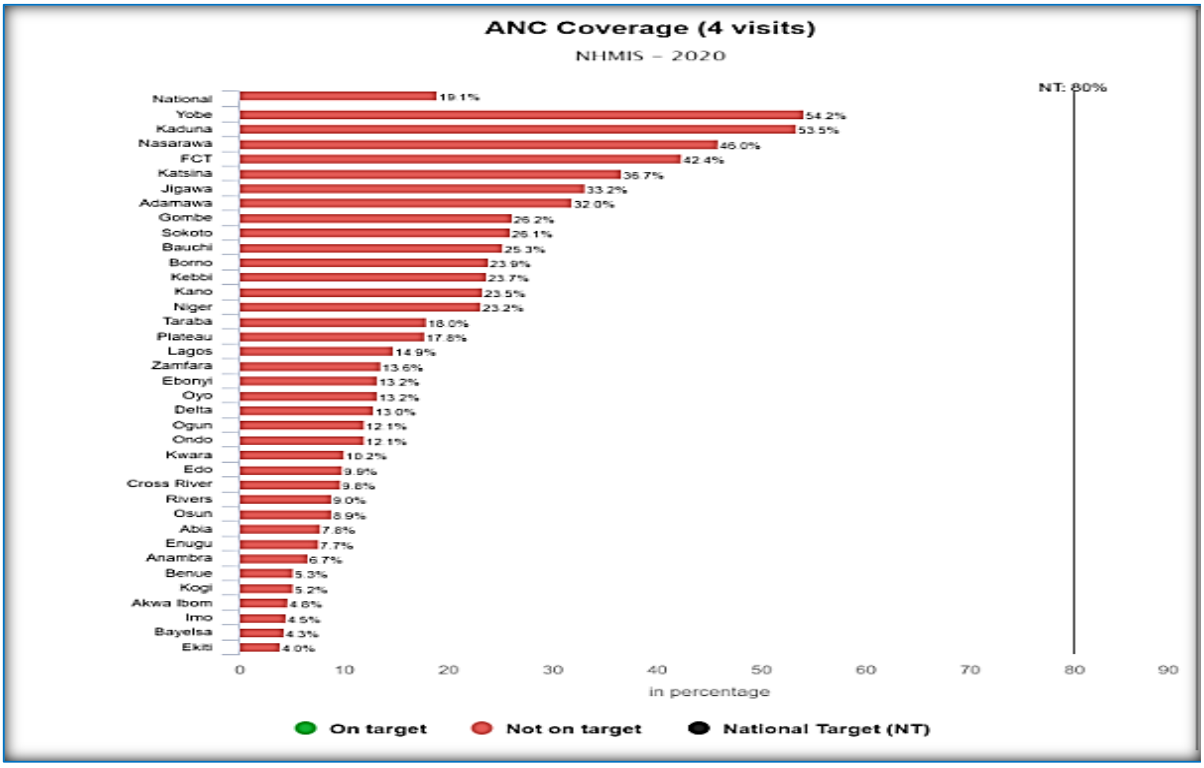


Figure 7: **Sub-national antenatal coverage (4 visits) in nigeria.** [67]

ANNEX II: Regional and Sub-national Skilled Birth Attendance in Nigeria

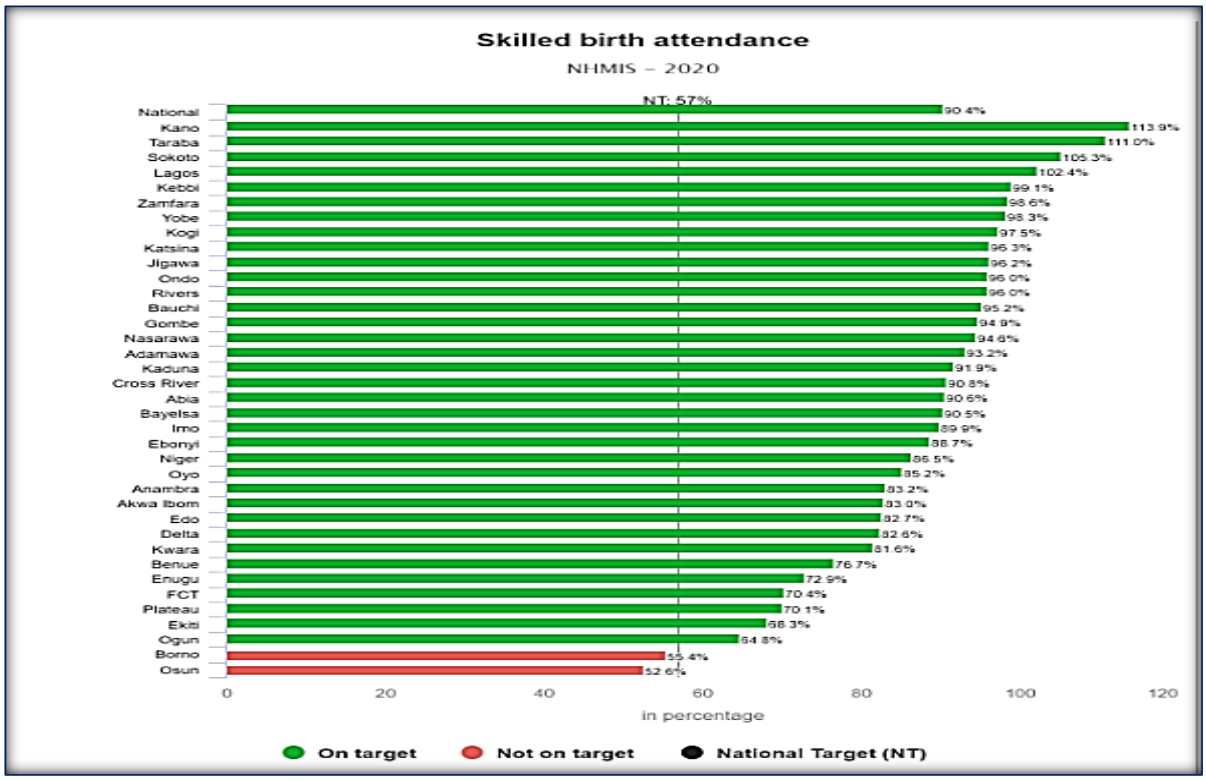


figure 8: **Sub-national skilled birth attendance coverage in Nigeria**. [67]

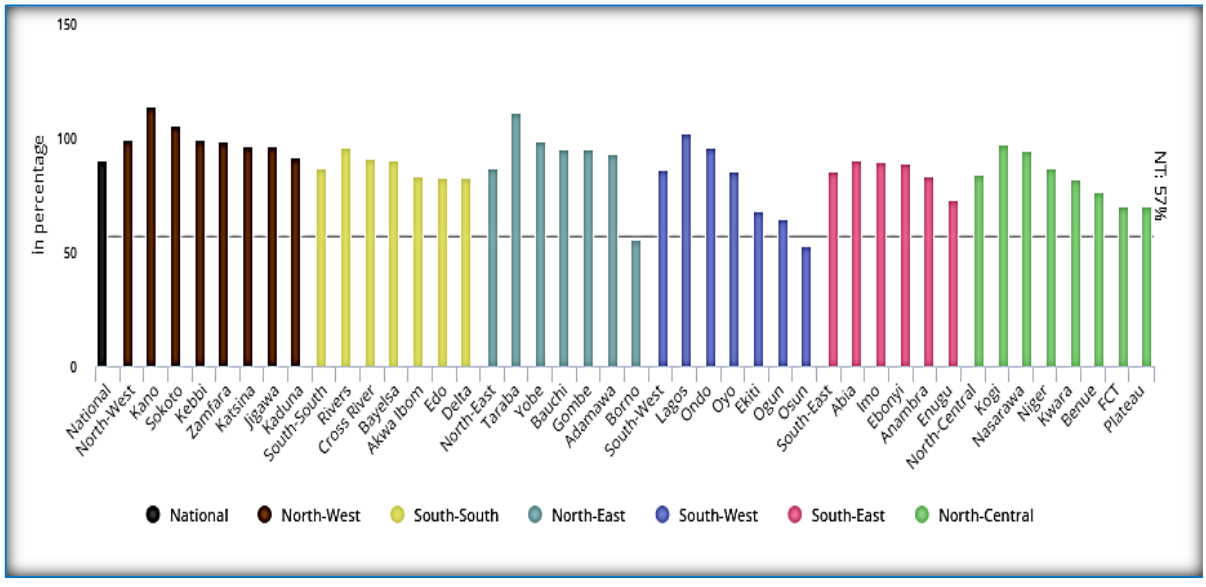


Figure 9: **Skilled birth attendance coverage in Nigeria**. [67]

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