FACTORS INFLUENCING FACILITY-BASED DELIVERY UTILIZATION AMONG WOMEN IN THE NORTHERN NIGERIA – SUPPLY SIDE.

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Factors Influencing Facility-Based Delivery Utilization Among Women in The Northern Nigeria – Supply Side.

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

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Declaration:

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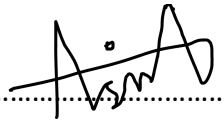
Signature……  ……

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ABSTRACT

Background: In Nigeria, the maternal mortality rate is high, at 512 deaths per 100,000 live births. Despite government interventions to enhance skilled birth attendance, facility-based delivery remains low in the northern region. This study focuses on identifying supply-side factors influencing facility-based delivery utilization in the northern region of Nigeria.

Methodology: A literature review was conducted, analyzing published and grey literature from the last 15 years on the factors influencing facility-based delivery utilization in Nigeria, Sub-Saharan Africa, and other low-middle-income countries. The analysis used Levesque's conceptual framework to examine the influencing factors.

Results: The study found that many In Northern Nigeria, women still choose to deliver their babies outside of health facilities without the assistance of skilled attendants due to various interconnected factors related to inefficient health systems. These factors include unequal distribution of facilities, lack of communication and promotion about the benefits of delivering at healthcare facilities, and unaffordable skilled care. Inadequate human resources with negative attitudes and poor training of healthcare providers, along with inadequate quality of care, insufficient privacy, and space during delivery further discourage women from using facility-based delivery services.

Conclusions: Numerous supply-side barriers contribute to the low utilization of facility-based delivery by pregnant women. To achieve significant and sustainable improvements in maternal healthcare outcomes, it is essential to recognize the need for multi-faceted interventions in collaboration with the government, healthcare providers, communities, and other pertinent stakeholders**.**

Keywords: Facility-based delivery, skilled birth, supply-side factors, health system, pregnant, north Nigeria.

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ABBREVIATIONS

ANC	Antenatal Care
BEmOC	Basic Emergency Obstetrics Care
CEmOC	Comprehensive Emergency Obstetrics Care
CHEWs	Community Health Extension Workers
CORPs	Community Resource Persons
DHS	Demographic and Health Surveys
EmOC	Emergency Obstetric Care
FCT	Federal Capital Territory
FMOH	Federal Ministry of Health
GDP	Gross Domestic Product
GP	General Practitioner
LGA	Local Government Areas
LMICs	Low and Middle-Income Countries
MCH	Maternal and Child Health
MMR	Maternal Mortality Ratio
MMSH	Murtala Muhammad Specialist Hospital
NDHS	Nigeria Demographic Health Survey
NFI	Non-Financial-Intervention
NGOs	Non-Governmental Organizations
NHIS	National Health Insurance Scheme
NHP	National Health Policy
NSHDP	National Strategic Health Development Plan

OOP	Out-of-Pocket
PBF	Performance-Based Financing
PHCs	Primary Health Centers
PPFN	Planned Parenthood Federation of Nigeria
SBAs	Skilled Birth Attendants
SDG	Sustainable Development Goal
SRH	Sexual and Reproductive Health
SURE-P	Subsidy Re-investment and Empowerment Program
TBAs	Traditional Birth Attendants
UNFPA	United Nations Population Fund
VMA	Voucher Management Agency
VU	Vrije Universiteit Amsterdam
WHO	World Health Organization

GLOSSARY OF KEY TERMS

Access: Levesque's framework defines access as the chance to recognize, seek, reach, obtain, or utilize healthcare services, ensuring that the needs for such services are fulfilled [1,2].

Maternal mortality: The annual number of female deaths caused by pregnancy or its management, excluding accidental or incidental factors. This includes deaths occurring during pregnancy, childbirth, or within 42 days of pregnancy termination, regardless of the pregnancy's duration or site [3].

Maternal mortality ratio (MMR): defined as the number of maternal deaths during a given period per 100,000 live births during the same period [4].

Facility-Based Delivery: Also referred to as institutional delivery, is a maternal health service provided by skilled birth attendants within healthcare facilities [5].

Skilled Birth Attendant (SBA): An accredited healthcare professional, such as a midwife, doctor, or nurse, who has received comprehensive education and training to proficiently handle normal (uncomplicated) pregnancies, childbirth, and the immediate postnatal period. They are also equipped to identify, manage, and refer complications in women and newborns as needed [6].

Traditional Birth Attendant (TBA): According to WHO is “a person who provides assistance to a mother during childbirth. They typically acquire their skills either through personal experience in delivering babies or by undergoing an apprenticeship with other traditional birth attendants [7].

INTRODUCTION:

Maternal mortality continues to be a pressing global health concern, with profound implications for the well-being of women and children. As a medical professional, I have witnessed first-hand the devastating consequences of inadequate maternal healthcare, both in my home country of Yemen and my work with various organizations focused on sexual and reproductive health and rights.

Having graduated from Sana'a University in Yemen in 2012, I initially began my career as a General Practitioner (GP) working in different public health facilities within the capital city. In 2013, while working in the emergency room of a big public hospital in Sana'a, I noticed many women only came to seek medical help when they were already facing serious complications during the motherhood period, putting their own lives and their babies at risk. I was wondering about the underlying reasons for their reluctance to seek maternal health services and for risking their lives, even when services are available free of charge.

In 2014, I decided to shift my career towards public health, with a particular focus on sexual and reproductive health and rights. This shift allowed me to collaborate with numerous organizations dedicated to addressing the challenges faced by mothers and children, further deepening my understanding of the complex issues surrounding maternal healthcare. Driven by a deep passion for addressing these challenges, I have chosen this thesis on the factors influencing health facility delivery in Northern Nigeria, a region that shares similarities with my own context and ranks second in the world for high numbers of maternal mortality after India [8].

This thesis not only allows me to contribute to the global concern on maternal health but also provides me with the opportunity to work in an international setting, expanding my capacity to make a meaningful impact beyond the borders of my home country. By shedding light on the factors influencing health facility delivery in North Nigeria, I hope to provide recommendations that reduce maternal mortality rates and improve the health outcomes of women and children in Nigeria and beyond.

CHAPTER ONE

1. BACKGROUND

1.1 Geography and population:

Nigeria, located in West Africa shares boundaries with Cameroon, Benin, Niger, and Chad. It is the most populous country in Africa and ranks as the sixth most populous nation worldwide, Figure 1. As of the last available data in 2022, Nigeria's population is estimated to be over 216.7 million people, occupying an area of 923,768 km2 (356,669 sq mi) [9].

Figure 1: Map of Nigeria [10].

The population structure of the country is characterized by a significant proportion of young individuals [9,11]. Out of the total population, young people between 10 and 24 years old constitute 33%, women of reproductive age represent 22%, while the percentage of all females is 49%. As a result, Nigeria faces a high dependency ratio of 73.3%. This situation is further exacerbated by the high rates of youth unemployment and a high total fertility rate of 5.1 in 2022 [12].

Abuja, the Capital City of Nigeria where the seat of government is located, had a population of approximately half a million residents in 2021, placing it 15th among the largest cities in Nigeria [13]. Nigeria consists of thirty-six states and the Federal Capital Territory (FCT), with a total of 774 Local Government Areas (LGA) and 9,565 political wards. For administrative and

political purposes, the states are categorized into six geo-political zones: North-Central, North-West, North-East, South-South, South-West, and South-East, Figure 1. The northern region of Nigeria (i.e. North-Central, North-West and North-East) is home to several states, including Kano, Kaduna, Katsina, Sokoto, and Borno, which have sizable populations [10].

1.2 Sociocultural and religious profile:

Nigeria is home to more than 250 ethnic groups. The major ethnic groups include Hausa-Fulani, Yoruba, Igbo, Ijaw, Kanuri, Tiv, and Ibibio, among others. The Hausa-Fulani ethnic group is the most dominant and widespread in the northern states [14]. Nigeria exhibits religious diversity, with Islam representing 53.5%, Christianity accounting for 35.3%, Roman Catholic at 10.6%, and other religions at 0.6%. Islam and Christianity are considered the two major religions [15]. Islam is primarily practised in the northern regions, while Christianity prevails in the southern and central parts of the country [16].

Nigeria is linguistically diverse, with over five hundred languages spoken across the country. English is the official language and serves as a common language for communication, administration, and education [10]. Nigeria has a significant urbanization trend, with a growing number of people residing in urban areas. However, rural areas remain a significant portion of the population, particularly in the northern part, with subsistence farming being a common occupation [15].

1.3 Socioeconomic profile:

Nigeria falls under the classification of a lower-middle-income country. It has a combined economy with various sectors contributing to its Gross Domestic Product (GDP), including oil and gas, agriculture, and manufacturing. However, the country confronts significant obstacles such as income inequality, high poverty rates, and unemployment with approximately 26.06 million people currently jobless, particularly among the youth population [17], with the percentage of age working group about 56.3% [18]. These challenges influence the overall well-being and health outcomes of the population.

Nigeria's economy is projected to experience modest growth of around 2.9% per year between 2023 and 2025, driven by sectors such as services, trade, and manufacturing. However, there are notable risks that could impact this growth, including domestic policies, low oil production, and challenges related to foreign exchange and local currency scarcity [19].

1.4 Security situation:

The security situation in Nigeria, especially in the Northern region, is a matter of great concern. One of the major factors contributing to the instability is the presence of Boko Haram in the North-East an extremist group that has carried out numerous attacks, and Fulani herdsmen and farmers clashes in North-Central. These incidences have resulted in the loss of lives, displacement of communities, and a general sense of fear and insecurity among the residents [15,20]. Such security instability frequently has a more pronounced impact on the sexual and reproductive health (SRH) of adolescent girls and women, exacerbating their already vulnerable situation [20].

1.5 Health care system:

The Nigerian health system is a complex network of public, private, and donor-funded healthcare providers. The system is organized into different levels, including primary healthcare facilities 88%, secondary healthcare facilities 11.7%, and tertiary hospitals 0.2% [21].

Primary Health Care offers Basic Emergency Obstetrics Care (BEmOC), which includes skilled birth care, manual removal of the placenta, extraction of retained products of conception, assisted vaginal delivery with a vacuum extractor, administration of antibiotics and basic neonatal care encompassing neonatal resuscitation. On the other hand, Secondary and Tertiary Health facilities, such as General and Teaching Hospitals, provide Comprehensive Emergency Obstetrics Care (CEmOC), which incorporates all BEmOC services along with caesarean section, safe blood transfusion services, and care for sick infants. The Nigerian Federal Ministry of Health recommends Primary Health Care as the entry point to the healthcare system, to achieve universal health coverage for all citizens. [22].

One of the major challenges facing the Nigerian health system is inadequate infrastructure and resources. Many healthcare facilities lack essential equipment, medical supplies, and trained healthcare professionals. This scarcity often leads to limited access to quality healthcare, particularly in rural areas and the northern region [23].

Health financing is another critical aspect of the Nigerian health system. Currently, the allocation of the national budget to healthcare by the federal government is below five per cent, failing to meet the recommended 15 per cent stipulated by the Abuja Declaration [24,25], the overall health expenditure per capita was $71 in 2019, which remains relatively low [26]. Consequently, essential services become less accessible, leading to out-of-pocket expenditures comprising 77% of the total health spending. This places a significant financial burden on individuals seeking healthcare [27].

1.6 Maternal health situation in Nigeria:

Maternal health services consist of antenatal care (ANC), delivery by Skilled attendants, and postnatal care. According to WHO, in pregnancy, at least four to eight ANC visits are recommended, during which the mother is expected to be provided with necessary information and risks that aid in the detection of early complications [28].

In Nigeria, according to the Nigerian Demographic and health survey 2018, 57 per cent of mothers received at least four ANC visits. Delivery by skilled attendants, such as trained doctors, midwives, trained nurses, or trained community health officers, is also crucial for maternal and newborn health. Approximately 43 per cent of deliveries in Nigeria are performed by a skilled birth attendant. Postnatal care is provided for mothers and their babies from delivery up to 42 days after birth to prevent the risk of maternal and newborn morbidity and mortality. Around 42% of Nigerian mothers received postnatal care within the first two days of birth [10].

Maternal health in Nigeria is a significant concern due to high maternal mortality rates, at 512 deaths per 100,000 live births, and the obstacles faced in accessing adequate healthcare [10]. The leading direct causes of maternal deaths in the country are preventable and treatable,

with haemorrhage accounting for 23% and infections for 17%. Nationally, the figures tend to obscure the substantial regional and other disparities in maternal mortality across Nigeria [29].

In northern Nigeria, women utilize skilled providers and formal health facilities to a much lesser extent compared to their counterparts in the southern region. In 2013, approximately 82% of women in the South reported giving birth in a health facility, while only 16% did in the North [10]. The Nigerian government, along with international organizations and NGOs, has made efforts to improve maternal health by increasing healthcare facilities and services, training healthcare professionals, and raising awareness. However, significant gaps remain [23].

CHAPTER TWO

2. PROBLEM STATEMENT AND JUSTIFICATION

2.1 Problem Statement

Maternal mortality, which refers to the deaths of women during pregnancy or within 42 days of termination of pregnancy due to developing complications, is a significant concern worldwide [3,30]. In 2020, a global estimate indicated that around 287,000 women tragically lost their lives during pregnancy and in the postpartum period [31,32]. In sub-Saharan African countries, including Nigeria, maternal mortality rates account for approximately 70% of maternal deaths worldwide [32]. In Nigeria, the maternal mortality rate stands at 512 maternal deaths per 100,000 live births [10]. This alarming statistic highlights the significant risk faced by Nigerian women compared to those in more developed nations. In fact, Nigerian women are 500 times more likely to lose their lives during childbirth compared to women in high-income countries, and Nigeria holds the unfortunate distinction of having the highest number of maternal deaths in Africa [33]. Likewise, findings from the 2018 Nigeria Demographic Health Survey (NDHS) indicate that the neonatal mortality rate in Nigeria represents 38 per 1,000 live births, accounting for approximately eight per cent of worldwide neonatal deaths [10].

Nigerian's national data reveals significant regional disparities regarding maternal mortality among the country's six geopolitical zones, with the North-East and North-West zones experiencing significantly higher rates compared to the South-West zone. In fact, the mortality rates in the North-East and North-West regions are nearly 10 and 6 times higher, respectively, than those observed in the South-West zone [23,34]. Moreover, women residing in rural areas and/or originating from Northern Nigeria face a greater risk of maternal death compared to their urban counterparts and those from the Southern region of the country [35,36].

Maternal deaths not only result in the loss of mothers but also have significant implications for individuals, communities, and countries. The loss of a mother profoundly affects the child's survival prospects, as they lack maternal love, support, and essential nourishment such as breast milk. The community experiences a decline in productivity due to

the loss of her physical and mental contributions. Furthermore, the country suffers from the loss of her economic and labour contributions. High maternal mortality rates hinder overall development and progress, impacting the achievement of sustainable development goals [37,38].

Numerous factors contribute to the high maternal mortality rate in Nigeria, including limited healthcare accessibility, widespread poverty, inadequate healthcare services, and the prevalence of child marriage [39]. Moreover, women who face a greater risk of maternal death are less inclined to give birth at formal healthcare facilities with the assistance of skilled birth attendants. Instead, they are more likely to deliver at home without the presence of a skilled attendant [23,40]. In the North-West region of Nigeria, only 18% of births are attended by a skilled provider, whereas in the South-East and South-West, the percentage is 85% each. The proportion of deliveries with skilled assistance varies widely, ranging from 3% in Kebbi in the north to 98% in Imo in the south [10]. Delivery under unskilled birth attendants or at home often results in a lack of essential knowledge, skills, and resources needed to effectively manage the complications, such as haemorrhage, eclampsia, and obstructed labour. As a result, it is widely known that when women rely on unskilled birth attendants for childbirth, it significantly contributes to the overall levels of maternal and neonatal mortality [41].

2.2 Justification

Maternal deaths can happen at any point during the motherhood period, but giving birth is the most dangerous time for both the mother and her unborn child because delivery can lead to unforeseen complications. Therefore, the majority of maternal and neonatal deaths occur either during childbirth or shortly after delivery [42]. Moreover, it is important to note that these deaths can be largely prevented by ensuring the availability and accessibility of high-quality maternal and child health (MCH) services [39]. Thus, the utilization of facility-based delivery services, where healthcare providers can deal with obstetric and newborn complications that could happen during delivery, is a fundamental component in reducing maternal and neonatal mortality and morbidity rates caused by avoidable obstetric complications [43,44].

However, in Nigeria, despite notable efforts to improve maternal healthcare services through increasing the number of healthcare facilities and services, training healthcare professionals, and raising awareness [23], the utilization of facility-based delivery remains alarmingly low, particularly in the northern region. Data shows that only 39 per cent of women in Nigeria delivered their last live birth in a health facility, with 26 per cent delivering in a public facility and 13 per cent delivering in a private facility [10,45]. Figure 2, reveals that facility deliveries are lowest in the Northern states of Nigeria, accounting for only 16% [10]. The majority of maternal deaths in the country, particularly in remote rural areas, are attributed to giving birth at home without skilled care assistance and delays in reaching health facilities [39]. This poses significant challenges to achieving the Sustainable Development Goal (SDG) target of reducing maternal mortality and ensuring universal access to reproductive healthcare services.

Understanding the factors that influence the utilization of facility-based delivery is essential for developing effective interventions and policies that can enhance maternal healthcare in Nigeria, particularly in the Northern States where the utilization of facility delivery is the lowest [46,47]. While many studies have explored this topic, most have primarily focused on demand-side factors (i.e., population level factors), these studies have documented the significant impact of socioeconomic status as financial constraints hinder access to healthcare services for women with lower economic standing, cultural beliefs and practices, education level with higher levels of education being associated with increased awareness and knowledge about the importance of maternal health services. This, in turn, encourages women to seek facility-based delivery services. In addition, positive experiences and a perception of high-quality care is important factor to encourage women to choose facility-based delivery [39,45,48–51]. However, this study focused more on the supply-side factors that influence facility-based delivery, such as availability, accessibility, acceptability, and quality of healthcare.

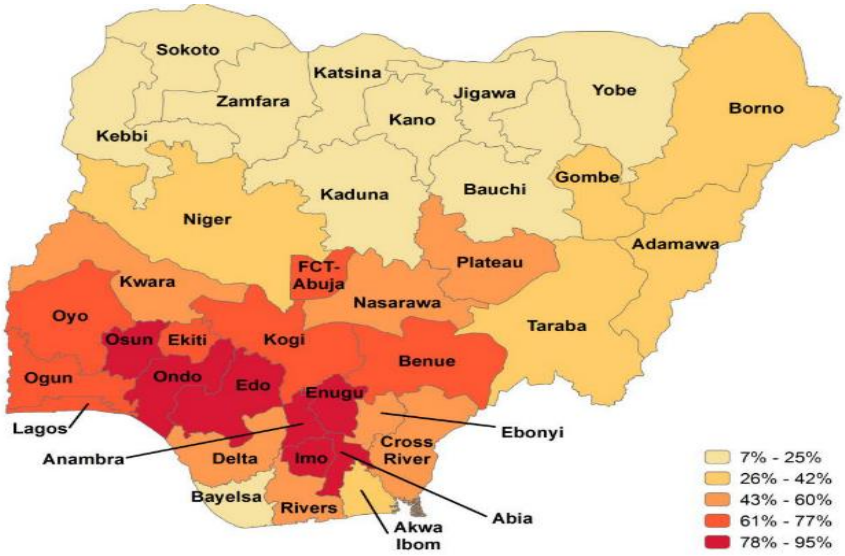

Figure 2: Health Facility Delivery by State, Nigeria (Nigeria DHS, 2018)

2.3 Objectives

2.3.1 General objectives

To explore supply-side factors influencing the utilization of facility-based delivery among women in Northern Nigeria to make recommendations for policymakers on interventions targeted at increasing facility-based delivery.

2.3.2 Specific objectives

1. To analyze the health system factors that influence the utilization of facility delivery services in the northern region of Nigeria.
2. To explore strategies and best practices in Nigeria and similar settings in Africa that influence the utilization of facility-based delivery from the supply side.
3. To provide recommendations for policymakers and stakeholders to contribute to the broader efforts towards achieving the Sustainable Development Goal (SDG) target of reducing maternal mortality and improving maternal health.

CHAPTER THREE

3. METHODOLOGY AND ANALYTICAL FRAMEWORK

3.1 Search Strategy

This study used a literature review approach to identify and analyse relevant literature to pursue the study objectives. Using a combination of relevant keywords and search terms (see table below), the search was conducted in online databases like PubMed, search engines such as Google and Google Scholar, and other websites including African and Nigerian Journals Online, and international organizations like WHO and UNFPA. Grey literature includes Nigeria's demographic health survey, Nigeria's National Health Policy (NHP), and Nigeria's National Strategic Health Development Plan (NSHDP). Also, snowballing was done to find articles related to the topic and objectives.

3.2 Inclusion criteria

- Published articles written in English within the past 15 years.
- Country-specific reports and policy documents such as the Nigeria Demographic Health Survey (NDHS) were included due to their provision of reliable estimates for related health indicators.
- Peer-reviewed and grey literature that utilizes qualitative, quantitative, or mixed research methods were included if it pertains to the utilization of health facility delivery among women in the northern region of Nigeria.
- Additionally, articles related to the topic from Low-Middle-Income Countries (LMICs) and African countries were included, given the inclusion of Nigeria in the study.

3.3 Exclusion criteria

- Articles that only provide access to abstracts without full-text availability.
- Articles published before 2007 unless they used the framework review and needed to be referenced in the framework.
- Papers targeting developed or high-income countries.
- Non-English published papers.

3.4 Limitations of the Study

- Language Bias: The literature review of the study only included articles written in English, which may result in language bias. It is possible that valuable information from African countries with similar characteristics, but different official languages was not included in the review.
- Geographic Focus: Most of the information found in the literature review was specific to a particular zone and states in Northern Nigeria, such as Kaduna state and the North-west region. This geographic focus limits the generalizability of the findings to other areas within Nigeria.
- Only a limited number of studies have specifically addressed and explored the supply-side factors influencing facility delivery services. Additionally, there is a scarcity of research and literature that solely concentrate on facility delivery, as most studies tend to encompass the broader context of maternal health services.

3.5 Search terms and combinations

The below terms combinations were used during searching for literature reviews.

Table 1: The search term Combinations and Keywords.

	Population	Exposure	outcomes
OR	Nigeria North Nigeria Nigerian women Nigerian Women in North Sub-Saharan Africa West Africa Africa Low-Income Countries Developing Countries	Maternal Health Service Health facility delivery Facility labour Institutional delivery Institutional labour Skilled birth attendants Home delivery Home labour Childbirth Obstetric Care Media exposure Cost of services Responsiveness of facility. Readiness of facility. Health information Facility location Facility distribution Quality of service Providers' attitude, behaviour. Providers' disrespectful attitude. Maternal health information. Strategies, intervention, best practice.	Utilization Uptake Access Use Barriers Facilitators
	AND		

3.6 Conceptual framework

Various conceptual frameworks are utilized to analyse access to healthcare services, including the socioecological model, Andersen's behavioural model, the three delays model, and Levesque's Conceptual Framework. After reviewing and comparing these frameworks, Levesque's framework was found to be most aligned with the specific objectives of the study.

Levesque's framework is one of the most comprehensive and recent frameworks, and it presents access as a dynamic process or journey, distinguishing it from static conceptualizations in other frameworks. This characteristic makes it more operationalizable for research as it defines access as the opportunity to identify, seek, reach, obtain, and use healthcare. The framework effectively considers both the health systems and the patient's perspective concerning access on an equitable basis [1]. It considers the health system or healthcare providers' perspective (supply side) through five dimensions: Approachability, Acceptability, Availability, Affordability, and Appropriateness. And the patient or client's perspective (demand side) is influenced by five corresponding abilities of the population, which interact with the supply dimensions to generate access to services. These abilities encompass the Ability to perceive needs, the ability to seek services, the ability to reach the services, the Ability to pay for the services, and the ability to engage with the services to fulfil the identified need [1,2], Figure 3.

The focus of the thesis is on supply-side factors, the demand-side dimensions related to patient abilities were excluded, as they have already been extensively researched and documented.

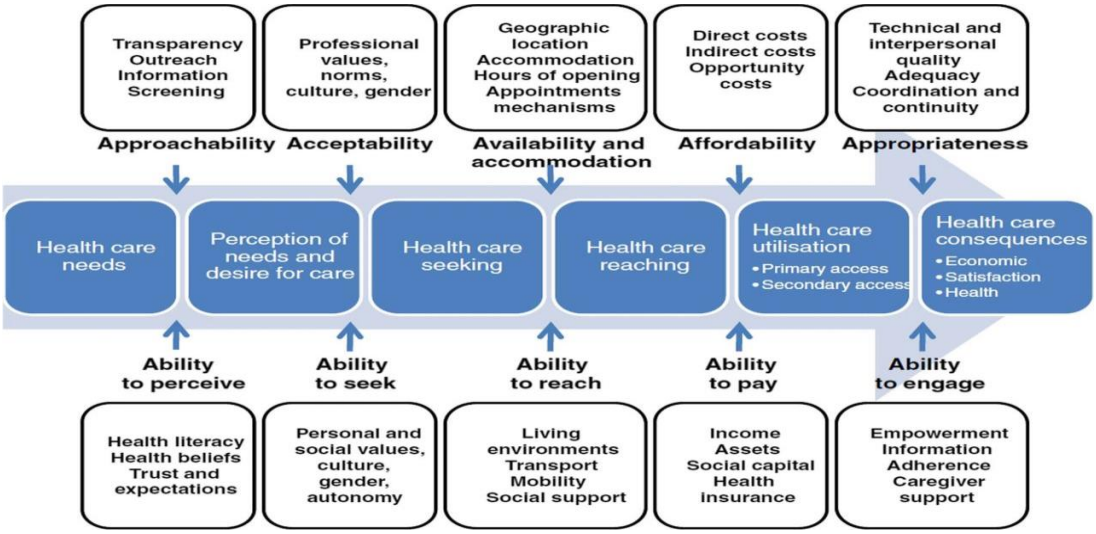

Figure 3: Levesque Conceptual Framework for Healthcare Access [2]***.***

CHAPTER FOUR

4. STUDY FINDINGS

4.1 Factors influencing the utilization of facility-based delivery among Nigerian women in the north of Nigeria.

In this part, findings are presented regarding the factors that influence the access and utilization of Facility-based delivery among Nigerian women in the northern region. Results are organized and presented based on the five supply-side dimensions outlined in the Leveque framework. The analysis of the identified literature highlighted the main concepts as presented in Figure 4 that were subsequently used to organize the description of findings.

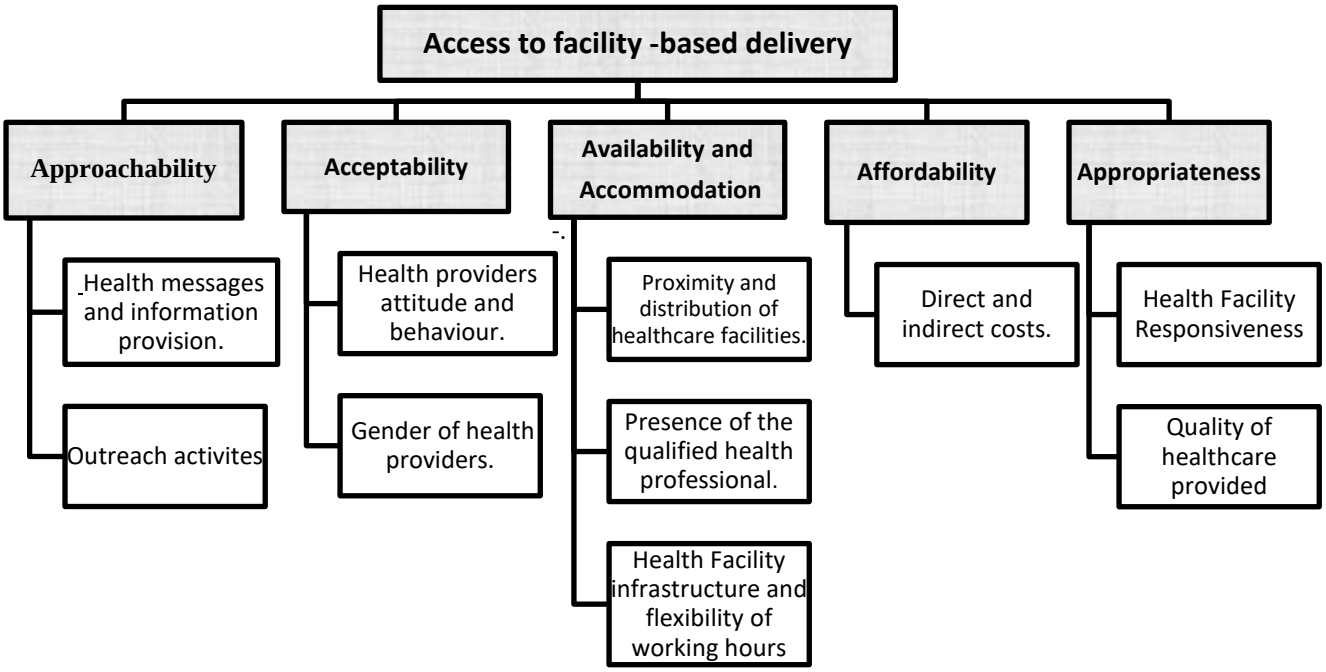

Figure 4: Factors influencing facility-based delivery utilization were Identified during Literature Review.

4.1.1 Approachability

Approachability within the context of the Levesque model refers to how easily individuals with health needs can identify and reach out to healthcare services. Key factors for approachability that focus on the supply side include health messages and information regarding health issues and available services, and outreach activities. These factors play a crucial role in determining the level of awareness and knowledge the population has about the healthcare services available to them [2].

Health messages and information provision

Effective health information is essential for a successful healthcare system. The capability to convey information and ideas efficiently is now widely acknowledged as crucial for the effectiveness of any health intervention. Messages and information provision regarding maternal health services are essential to ensure that pregnant women and their families have the necessary information to make informed decisions and feel confident in utilizing healthcare facilities for safe and controlled childbirth [1,2]. The Nigerian DHS findings indicate that a majority of Nigerian women (54.9%, n-24,033) lacked awareness of the importance of health facility delivery and considered it unnecessary [10]. That means lack of access to information and low awareness can lead to a misjudgment of the risks involving pregnancy and delivery and benefits of maternal health services, therefore, low level of maternal health service utilization including facility-based delivery [45,52]. This suggests a need for improved access to accurate information to ensure safe maternity and childbirth process.

Healthcare providers, such as doctors, midwives, and nurses, play a crucial role in conveying health-related messages, particularly to patients, including pregnant women. They typically utilize antenatal care (ANC) visits to provide necessary health information, including education on health behaviours during pregnancy, counselling regarding pregnancy danger signs, the importance of delivering in a health facility under the supervision of skilled personnel who can manage unexpected complications that may arise during labour, even in

the absence of complications, and information about family planning [10]. An analysis of the 2013 Nigeria DHS was conducted to identify factors associated with maternal health service utilization. The study indicated that enhancing the availability and accessibility of ANC could ultimately lead to an improvement in the utilization of facility-based delivery services [48]. That means Antenatal care visits serve as an important means of engaging with pregnant women and providing crucial maternal health messages and information.

A qualitative study conducted in Nigeria involving 1,706 participants revealed that the most prominent sources of maternal health information among the participants were hospitals (22.3%), followed by radio (18.6%), the internet (13.2%), friends (12.4%), school (10.8%), and family (10.5%) [53]. However, due to time constraints and understaffing during these encounters, the information provided often fails to fully address patients' information needs [54]. Additionally, the dissemination of maternal health information within healthcare facilities primarily targets a group of women who frequently attend antenatal clinics. Consequently, women who do not visit health facilities miss receiving this essential information. Therefore, there is often a significant gap between the health information provided by formal health education and the actual needs of the community. As an alternative solution, mass media can serve as a platform to disseminate maternal health information [54]. Various forms of mass media, such as television, radio, newspapers, and social media, have been utilized to disseminate a wide range of health messages and information including maternal health issues such as the importance of seeking ANC and delivery under the supervision of skilled attendants and danger signs [55].

Studies done in Asia and Africa showed a positive association between media exposure and increased utilization of skilled birth attendants (SBAs) and facility-based deliveries [56–58]. Moreover, in the context of Nigeria, any form of media exposure was found to be associated with increased utilization of health facility care among pregnant women [52,55]. However, more than 80% of women in the North have limited or no exposure to media implying that essential health information regarding the advantages of facility delivery and maternal health services is not reaching the majority of individuals who could benefit from it [52].

Unfortunately, the majority of people in the north face challenges in accessing media channels according to findings of a study conducted in a specific community in northern Nigeria involving 120 participants to evaluate the accessibility of Maternal and Child Health Media Programming which indicate that most respondents 76.5% own or have access to radios, and 67.2% have access to televisions. However, 82.1% of them face significant constraints such as language barriers, signal issues, timing conflicts, and lack of consistent power supply [56].

Outreach activities and Community-based service delivery

Outreach activities are essential to improve approachability and increase the utilization of facility delivery services. Outreach activities refer to providing health services by health workers to the community outside of the health facility. They address barriers, provide information, engage communities, establish referral systems, and promote health education, ultimately contributing to improved maternal and newborn health outcomes [59]. According to A cluster-randomized controlled trial in Satkhira District, Bangladesh, the implementation of community interventions, such as conducting home visits, has been found to improve the utilization of maternal and neonatal care services provided by skilled healthcare providers and qualified facilities [60].

In Nigeria, community outreach activities, including home-to-home and field visits, are primarily carried out by two main cadres of community health providers. The first cadre comprises community health extension workers (CHEW) who operate both within health facilities and communities. They are employed by the Federal and State Ministry of Health (FMOH). The second cadre consists of community resource persons (CORPs), who are informal healthcare providers. This group includes traditional birth attendants and village health workers, often supported by non-governmental organizations (NGOs) [61,62]. Table 2 provides an overview of the community health providers.

Table 2: Community Health Providers Overview [62]**.**

	CHEW	**CORP**
Health system linkage	They are employed by the government and connected with government health facilities.	CORPs are supported by NGOs.
Role	Facility and community based to provide Ward Minimum Health Care Package services. Which consists of services for communicable disease prevention maternal and newborn care, nutrition, health education, and community mobilization.	conduct visits to provide pregnant women with valuable information regarding the advantages of accessing healthcare services and recommended health practices and recognizing danger signs. They act as links between health facilities and the community by facilitating client referrals.
Selection criteria	they must be literate and undergo training.	The selection criteria vary depending on the supporting NGO and the specific needs of the community. Their nomination must come from the community they reside in, and they must have a livelihood there.

Moreover, the Community Health Program is one example of outreach activities designed to enhance the uptake of child and maternal health services in Northern Nigeria. In 2013, researchers collaborated with the Planned Parenthood Federation of Nigeria (PPFN) to assess the effects of a community health program on the utilization of maternal and child health services. The study was carried out in the northern region, where 96 communities were randomly assigned to assess the impact of community health education on the uptake of maternal health services and pregnancy outcomes. The findings revealed that the program had a positive effect on mothers' knowledge and attitude towards maternal health services, as well as an increase in the uptake of such services. However, it was observed that despite these improvements, the intervention did not lead to a noticeable improvement in maternal or child health outcomes. This may be explained by the fact that the increase in healthcare utilization might not have been significant enough to bring about a meaningful change in health outcomes within the relatively short duration of the two-year period [(63)].

In 2015, a quasi-experimental study was conducted in Kadawawa, northern Nigeria, to compare service utilization in the pilot community. In this study, female resident Community Health Extension Workers (CHEWs) were deployed to provide health post services, 24/7 emergency access, and home-to-home visits. The results showed evidence of the sustainability of changes over the two subsequent years, with facility-based deliveries attended by skilled birth attendants more than doubling compared to the preceding year (105 deliveries versus 43 deliveries, respectively) [(64)].

4.1.2 Acceptability

Acceptability refers to the alignment of healthcare services with the values, beliefs, and cultural norms of the population they serve. It includes cultural sensitivity, interpersonal skills of healthcare providers, and gender considerations. Acceptability ensures that healthcare services are acceptable and appropriate, promoting individuals' willingness to seek and utilize these services [(2)].

Health provider's attitude and behaviour

Healthcare providers' attitudes and behaviours significantly influence the uptake of maternal health services including facility delivery. Positive attitudes characterized by empathy and respect create a supportive environment that encourages women to choose facility delivery. On the other hand, negative attitudes can deter women from utilizing these services as a result of dissatisfaction with the health system [65].

Findings from different studies conducted in low-middle-income countries including Tanzania and Kenya, have shown a clear association between attitudes of health providers and the utilization of facility delivery services. The attitude of health providers has been identified as a significant factor influencing facility delivery. Women have reported that negative patient-provider interactions including verbal abuse, physical violence, and neglect act as barriers to seeking delivery care. These negative experiences not only impact the decision-making process of women who had personally experienced such mistreatment but also affect those who have heard stories about such incidents [66–68]. Similarly in Nigeria, studies have indicated that negative attitudes among health providers were a reason that led women to discontinue their care at healthcare facilities and delivered their babies under the assistance of unskilled attendants [45,47,69,70].

In a cross-sectional study conducted in Kano, Northern Nigeria, involving 306 women who had delivered at Murtala Muhammad Specialist Hospital (MMSH) within six weeks before the survey, it was found that the prevalence of disrespect and abuse during childbirth was significant. Approximately one in every two women (55.9%) reported experiencing such mistreatment. The most common forms of mistreatment reported were abandonment or neglect of care (84.5%), nonconfidential care (67.9%), and undignified care (51.8%). Some participants mentioned experiencing multiple forms of mistreatment. Among the reported instances of disrespect and abuse during childbirth, the majority (83.0%) were attributed to nurses/midwives while attending doctors (11.7%) and hospital attendants (8.2%) were responsible in some cases. Promoting and ensuring respectful care during childbirth is

essential for enhancing the quality of care and increasing the utilization of skilled birth services [71]. Some Nigerian women also expressed that not being allowed to deliver in the traditional and preferred position of squatting or kneeling contributes to their experiences of disrespectful and abusive care [72].

However, a qualitative study conducted in Benue State in Nigeria revealed that the experience of disrespect and abuse did not have a significant impact on the intended use of healthcare facilities for childbirth. Women in the study still perceived healthcare facilities as the safest location to give birth, despite reporting instances of abusive language and shouting from healthcare staff. These practices were viewed as normative and expected by the women in the study [73].

Gender of health providers

The gender of health providers significantly impacts the acceptance of facility delivery services by pregnant women, especially in societies where casual physical contact between men and women is forbidden. In such conservative communities, if the majority of health service providers are men, it can reduce women and their husbands/ other family members who influence decisions to seek care acceptability of care and their willingness to seek healthcare services [2]. In Nigeria, Social indicators reveal significant gender disparities, as the literacy rate among adult females stands at 49.7% compared to 69.2% for males. Moreover, the formal employment rate for women remains relatively low, with only 36% of Nigerian women participating in the adult workforce [23].

Numerous studies have revealed that the gender of health providers plays a role in influencing women's decision-making when it comes to delivery at the facility. This is particularly evident in conservative communities such as Bangladesh, Afghanistan and north Nigeria where religion, cultural norms and personal preferences lead women to prefer health providers of the same gender during childbirth [2,74,75].

In Nigeria, a cross-sectional study conducted in a sub-urban community in Kano, northern Nigeria, involving 139 participants, it was found that 17.3% of the respondents expressed a dislike for hospital delivery due to the presence of male healthcare providers [69]. This finding supports previous research by Okeshola and Sadiq, which revealed that a majority of women in Southern Kaduna in northwest Nigeria reject facility services during pregnancy and childbirth, citing concerns about privacy violations when male healthcare providers are present [76]. Similarly found in a study conducted in Bauchi State in northeast Nigeria that female clients exhibit a preference for gender-specific health providers, the study revealed that nearly 60% of female clients expressed a preference for female health providers, while less than 1% of the female clients preferred male health providers [75]. These findings collectively indicate that gender preferences play a significant role in women's acceptance of healthcare services during pregnancy and childbirth in different zones in northern Nigeria.

4.1.3 Availability and Accommodation

Availability and Accommodation from the supply side refer to the physical accessibility and presence of healthcare services. Accommodation refers to the degree to which the provider's operations are structured in a manner that aligns with the constrains and preferences of the client, while availability focuses on the readiness of services, including healthcare professionals and necessary resources. Evaluating these factors helps understand the extent to which healthcare services are accessible and adequately equipped to meet the population's healthcare needs [1,2,77].

Proximity and distribution of healthcare facilities

It refers to the physical distance between healthcare facilities and the population they serve. The proximity and distribution of healthcare facilities are important for promoting equitable access to healthcare services. When facilities are located closer to communities and distributed adequately, individuals have improved access to healthcare, which can

positively impact healthcare utilization, including facility-based delivery for maternal health services [78,79].

The distribution of health facilities in Nigeria is characterized by non-uniformity, with regional disparities in the distribution of formal maternal health facilities. Specifically, there is a concentration of public primary maternal health care facilities in the northern and rural areas of the country. Conversely, most formal private medical facilities are primarily located in urban and southern regions of Nigeria. According to a cross-sectional study conducted in 2013 among 140 pregnant women in the Russia village of Jos North, Nigeria, approximately 36.4% cited the distance to healthcare centres as a significant reason for choosing home delivery [80]. Similar findings were found in another study carried out in Kaduna State, Nigeria where about 69% of respondents (total number =124) expressed that the distance to the facility played a significant role in deciding the place of delivery. This suggests that women would prefer delivering their babies in healthcare facilities, but due to the considerable distance between their place of residence and the facilities, many opt for home delivery instead [76].

Different studies conducted in Nigeria have also identified distance as a significant barrier preventing women from accessing healthcare facilities for delivery, in addition to other barriers [47,48,81]. The impact of distance is stronger when accompanied by a lack of transportation options and inadequate road infrastructure. However, another cross-sectional study conducted among women of reproductive age who delivered the 24 months preceding the survey in a semi-urban community in northern Nigeria revealed that despite residing in close proximity to a health facility, the majority of mothers did not utilize maternal health services [70].

Presence of the qualified health professional

The right numbers and distribution of health professionals with appropriate qualifications are crucial for effective health systems performance and essential for promoting the utilization of health facility delivery. Even though the Northern part of Nigeria experiences a

higher burden of maternal mortality rates, this region faces an additional challenge of inequity in care due to the scarcity of healthcare providers [82]**.** A study conducted in Borno, North-Eastern Nigeria, has demonstrated a significant disparity in personnel distribution. The findings revealed that a majority (69%) of the personnel were employed in secondary health facilities, resulting in understaffing at primary health facilities. Consequently, patients are less inclined to utilize these primary health facilities [82,83].

Insufficient staffing levels lead to healthcare providers being overwhelmed with a heavy caseload, which can result in burnout, job dissatisfaction, and a potential decline in the quality of services provided [84]. When healthcare providers are overwhelmed with a high caseload due to staff shortage, several negative consequences arise. These include increased waiting times for patients, shortened consultation times, limited patient-provider communication, and overall dissatisfaction with the services received [85]. In a study conducted in a semi-urban community in North-Central Nigeria, women identified long waiting times and the poor attitude of health providers in health facilities as key barriers to utilizing antenatal care (ANC) and delivery services [81]. Additionally, Uchendu et al. observed that some clients preferred utilizing private health facilities due to their concerns about waiting times [86].

Nigeria also faces challenges in providing ongoing medical training and education for its healthcare personnel, both individually and institutionally. These difficulties are because of financial limitations, corruption, and a shortage of healthcare workers available to fill in during training or educational absences. As a result, the current healthcare workforce in Nigeria often lacks up-to-date medical skills and knowledge [10]. In Nigeria, a cross-sectional study was conducted to assess the knowledge and skills related to emergency obstetrics care (EMOC) among 341 health providers, including 148 doctors and 193 nurses/midwives, working in eight referral hospitals. The study revealed that the providers scored less than 46% on the EMOC knowledge test. The doctors scored higher than nurses and midwives in both their knowledge of EMOC and self-reported confidence in carrying out specific EMOC functions. However, overall, the knowledge and reporting skills on EMOC by health providers

in Nigerian referral facilities were found to be lower than the standard recommendations set by the World Health Organization (WHO) [87].

Health Facility infrastructure and flexibility of working hours

The characteristics of facility infrastructure included the availability of equipment, drugs, general appearance, and amenities. The presence of well-equipped health facility infrastructure plays a role in encouraging pregnant women to choose health facilities for delivery. Additionally, infrastructure that provides privacy and comfort creates a favourable environment for women, influencing their decision to go for facility-based delivery.

Moreover, the work environment for healthcare providers is enhanced by adequate infrastructure, leading to better availability and quality of care during facility-based deliveries. During a facility survey of Primary Health Centers (PHCs) in Nigeria, it was found that the presence of poorly designed facility environments, which offered minimal privacy and inadequate space, along with the lack of necessary equipment and infrastructure, were reported as contributing factors to the low utilization of facility for delivery [88].

Another defining characteristic of the healthcare system is the availability of flexible service hours. A cross-sectional study carried out in Nigeria highlighted that the greater the flexibility in service hours for maternal healthcare, the higher the demand [89]. All respondent groups in a qualitative study conducted in Gombe State, northern Nigeria reported that the lack of access to open facilities at night was a barrier to seeking facility-based delivery [47].

4.1.4 Affordability

Affordability from the supply side assesses whether healthcare services are priced in a way that allows clients to access and afford them without experiencing excessive financial burdens [2].

Direct and indirect cost

In Nigeria, the insufficient funding of the government for the health system has led to a significant dependence on out-of-pocket (OOP) spending to finance healthcare. Currently, OOP payments constitute approximately 77% of the total health expenditure in the country [27,90].

In 2005, Nigeria implemented the National Health Insurance Scheme (NHIS) to reduce out-of-pocket (OOP) spending. However, the NHIS has only managed to cover 4% of the Nigerian population, predominantly those in the formal sector [91]. The high proportion of OOP payments contributes to inequalities in healthcare access, as individuals with limited financial resources tend to avoid necessary healthcare, delay seeking care, or turn to low-quality informal providers [90,92].

Studies have indicated that the cost of healthcare services plays a significant role in preventing women from utilizing healthcare, even when the services are accessible to them [44,93,94]. In low-middle income countries such as Nigeria where direct delivery costs were partially covered, families were still required to bear additional expenses, including the cost of medication, medical supplies such as gloves, needles, and gauze, blood transfusions, laboratory services, food during the hospital stay, bribes to health providers, and laundry services [76].

In a study conducted in Kaduna State involving 124 participants, located in the northwest region of Nigeria, it was revealed that approximately 82% of the respondents felt that the cost of delivery significantly influences women's choice of where to give birth. This finding indicates that the financial implications associated with delivery in most healthcare facilities are often high. Consequently, women whose husbands are unable to afford the expenses related to health facility bills, tend to encourage their wives to either give birth at home or seek assistance from unskilled birth attendants [76].

4.1.5 Appropriateness

Appropriateness refers to the alignment between healthcare services and the specific needs of clients, the promptness of service delivery, the amount of care spent in health problem assessment and treatment determination, and the technical and interpersonal quality of the services provided [1,2].

Health Facility Responsiveness

It refers to the ability of health facilities to meet the needs and expectations of patients and communities promptly and effectively. It consists of several aspects, including the facility's ability to provide timely and appropriate care, treat patients with respect and dignity, maintain confidentiality, and address individual preferences and concerns. lack of prompt attention by providers, dignity and communication negatively affects the utilization of healthcare services utilization [95].

In a retrospective cross-sectional study involving 796 women, the aim was to assess the responsiveness of healthcare services in Kaduna State-Nigeria, participants rated communication (55.4%), dignity (54.1%), and the quality of facilities (52.0%) as "extremely important" factors influencing responsiveness [96]. The responsiveness of a health facility is crucial in ensuring that providers and facilities can effectively meet the needs of their users, thus avoiding barriers to accessing care. In Nigeria, private facilities performed better in terms of user experiences and satisfaction with the level of responsiveness [96].

Other Studies in Nigeria revealed that public or government facilities exhibited lower levels of responsiveness regarding dignity, waiting time, prompt attention, and travel time. These factors are essential for the delivery of high-quality maternal healthcare services and are important in positioning these facilities to effectively handle complications [96,97].

Quality of healthcare provided.

The concept of quality of care is multidimensional and lacks a universally accepted definition. Graham and colleagues propose that quality of care includes elements of clinical effectiveness, safety, and providing a positive patient experience [98]. Delivery of quality care relies on the availability of resources, including materials, finances, and skilled personnel, to achieve the desired outcomes [99]. When there is an improvement in the quality of healthcare services, several positive outcomes follow. Costs tend to decrease, productivity increases, and better services become available to clients. As a result, there is an increase in the uptake of health facility services [100].

In Nigeria, health facilities lack sufficient resources, including essential drugs and skilled staff, which impedes their ability to deliver basic emergency obstetric care and provide quality maternal healthcare services. This limits their ability to manage complications that may arise during pregnancy and childbirth resulting in delays in pregnant women accessing the necessary services they require [40,101]. A cross-sectional descriptive study was conducted on EmOC facilities involving 246 women in Kano, Nigeria. The study revealed that the quality of EmOC services was deficient. The necessary equipment was absent for delivering EmOC services, and the available personnel lacked the required skills to perform critical EmOC functions. [99].

Similarly, in Bauchi State, located in northern Nigeria, another cross-sectional survey of 20 general hospitals and 39 primary healthcare centres was conducted to assess the availability, utilization, and quality of emergency obstetric care (EmOC) services. The findings indicated that only 6 out of 59 facilities (10.2%) met the requirements of signal functions set by the United Nations [102]. Low quality of healthcare services provided by health facilities can negatively affect the utilization of maternal health services, as shown by several studies conducted in Nigeria. These studies have identified poor service quality as a significant barrier to the utilization of facility-based delivery, including in Northern Nigeria [46,47,81,88].

4.2 Strategies and best practices to increase utilization of facility-based delivery.

This part will explore the key strategies and best practices implemented in Nigeria and similar contexts in lower-middle-income countries to improve the utilization of facility-based deliveries. Few interventions only focused on the supply side. As a result, below are interventions that are aimed at improving either the supply side or both the supply and demand side. The most successful strategies were those that effectively incorporated both sides of access, demonstrating their ability to enhance maternal health services comprehensively.

4.2.1 Community-Based Strategies

Community-based strategies are implemented as interventions to enhance approachability for facility-based deliveries by raising awareness about the significance of skilled birth attendance.

In Nigeria, community-based intervention has three important components that were designed to improve the uptake of maternal and child health services. These components include a community health educator program, the provision of safe birth kits by health educators, and the use of community dramas [63].

a. Community health educator programs (CORPs)

To address the issue of low healthcare utilization and perceived lack of trust between communities and healthcare facility staff, community resource persons (CORPs) implemented a door-to-door approach to reach pregnant women. These CORPs conducted visits to provide pregnant women with valuable information regarding the advantages of accessing healthcare services and recommended health practices. They emphasized topics such as nutrition during pregnancy and recognizing danger signs, with the aim of enhancing confidence in the quality of healthcare services [63].

b. Safe birth kits and CORPs

To ensure a safer and more sterile delivery environment during delivery, CORPs distributed birth kits to women in their third trimester of pregnancy. These kits aimed to address concerns among pregnant women that primary health centres might not have sufficient supplies for their delivery. Additionally, the kits were provided to reduce the risk of infection for women who preferred to give birth outside of a healthcare facility [(63)].

c. Community drama and CORPs

A set of community dramas was organized with the aim of reshaping social norms related to maternal and child health. These dramas involved a professional theatre group performing shows depicting a pregnant woman's desire to seek facility-based care, despite facing opposition from her mother-in-law. The dramas sought to raise awareness and knowledge about the importance of maternal health services [(63)].

From 2013 to 2015, a study was conducted in Northen of Nigeria to assess the influence of the above community-based intervention on the utilization of maternal health services and pregnancy outcomes. The study concluded that while these interventions led to increased utilization of maternal and infant care services, including facility-based delivery, improved health practices, and enhanced knowledge, none of the interventions showed a significant improvement in maternal or child health outcomes [(63)]. This may be explained by the fact that the increase in healthcare utilization might not have been significant enough to bring about a meaningful change in health outcomes within the relatively short duration of the two-year period [(63)].

In Tanzania and Malawi, studies conducted aimed to identify the effects of community-based interventions involving home-based visits, where women received health education and counselling from trained community health workers. These interventions specifically focused on promoting safe motherhood and newborn care practices, including the importance of utilizing skilled health personnel during childbirth. The studies reported

significant increases in the utilization of "skilled health personnel delivery" or "health facility delivery" as a result of these interventions [103–105].

4.2.2 Performance-Based Financing (PBF)

PBF in maternal healthcare is a supply-side approach where healthcare providers receive financial incentives based on their performance in delivering quality maternal health services and achieving specific outcomes. PBF focuses on enhancing health service provision and quality through several key mechanisms. It aims to enhance staff motivation, minimize provider absenteeism, and improve the financial autonomy of healthcare facilities. Therefore, enabling facilities to improve the quality of their services and potentially lower user fees, PBF strives to create a more efficient and effective healthcare system [106].

Across Africa, including Nigeria, more than 35 countries are either implementing or in the process of introducing a performance-based payment program [107]. A research paper examined the impact of a pilot project that introduced Performance-Based Financing in three districts of Burkina Faso from 2011 to 2013. The study revealed significant increases in the average number of antenatal care (ANC) visits, deliveries, and postnatal care visits by 27.7%, 9.2%, and 119%, respectively. These substantial improvements were observed within a relatively short timeframe, indicating the highly effective nature of the program in the studied setting [106].

In Nigeria, performance-based financing was introduced as a pilot in 2011 in Adamawa, Nasarawa, and Ondo states. Subsequently, five additional states—Borno, Yobe, Gombe, Taraba, and Bauchi—were included in the program in 2016. An Ex post facto and causal research design was used for a study conducted to assess in Adamawa State, located in Northern Nigeria, to assess the impact of Performance-Based Financing (PBF) on Maternal and Child Health over a period of four years. The study's results indicated PBF health facilities showed a notably higher average monthly mean number of deliveries (M=345.7) compared to Non-Financial-Intervention (NFI) facilities (M=35.56) [107].

4.2.3 The Subsidy Re-Investment and Empowerment Maternal and Child Health Program (SURE-P MCH)

The SURE-P MCH program aimed to enhance the availability and quality of maternal health services by implementing a range of interventions targeting both the supply and demand sides. However, the program places more emphasis on supply-side elements. The program was designed for a four-year duration, from 2012 to 2015 [108]. Its components include improving health facility staffing and infrastructure, establishing an efficient supply chain for essential maternal health commodities, implementing conditional cash transfer programs for attending antenatal care (ANC), facility-based delivery, and postnatal care, as well as engaging village health workers and leadership committees in community mobilization efforts. The program specifically prioritized rural and high-need areas to address disparities in access and quality of maternal healthcare [108].

By early 2014, the supply-side component of the SURE-P MCH program had been implemented in 1250 facilities spread across 36 states in Nigeria and the Federal Capital Territory (FCT). The improved physical facilities and enhanced staff capacity resulting from these interventions have had a positive impact. A study conducted to assess strategies for increasing facility-based delivery in Nigeria, India, and Malawi revealed that respondents in Nigeria reported an increase in facility delivery rates, even in locations that only received supply-side interventions [109]. This indicates that high-quality supply provisions can also stimulate demand for maternal healthcare services [109]. Following the implementation of SURE-P, an evaluation was conducted, revealing positive improvements in maternal health indicators. These improvements included a 36.3% increase in the number of pregnant women attending at least four antenatal care visits and a rise of 32.1% in the proportion of pregnant women receiving skilled birth delivery [110,111].

4.2.4 Reproductive Health voucher program

The Reproductive Health Voucher Program is an initiative aimed at improving maternal health outcomes and reducing maternal mortality in low-income countries. Pregnant women are provided with vouchers for essential maternal health services, including antenatal care, skilled birth attendance, postnatal care, emergency obstetric care, and family planning services. By offering these vouchers, the program incentivizes women to seek care at accredited healthcare facilities, leading to increased funding and resources for these facilities. This, in turn, encourages adherence to quality standards, strengthens emergency obstetric care capabilities, and stimulates competition between facilities, prompting capital investment in many facilities. The additional financial resources brought by the vouchers enable healthcare facilities to enhance infrastructure, acquire necessary medical supplies, and recruit skilled healthcare professionals, thus increasing their overall capacity to provide quality maternal health services [112]. The program is administered by a Voucher Management Agency (VMA), which can be either a contracted third-party agency or a government agency. The VMA is responsible for receiving funding and contracts and reimbursing service providers. In its capacity as a managing agent, the VMA is tasked with printing and distributing the vouchers. Often, they employ or contract local voucher distributors who visit communities, provide counselling to potential clients, and distribute the vouchers accordingly [112,113].

In Kenya, a quasi-experimental study comparing reproductive health service utilization before and after the distribution of vouchers revealed that women from communities exposed to the voucher program were twice as likely to deliver at a health facility or under skilled care compared to those from communities without exposure to the program. This indicated that assisted deliveries at healthcare facilities increased by an average of 57% across all districts [114]. Another example is a quasi-experimental (non-randomized) controlled trial conducted in Uganda. The data revealed that the utilization of health facilities for delivering newborns increased among individuals who used the voucher. Health facility

deliveries rose from 58% in the two years before the program's implementation to 67% during the first two years of the program [115].

Despite achieving success in implementing these interventions, many of them struggle to sustain or scale up due to various challenges, including limited funding, short-term project designs, and a lack of political will. These challenges can impede the continuation and wider implementation of effective maternal health programs, limiting their impact on a larger scale.

CHAPTER FIVE

5. DISCUSSION

This literature review was carried out to explore the factors influencing facility-based delivery utilization among women in northern Nigeria. Additionally, the review aims to examine and discuss strategies that have effectively improved the use of facility-based delivery and maternal health services in Low- and Middle-Income Countries, including Nigeria.

Utilizing the Levesque model as a theoretical framework, the study revealed that factors influencing the utilization of facility-based delivery in northern Nigeria could be identified across all five dimensions, including the unequal distribution of health facilities, especially in the northern region of Nigeria with its rural nature, poses a significant challenge for women seeking maternal health services, including facility-based delivery. The review highlighted that living far from healthcare facilities, combined with the inability to afford transportation costs and road difficulty, contribute to women's decision not to deliver at a health facility.

The findings also emphasized the significance of communicating maternal health information in seeking facility-based delivery services during childbirth. As many women believe that pregnancy and delivery are normal processes that do not require professional assistance. From the supply-side, antenatal care visits serve as a significant means for engaging pregnant women and conveying important maternal health messages and information. Nonetheless, for pregnant women who might not have participated in antenatal care visits, the utilization of mass media and various outreach activities could bridge the communication gap. Supply-side interventions that aim to improve access to health information include community-based programs that utilize community health providers and outreach activities. These interventions are recommended to effectively reach women and families, empowering them to make informed decisions and prioritize their well-being during childbirth.

Moreover, literature findings strongly indicate a significant link between the costs of services and the decision to seek facility delivery, which can be attributed to the low socioeconomic status of a majority of the population in northern Nigeria. However, some women chose to seek care at private health facilities, even though government health facilities offered free delivery services and were closer to their homes, or they opted to give birth at home with or without the assistance of Traditional Birth Attendants (TBAs). This decision seems to be influenced by various highly significant factors related to the quality of care provided at the health facility level, including facility infrastructure, the absence of privacy or adequate space during delivery, the unavailability of trained and professional staff who offer acceptable treatment, good hygiene practices, reasonable waiting times, and flexible working hours.

The attitude of healthcare providers is an aspect of quality of care and, at the same time, can be considered a key factor for women and communities to accept the services. In the study, it was included within the dimension of acceptability because it pertains to the patient's perception and experience of how they are treated within the healthcare system. It falls more under the domain of whether patients find the care acceptable and welcoming. Negative attitudes and lack of tolerance among healthcare providers were identified as additional factors discouraging women from utilizing health facility delivery. Experiencing such negative behaviours from healthcare providers could lead pregnant women to change their delivery location and even advise others to do the same. These experiences were compared to the caring attitude of traditional birth attendants, the comfort of the home environment, and the presence of family support during home deliveries. Mistreatment by providers was more frequently reported in public health facilities compared to private ones. This disparity could stem from the demanding work environment of public facilities, characterized by heavy workloads, long working hours, limited incentives, and shortages of equipment and medicines.

Another factor that impacts the acceptance of health services is the gender of the healthcare provider, particularly in the conservative community of northern Nigeria. Women

in northern Nigeria face challenges when it comes to pursuing education due to the restricted and conservative nature of their communities. Consequently, this has resulted in a significant gender gap in educational attainment in the area. These limitations also extend to accessing maternal health services due to cultural norms that discourage women from seeking care from male healthcare providers. A literature review has highlighted that the gender of healthcare providers is a concern for many women, leading them to avoid facility deliveries to avoid physical contact and exposure to male providers during childbirth.

The observations from the literature review indicated that there is no single factor solely preventing women from opting for health facility delivery; rather, the decision seems to be influenced by multiple health system interconnected factors.

Performance-based financing, reproductive health voucher programs, and the Subsidy Re-Investment and Empowerment Maternal and Child Health Program (SURE-P MCH) represent examples of strategies designed to address critical challenges in healthcare quality enhancement. These interventions are underpinned by a multifaceted approach that not only aims to improve staff availability but also focuses on transforming healthcare provider attitudes and upgrading their qualifications. By creating a more positive and supportive environment within healthcare facilities, these programs work to enhance patient trust and encourage the utilization of services, particularly facility-based deliveries.

Moreover, these interventions extend beyond addressing staff-related aspects to encompass the provision of accessible, high-quality services. They strive to make maternal and child health services affordable for all, thereby reducing financial barriers that often deter women from seeking facility-based delivery and other essential care. Reproductive health voucher programs, for instance, offer targeted financial support to disadvantaged women, ensuring that they can access essential services without the burden of excessive out-of-pocket expenses.

Continuous improvement is at the core of these initiatives. They emphasize regular monitoring and evaluation of health facility performance and outcomes, allowing for data-

driven decision-making. This approach ensures that the interventions remain adaptive and responsive to the dynamic needs of the community and healthcare landscape. In this way, Performance-based financing, reproductive health voucher programs, and SURE-P MCH demonstrate their potential to not only elevate healthcare quality but also contribute to the broader goal of improved maternal and child health outcomes in resource-constrained settings. Integrating interventions that target both the demand and supply sides has demonstrated greater effectiveness in improving the utilization of facility delivery services. To achieve improved maternal and neonatal outcomes, it is essential to ensure the sustainability and availability of funds for these interventions, particularly in settings where political commitment, policies, institutions, and health systems are weak and face challenges in their implementation.

5.1 Levesque's conceptual framework

The model's design facilitated the analysis of health system-related factors influencing women's utilization of facility-based delivery in northern Nigeria. It offered valuable insights into service access from a health system perspective. Moreover, the framework also allowed for a more focused exploration of only selected dimensions. While utilizing the framework, one of the challenges faced was the difficulty in categorizing factors into specific dimensions. For instance, healthcare provider attitude can be seen as either appropriateness when it comes to quality of care or acceptability of services provided. Otherwise, the framework served as an effective guide in exploring supply-side factors aligned with the objectives of the thesis.

5.2 Limitations of the Study

The literature review for this study has some significant challenges including language bias as the review primarily included articles written in English. This could result in excluding valuable information from African countries with similar characteristics but different official languages. This limitation raised concerns about the comprehensiveness of the research findings and whether important insights from non-English sources were overlooked. Also,

most of the information found in the literature review was specific to a particular zone or state in Northern Nigeria, such as Kaduna state and the North-west region or a study with a small sample size. While this focus provided valuable insights into maternal health dynamics in these areas. This geographic focus limits the generalizability of the findings to other areas within Nigeria. Finally, there was a limited amount of literature discussing certain factors, such as the role of healthcare providers in providing maternal health information in Nigeria, particularly in the northern region. Additionally, some data were missing, such as the disaggregation of healthcare providers' gender in Nigeria, specifically in the north.

One of the key strengths of this study is its comprehensive analysis and thorough discussion of healthcare service access, with a particular focus on the supply-side factors within the health system. This study addresses an important and understudied topic in a geographic region with high maternal mortality, providing valuable insights into the factors that significantly influence the utilization of facility-based delivery.

CHAPTER SIX

6. CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

Nigeria experiences regional disparity in facility-based delivery utilization between its northern and southern regions, which can be attributed to differences in religion, culture, socioeconomic status, and education. However, the influence of health system characteristics on this disparity remains poorly documented in Nigeria, with supply-side factors potentially being the explanation. Thus, the increase in facility-based delivery utilization occurs through the interaction between the supply and demand sides of the health system.

This literature concludes that in the northern region of Nigeria, numerous women continue to give birth outside of health facilities without skilled attendants, influenced by multiple interconnected factors. Inefficient health systems are unable to effectively preserve women's lives and address their health needs. Physical access remains a challenge due to the unequal distribution of facilities, particularly in hard-to-reach geographical areas including the northern zones of Nigeria. In addition, inadequate communication, and information about the benefits of delivering at a healthcare facility with skilled attendants was associated with low utilization of facility delivery care by Nigerian women in the northern region.

Even when the services are accessible and located in close proximity to the pregnant women's residences, unaffordable skilled care, inadequacies in human resources with negative attitudes, gender of the provider and poorly trained healthcare providers contribute to this reluctance. Furthermore, poor quality of care, insufficient privacy and space during delivery, and shortages of essential drugs and equipment also play significant roles in discouraging women from utilizing facility-based delivery services.

Special attention should be directed towards upgrading maternal healthcare facilities and enhancing the quality of care in the northern geopolitical zones. This approach aims to

promote the uptake of maternal healthcare services, including facility-based delivery, while fostering trust in healthcare providers and facilities. Such efforts can encourage more women to choose facility-based deliveries.

Ensuring that pregnant women have access to appropriately equipped health services during their needs is of utmost importance. Considering that distance has a significant barrier, particularly in rural areas, it is crucial to strategically healthcare facilities within reasonable reach of the communities they serve, ensuring that the intended beneficiaries can readily access the required maternal health services.

Lastly, community engagement, SURE-P MCH, performance-based financing, and reproductive health voucher programs are examples of best practices and interventions that have the potential to enhance facility-based delivery utilization. These initiatives specifically target underserved and vulnerable groups and have shown notable success rates in low-middle-income countries. With strong political commitment and the necessary resources in place, these programs hold the promise of significantly improving the uptake of facility-based delivery, reducing maternal mortality rates, and enhancing overall maternal health outcomes in Nigeria.

6.2 Recommendation

Based on the study's findings, a multisectoral approach is necessary to address the factors influencing the utilization of facility-based delivery services among women in Northern Nigeria. To enhance facility-based delivery utilization in the region from the supply-side perspective, the following recommendations are proposed for policymakers in the Ministry of Health. It is important to emphasize that achieving meaningful and sustainable improvements in maternal healthcare outcomes requires a comprehensive and multi-faceted approach. This approach entails effective collaboration between the government, healthcare providers, communities, and other relevant stakeholders.

1. Expanding and improving healthcare infrastructure, with a particular focus on refurbishing health facilities in underserved regions. This initiative involves reconstructing and renovating healthcare facilities with specific considerations for privacy during delivery and providing adequate space for accompanying relatives. Additionally, ensuring these facilities are well-equipped to manage childbirth.

2. Enhancing the training and deployment of skilled health personnel, such as midwives, obstetricians, and nurses, especially to primary health care facilities in the Northern region. This training should focus on providing high-quality and respectful services to pregnant women. Additionally, implementing incentive programs to attract and retain healthcare professionals in underserved areas can enhance healthcare provider satisfaction, leading to improved performance and positive attitudes towards patient care.

3. Establishing long-term outreach and community-based programs to reach remote and rural communities where access to healthcare facilities is limited. These initiatives aim to provide essential maternal health services, raise awareness about the advantages of facility-based deliveries, and enhance the referral of labour cases to nearby healthcare facilities.

4. Ensuring the widespread dissemination of comprehensive maternal health information through community health workers, effectively reaching women across Nigeria, and promoting a better understanding of maternal health topics, including the importance of delivering in health facilities under the supervision of skilled attendants.

5. Implementing quality improvement initiatives to elevate the standard of maternal healthcare services in healthcare facilities. Such initiatives involve conducting regular assessments and closely monitoring the performance of health facilities.

6. Reassessing and revising existing policies to ensure equitable access to maternal health services and facility-based delivery, with a specific focus on reaching the most underserved women. These revisions include allocating funds for consumables expenses to minimize out-of-pocket costs and enabling women to access services without financial burden, regular in-service training, re-training of healthcare providers in maternal health facilities and incorporating these measures into national policies and programs.

7. Reviving and scaling up effective interventions and best practices to enhance maternal health services, improve the quality of care and address regional disparities. These include community engagement, SURE-P MCH, performance-based financing, and reproductive health voucher programs. These initiatives aim to increase the uptake of maternal health services, particularly facility-based delivery among pregnant women.

8. Conducting further research to explore and analyze the distribution of healthcare personnel, particularly in terms of gender, within the Northern region. This research would contribute to addressing potential gender-related issues within the healthcare workforce distribution and could inform strategies for more equitable and effective resource allocation.

Research:

Additional studies are necessary to delve deeper into the significance of the health system and quality of care in enhancing maternal health services. These studies should focus on identifying best practices and interventions that can be effectively implemented in remote and hard-to-reach areas.

It is important to emphasize that achieving meaningful and sustainable improvements in maternal healthcare outcomes requires a comprehensive and multi-faceted approach. This

approach entails effective collaboration between the government, healthcare providers, communities, and other relevant stakeholders.

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