# Understanding Maternal Care Preferences and Perceptions to Curb Maternal Mortality in Rural Africa

MSc Thesis

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## PREFACE

Paper 1 did not require ethical approval as it was a systematic review of primary studies. For paper 2, the original International Development Research Center project received ethics clearance from the National Health Research Ethics Committee of Nigeria on 18/04/2017. The qualitative study presented in paper 2, which used data collected in the larger project, received ethics clearance from the University of Ottawa Research Ethics Board on 18/03/2019. For paper 1, Arone Fantaye (first author) and Sanni Yaya conceptualized and designed the review. Thereafter, they carried out the screening, data extraction and analysis, and quality appraisal. Arone Fantaye narratively synthesized the review findings and drafted the discussions and conclusions of the review. Arone Fantaye and Sanni Yaya assessed and determined the confidence grades for each review finding. Nathali Gunawardena validated the review methodology and results, and thereafter edited the manuscript along with Sanni Yaya. Arone Fantaye, Sanni Yaya and Nathali Gunawardena all edited the peer-reviewed versions of the manuscript. From the Women's Health and Action Research Center, Dr. Friday Okonofua and Dr. Lorretta Ntoimo were the local investigators for the larger project and thereby for paper 2. In particular, they coordinated and directed the recruitment of participants and the data collection phase in Nigeria. Dr. Friday Okonofua and Dr. Lorretta Ntoimo provided the information regarding recruitment and data collection. Arone Fantaye (first author) and Sanni Yaya carried out the qualitative data analysis, including the coding. Arone Fantaye drafted the written manuscript, including the abstract, introduction, methods, results, discussion and conclusions. Thereafter, Sanni Yaya, Friday Okonofua, and Lorretta Ntoimo reviewed the original and peer-reviewed manuscript and provided input, before all authors accepted the final draft.

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***This thesis is dedicated to the girls and women in rural Africa who are at the highest risk of poor maternal outcomes, and to those who dedicate their time and effort to help improve maternal health outcomes throughout the continent.***

# Understanding Maternal Care Preferences and Perceptions to Curb Maternal Mortality in Rural Africa


## RÉSUMÉ / ABSTRACT

[English follows]

**Contexte:** La sous-utilisation des soins de santé maternelle formels dispensés dans les centres de santé contribue fortement à un risque élevé de mortalité maternelle chez les femmes vivant en milieu rural africain. Pour accroître le recours aux soins maternels formels, il est important d'examiner les importants problèmes de santé maternelle qui touchent les collectivités et comprendre comment ils perçoivent le recours aux soins maternels formels et traditionnels. Cette thèse a pour but d'identifier les facteurs clés, les défis et les besoins des populations rurales en matière de soins de santé maternelle formels. Pour ce faire, deux études ont été réalisés 1) L'article #1 a exploré les préférences des femmes africaines vivant en milieu rural en matière de soins de santé maternels ainsi que les facteurs qui motivent ces préférences. 2) L'article #2 a exploré les perceptions des personnes âgées sur les raisons de la sous-utilisation des soins de santé maternelle, ainsi que les avenues possibles pour améliorer ceux-ci en contexte rural au Nigéria.

**Méthodes:** 1) Dans l'article #1, une revue systématique a été effectuée sur les bases de données Ovid Medline, Embase, CINAHL et Global Health, et 40 études qualitatives portant sur les préférences des femmes en matière de soins de santé maternelle en milieu rural africain ont été identifiées. Ensuite, une synthèse narrative a été menée afin de compiler les résultats et rapporter les diverses tendances identifiées. 2) Quant à l'article #2, les données ont été collectées lors des neuf rencontres communautaires, auprès de 158 personnes âgées provenant de neuf communautés rurales du Nigéria. Les données recueillies ont été analysées de manière inductive par une analyse thématique.

**Résultats:** 1) Une gamme de préférences en matière de soins de santé maternelle formels, traditionnels pendant les périodes antepartum, intrapartum et post-partum a été identifiée. La majorité des études consultées ont mis en relief des préférences pour des soins prénataux ou une combinaison de soins de santé maternelle traditionnels et formels. Pendant l'accouchement intra-partum, les femmes rurales exprimaient un large éventail de préférences, y compris les accouchements médicalisés, les accouchements traditionnels en milieu familial, ainsi que la combinaison de soins formels et traditionnels en fonction de la nature des complications. La majorité des études ont également mis en exergue les préférences des femmes vis-à-vis des soins postnataux traditionnels, des accoucheuses traditionnelles, de l'auto-soin et les rituels culturels. Les facteurs qui ont contribué à ces préférences étaient liés au besoin perçu de soins maternels formels ou traditionnels, à l'accessibilité aux soins formels ou traditionnels et aux normes, croyances, et impératifs

culturels et religieux. 2) Les raisons perçues de la sous-utilisation des soins maternels formels comprennent la mauvaise qualité des soins, l'inaccessibilité physique et financière des services, et le manque de connaissances. Les causes médicales liées au paludisme, les insuffisances des services en établissement, le recours aux soins maternels traditionnels et la faible sensibilisation de la communauté ainsi que la négligence ont été identifiés comme les causes des décès maternels chez les femmes. L'accès accru à des soins de haute qualité, la promotion et l'éducation en matière de santé, le soutien communautaire et l'assistance surnaturelle ont été les solutions proposées.

**Conclusions:** Les principaux chantiers en milieu rural africain portent notamment sur la disponibilité des ressources humaines et matérielles, la qualité technique et interpersonnelle des soins dans les établissements de santé, l'accessibilité physique, l'accessibilité financière, l'accessibilité socioculturelle, la sensibilité culturelle et religieuse, la connaissance et la sensibilisation des communautés. De façon générale, les résultats ont révélé que des interventions multifacettes qui font participer les populations cibles et tiennent compte des contextes, des défis, des besoins et des priorités de la collectivité sont nécessaires à l'élaboration d'initiatives et de programmes localement acceptables. De telles interventions augmenteront la probabilité de changements positifs efficaces et durables dans l'utilisation des soins de santé et la réduction de la mortalité maternelle.

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**Background:** The underutilization of formal, facility-based maternal care is a major contributor to the high maternal mortality rates among women living in rural Africa. Increasing the use of formal maternal care requires exploration of important maternal health issues affecting community members and comprehension of how they perceive the use of formal and traditional maternal care. This thesis aimed to identify the key factors, challenges, and needs of rural populations for the uptake of formal maternal care. Paper 1 explored rural women's preferred choices for sources of maternal care as well as the factors that contribute to their preferences in Africa. Paper 2 explored elders' perceptions about reasons for the underutilization of maternal healthcare and maternal death, as well as potential solutions to improve formal care use in rural Nigeria.

**Methods:** 1) In paper 1, a systematic search on Ovid Medline, Embase, CINAHL, and Global Health identified 40 qualitative studies that elicited women's preferences for maternal care in rural Africa. Reviewers collated the findings and reported on patterns identified across findings using the narrative synthesis method. 2) Data were collected through 9 community conversations with 158 elders in 9 rural Nigerian communities. The data were analyzed inductively through thematic analysis.

**Results:** 1) A variety of preferences for formal, traditional and both formal and traditional maternal care during antepartum, intrapartum and postpartum periods were identified. The majority of the studies reported preferences for formal antenatal care or a combination of traditional and formal antenatal care. During intrapartum, rural women held a wide range of preferences, including facility-based births, traditional births in a domestic setting, as well as a combination of formal and traditional care depending on the onset of complications. The majority of the studies reported preferences for traditional postnatal care involving traditional attendants, self-care, and cultural rituals that fend off witchcraft. The factors that contributed to these preferences were related to the perceived need of formal or traditional maternal care, accessibility to formal or traditional care, and cultural and religious norms, beliefs and obligations. 2) The perceived reasons for the underuse of formal maternal care included poor qualities of care, physical and financial inaccessibility of facility-based services, and lack of knowledge and awareness. Reasons for women's maternal deaths included malaria and blood displacement, facility-based service deficiencies, uptake of traditional maternal care, and poor community awareness and negligence. Increased access to high-quality care, health promotion and education, community support and supernatural assistance were the proffered solutions.

**Conclusions:** The major areas that need improvement across rural Africa include human and material resources availability, technical and interpersonal quality of care in health facilities, physical accessibility, financial accessibility, sociocultural accessibility, cultural and religious sensitivity, and community knowledge and awareness. Generally, the findings reflect the need for multifaceted interventions that engage target populations and consider local contexts, realities, and related needs in order to develop locally acceptable interventions. Such interventions will increase the likelihood of effective and long-lasting positive changes in healthcare utilization and maternal mortality.

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**ABBREVIATIONS**

| | |
|---|---|
| **WHO:** | World Health Organization |
| **MDG:** | Millennium Development Goal |
| **SDG:** | Sustainable Development Goal |
| **ANC:** | Antenatal Care |
| **PNC:** | Postnatal Care |
| **HCP:** | Health Care Professional |
| **TBA:** | Traditional Birth Attendant |
| **CBA:** | Community-based Actor |
| **CASP:** | Critical Appraisal Skills Programme |
| **CERQual:** | Confidence in the Evidence from Reviews of Qualitative Research |
| **PHC:** | Primary Health Centers |
| **CC:** | Community Conversation |
| **LGA:** | Local Government Area |
| **ETE:** | Etsako East |
| **ESE:** | Esan South East |

# CHAPTER 1: INTRODUCTION

## 1.1 Problem Statement

Though pregnancy and childbirth are jubilant moments in life for most people, they are unfortunately associated with death for many women in the developing world. Evidence-based maternal care can prevent the majority of maternal deaths. The prevention or treatment and management of complications that lead to maternal deaths during pregnancy, childbirth and puerperium are well documented [1, 2]. In consort, health professionals and the health facilities are the best solutions to preventing, treating or managing maternal complications and thereby reducing the likelihood of maternal mortality [3, 4]. Unfortunately, maternal mortality rates continue to be especially high in rural African communities [5-7]. Women living in rural African communities still face a dire situation in which access to evidence-based care is hindered by various factors, meaning evidence-based care is not a guaranteed source of maternal care provision. Consequentially, many women across rural Africa underutilize evidence-based maternal care and instead opt for unproven, unclean, and unsafe traditional sources of maternal care [8, 9]. Receiving traditional maternal care increases the likelihood of maternal mortality [1, 2]. For some rural women who do receive facility-based (formal) maternal services, inadequate care in rural health facilities also increases their risk for maternal death [10, 11].

Efforts to improve access to, and utilization of, quality maternal healthcare have often been made without a clear comprehension of the various reasons for existing utilization patterns, including in communities with a predominant preference for traditional maternal care [12, 13]. Consequentially, a poor understanding of the values, beliefs, and needs of people in populations for the increased access and uptake of maternal healthcare services has hampered the success of many strategies and initiatives. With many African countries failing to meet MDG 5 of reducing maternal mortality by 75% from the baseline MMR in 1990, the continuation of current patterns of healthcare inaccessibility and underutilization in rural Africa may keep African countries from meeting SDG 3.1 targets by 2030.

## 1.2 Background

### 1.2.1 Maternal Health and Maternal Mortality

Maternity is often thought of as a blissful and rewarding experience, but for far too many women in the developing world, such experiences lead to morbidity and mortality. As such, maternal health has been a key global health concern for several decades now. According to the World Health Organization (WHO), maternal health refers to women's health during the antepartum, intrapartum and postpartum periods along the

continuum of maternity [14]. Maternal healthcare refers to formal health services provided to women during these periods. Antenatal care (ANC) services include a full range of health-promoting services intended to screen, identify and manage obstetric complications and infections, such as preeclampsia [15]. ANC services, along with regular and timely ANC visits, are vital opportunities for health professionals to promote the use of skilled care for childbirth and postnatal care (PNC) and provide counsel for family planning, nutrition, and further healthy behaviours. Childbirth care services include labour and delivery services during normal childbirth and management of cases during complicated childbirth [16]. PNC, particularly in the first hours and days after childbirth, is a critical period of maternal care for the prevention or management of post-delivery complications. It is also essential for the promotion of breastfeeding, family planning, nutrition, and immunizations [17, 18].

Improving maternal health is still a major priority in international development today, with targeted efforts aiming to reduce the global burden of maternal mortality. The concept 'maternal mortality' refers to the death of women during pregnancy, childbirth, or within 42 days of the termination of their pregnancy (puerperium), from direct or indirect causes related to or triggered by the pregnancy or its management [19]. The causes of death cannot be accidental or incidental. Most maternal deaths occur during childbirth and in the early days of puerperium [20, 21]. The direct and indirect medical causes of maternal mortality are well documented and have largely been established as preventable or treatable [22]. The main direct medical causes are severe maternal bleeding, unsafe abortion, pregnancy-related sepsis, hypertensive disorders, and obstructed labour [23, 24]. Indirect medical causes mainly spur from pre-existing conditions aggravated by the pregnancy, including HIV infection, anemia, malaria, and cancer [25, 26].

### 1.2.2 Global Targets for Improving Maternal Health Outcomes

Globally, a maternal mortality ratio (MMR) of nearly 400 deaths per 100 000 live births was prevalent in the late 1980s, mostly from pregnancy or childbirth-related complications [5]. In 1987, the WHO, UNFPA, and World Bank launched the Safe Motherhood Initiative at the Safe Motherhood Conference in Nairobi, Kenya [27]. The purpose of this initiative was to improve maternal health outcomes by providing adequate primary healthcare, quality antenatal care, skilled childbirth assistance and access to essential care for at-risk women [27, 28]. The international gathering catalyzed the fight against high maternal mortality rates by setting the target reduction of maternal mortality to 50% by the year 2000 [29].

In 2000, despite progress in reducing mortality rates, the primary aims of the Safe Motherhood Initiative were not achieved in the developing world [27, 30]. In response, Millennium Development Goal (MDG) 5 was developed as part of a set of 8 MDGs released after the Millennium summit in 2000, involving 189 countries as signatories [30]. Building on globally shared calls to further reduce maternal deaths, target 5A aimed for a

reduction in MMR by 75% between 1990 and 2015, while target 5B aimed for universal access to reproductive health by 2015 [31-33]. The attempt to meet MDG 5 targets drove countries across the globe to develop strategies and programs aimed at tackling maternal mortality, primarily for improvements in access to, and utilization of, health facility-based ANC, intrapartum care, and PNC [30, 31, 33]. Despite maternal health investments and the success of some interventions between 1990 and 2015, the global MMR only declined from 385 (1990) to 216 (2015) maternal deaths per 100 000 live births [5, 34]. This 44% reduction fell way short of the 75% target set in MDG 5A. In the developing world, where approximately 99% of maternal deaths occur, the MMR in 2015 was 239 per 100 000 live births. In contrast, the MMR in the developed world was 12 per 100 000 live births [35].

Expectedly, research and investment into improving maternal health outcomes, particularly in the developing world, remained a key priority for sustainable development post-2015. This sustained commitment to reducing maternal mortality contributed to the development of Sustainable Development Goal (SDG) 3 in 2015, with the first target (SDG 3.1) aiming for fewer than an average global MMR of 70 maternal deaths per 100 000 live births by 2030 [36]. The primary global target for individual countries was to reduce their MMR by at least two-thirds of their baseline MMR in 2010 [36]. For countries with a high baseline MMR (over 420) in 2010, a supplementary national target aimed for an MMR of less than 140 deaths per 100 000 live births by 2030, double the primary global target. According to the WHO, achieving these targets would require effective strategies and interventions in all countries [36].

### 1.2.3 Association Between Maternal Healthcare Utilization and Maternal Mortality

Along with MMR, a set of major indicators used to measure and observe maternal health include the utilization of evidence-based antenatal, childbirth and postnatal care services in health facilities and the assistance of accredited health professionals [37-39]. Ample research evidence suggests that the prevention, treatment, and management of the causes of maternal mortality involve evidence-based care throughout pregnancy, childbirth, and puerperium [1, 40]. As most medical causes of maternal mortality are preventable, complications that lead to maternal death are best treated and managed by evidence-based care in health facilities [1, 2, 36]. Skilled health professionals with access to drugs, proper equipment and supplies, and the capacity to promptly refer women to emergency obstetric care are the attendants in health facilities. On the contrary, traditional or other informal methods of care are not evidence-based and thereby cannot adequately treat or manage complications that could lead to maternal mortality. Naturally, prominent organizations such as the WHO and UNICEF have identified the underutilization of adequate maternal healthcare as a major cause of maternal mortality [2, 41]. However, adequate is a keyword in the topic of preventing maternal mortality

because in many areas across the developing world, the utilization of maternal healthcare services does not always correspond with the provision of high-quality care. The provision of inadequate quality care thereby hinders the improvement of maternal outcomes. According to the Institute of Medicine, the timely provision of evidence-based, effective, safe, equitable and patient-centred care is the best guarantee for high-quality care [42]. Technically incompetent health professionals, negative interpersonal communication between providers and patients, and the unavailability of infrastructure, drugs, medical equipment and other basic necessities in the facility lead to the provision of poor and inadequate quality of maternal care [43-45]. As a matter of fact, the use of inadequate and poor quality care may not reduce women's likelihood of maternal mortality any more than that of women who do not use facility-based services [1].

### 1.2.4 Maternal Health Situation in Africa

Africa has the highest average MMR (542) amongst WHO regions, the lowest percentage change in MMR between 1990 and 2015 (44%), the highest number of maternal deaths (195 000) in 2015, and the highest lifetime risk of maternal death at 1 in 37 [5]. These numbers are unsurprising as many women across the continent still experience significant barriers in access to routine and emergency maternal healthcare, and increased risks for death during maternity [35, 46, 47]. Access to evidence-based healthcare further varies, rather significantly, by place of residence, with significant gaps in MMR between rural and urban areas. Maternal mortality is highest in rural and other remote populations [5, 35, 48, 49], reflecting the inequities in access and utilization of adequate evidence-based maternal care. Extensive research evidence has identified that rural women are least likely to access and utilize a health facility for maternal care across sub-Saharan and North Africa [6, 50-52]. Moreover, many rural women continue to make less than the four recommended ANC visits, give birth outside of a healthcare setting, and spend the majority of the postpartum period at home [46, 53]. Underqualified staff, misdistribution of qualified staff, misdistribution of adequate health facilities, and the inaccessibility of health facilities were identified as the main reasons for the poor uptake of facility services, and by extension, the high maternal mortality rates in rural Africa [50, 54]. Many women throughout rural Africa continue to seek non-evidence based and unsafe traditional medicine for maternal care, which also accounts for the high maternal mortality rates.

In terms of history, traditional medicine and traditional care-takers have a far longer history than modern medicine and health professionals in Africa [8]. Accordingly, this traditionally ingrained source of care is what links many rural women to traditional care-takers and services throughout pregnancy and childbirth [9]. Traditional care-takers have primarily inherited their knowledge of maternal care practices from the socio-cultural and spiritual beliefs of their communities. Even today, traditional maternal services are the primary

source of maternal care for many women living in rural African communities [8, 9]. Generally, the use of traditional care is by personal preference and choice for some service users, while for others, it is the only available choice. Unfortunately, reducing the use of unproven and unsafe traditional methods of care and maternal mortality rates has proven to be highly complex. The reason for this is because determinants of the use of traditional maternal care do not solely concern the expected inhibitory contributions of culture, tradition, and social norms [8]. Rather, the determinants span far wide, as explored and reported in the literature review (chapter 2) below.

### 1.2.5 Maternal Health Situation in Nigeria

In 2015, Nigeria recorded the highest number of maternal deaths in the world at 58 000 [5]. Though the country represents only 2% of the world's population, this disproportionally constitutes about 19% of the global number of maternal deaths. The majority of these deaths were preventable through access and use of healthcare facilities throughout the continuum of maternal care [55, 56]. Nigeria's healthcare system essentially contains three tiers. The Primary Healthcare Center (PHC) acts as the primary source of care and the first point of contact. Secondary Care facilities (general or regional hospitals) act as the first referral level, while Tertiary Care facilities (teaching hospitals) act as the second referral level [57]. PHCs provide basic emergency obstetrics care comprising pregnancy care, skilled childbirth care, removal of retained placental and fetal tissue, administration of antibiotics, and basic postnatal care [57, 58]. General, regional and teaching hospitals provide comprehensive emergency obstetrics care comprising all basic obstetrics care services and cesarean delivery, blood transfusion, and postnatal treatment of a newborn. Essentially, PHCs are the primary source of maternal care for pregnant women, while the more complicated obstetric cases are often referred to higher levels of care in a hospital [57, 58]. For rural Nigerian populations especially, which amount to 96 million people and 49% of the total population, PHCs are the first point of contact for facility-based services, and sometimes the only source of contact for facility-based services [57, 59]. Unfortunately, the approximate 9.2 million women and girls that become pregnant every year have a 1 in 13 probability of maternal death, with rural women in particular far less likely to access and receive healthcare services during the antepartum, intrapartum and postpartum periods than urban Nigerian women [53].

According to the 2013 Nigeria Demographic and Health Survey, 86.0% of urban women in the country received antenatal care from a health professional, while only 46.5% of rural women received such skilled antenatal services [53]. Though 74.5% of urban women made the recommended 4 ANC visits, only 38.2% of rural women received skilled ANC at least four times. Moreover, 46.7% of rural women received no formal ANC at all. During childbirth, only 21.9% of rural women delivered in a health facility, far less than urban women (61.7%) [53]. An

astounding 76.9% of rural women across Nigeria delivered at home or in the homes of traditional birth attendants. Following childbirth, 59.1% of urban women received a postnatal check in the critical first two days after childbirth, compared to only 29% of rural women [53].

### 1.3 Research Questions

1A) What are women's preferred sources of antenatal, childbirth and postnatal care in rural Africa?

1B) What are the factors that contribute to women's preferences for formal or traditional sources of maternal care in rural Africa?

2A) What are the perceptions of community elders about underutilization of facility-based maternal healthcare services and causes of maternal death in their communities in rural Nigeria?

2B) What are the views and suggestions of community elders regarding potential solutions that can increase the use of formal, evidence-based maternal care and reduce maternal mortality in their communities in rural Nigeria?

### 1.4 Objectives

1. To explore and synthesize the preferred choices for formal and traditional sources of maternal care as well as the factors that contribute to the preferences of rural women in Africa.

2. To explore perceptions of elders about reasons for the underutilization of formal maternal healthcare services and the occurrence of maternal deaths in rural Edo State, Nigeria.

3. To identify elders' proffered solutions in order to increase utilization of formal, evidence-based maternal care and reduce maternal mortality in their communities.

### 1.5 Rationale for the Thesis

Despite increasing efforts to curb maternal mortality in the last three decades, the lack of research evidence to support the development and utilization of formal maternal healthcare services has hindered progress in rural African communities. Efforts to promote the uptake of evidence-based maternal care require vast research to help identify what deters utilization and what communities need across rural Africa. The ways people construct and make sense of maternal health issues do vary throughout the continent, as well as between communities and individual households. Generally, one can attribute these unique viewpoints and insights to differing

contexts and daily realities. Increasing the use of evidence-based maternal care and reducing maternal mortality rates thereby calls for the identification of how community members view formal and traditional maternal care, what maternal healthcare uptake issues they experience, and what they need to uptake formal maternal healthcare services. This thesis explored these areas of inquiry and employed a thesis-by-articles format that is composed of a systematic review manuscript (chapter 3) and a primary qualitative research manuscript (chapter 4).

To improve the acceptability and appeal of formal maternal care services, it is crucial to ascertain preferences for maternal services throughout the continuum of care [60, 61]. Chapter 3 explores and systematically summarizes the preferences and contributing factors to the preferences of rural African women for sources of maternal care during antepartum, intrapartum, and postpartum. The review improves understanding of the factors that influence preferences for formal and traditional maternal care throughout rural areas of Africa and thereby helps to identify the main challenges, needs, and priority areas of rural women across Africa. This information will complement other research in directly informing policy-makers and intervention designers across Africa in the development of policies and interventions. Through policies and interventions, health systems can become more adaptive, sustainable and responsive to the multifactorial values and needs of women in rural communities. The review also helps document major knowledge gaps in the literature. It thereby highlights areas that need to be further addressed in order to increase access and use of facility-based care and to curb maternal mortality.

Research in maternal health worldwide has shown that no single solution exists to address healthcare underutilization and maternal mortality as each community faces and experiences heterogeneous challenges, needs and priorities. As the most effective local programs and strategies are those that consider contexts [62-64], efforts to improve healthcare utilization and maternal health outcomes of rural women must gather preliminary contextual information of different rural communities. This information must identify the factors and challenges that inhibit the use of formal maternal healthcare, as well as the needs to improve the uptake of formal maternal healthcare. Research evidence shows that it is crucial for health planners and researchers to target community gatekeepers, which can deter or enable women to seek, reach and receive formal maternal care [65]. In rural Africa, gatekeepers that can influence the use or non-use of maternal care are often community chiefs, elders, male partners and other influential males within the household or throughout the community. In consort, chapter 4 explores community elders' perceptions about the reasons for the underutilization of maternal healthcare and the reasons that lead to maternal death in rural Edo State, Nigeria. As an age-based traditional hierarchy exists in most rural African communities, community elders tend to be key influential members for maternal health-related decisions at the household and community level. This

study will help to provide a clearer understanding of existing resources, challenges, and local needs by engaging community elders and exploring their perceptions, beliefs, and needs regarding maternal health services in Esan South East and Etsako East, Nigeria. Findings also enable community engagement in the identification of maternal health issues and the formulation of solutions. Engaging influential members in the design and implementation of resolutions will, in turn, increase the acceptability of strategies and initiatives aiming to improve healthcare access and use. Essentially, the findings will help inform the design of contextually appropriate, community-based interventions or help to refine and adapt existing interventions. Lastly, this research will help health systems in study communities in Esan South East and Etsako East to be more sensitive and responsive to the multifaceted maternity needs of women in rural populations.

# CHAPTER 2: LITERATURE REVIEW

This chapter reviews empirical evidence from rural Africa to identify the range and depth of factors that influence the utilization or underutilization of facility-based (formal) maternal services. Relevant full-text articles from academic journals were searched, identified and accessed on the Global Health and Scopus databases through the University of Ottawa's online library. The review only included academic articles published from 2007 and on in order to include the most recent evidence. In addition, relevant grey literature documents were searched and identified through the Google Scholar web search engine.

The use of evidence-based services throughout the continuum of maternal care is the major and most crucial intervention for reducing maternal mortality. Nevertheless, uptake of such services is still very low, which is influenced by a variety of factors. Several studies have identified the factors that influence and shape the use and non-use of maternal healthcare services. However, as conveyed in the literature review below, the heterogeneous findings reveal inconsistent patterns of association between most stated factors and the utilization of facility-based care. To construct the literature review, the thesis author first formed summaries of the relevant components from the retrieved full-text articles in a Microsoft excel document. The data were sorted and arranged based on the determinant categories for utilization or underutilization. Section 2.1 systematically identifies and reviews the determinants of maternal healthcare utilization and underutilization throughout rural Africa. Section 2.2 of the literature review focuses on the determinants of maternal healthcare utilization and underutilization throughout Nigeria.

## 2.1 Determinants of Maternal Healthcare Utilization and Underutilization in Rural Africa

### 2.1.1 Sociodemographic and Socioeconomic Factors

Vast research evidence has identified maternal age as a factor that influences the choice to seek and use healthcare services across rural Africa. The evidence points to younger women being more likely to seek and utilize maternal healthcare services than older women [66-70]. Younger women, which generally refers to adolescents and women in their early 20s in the literature, were less experienced with pregnancy and childbirth, thereby feeling the need for professional medical assistance. However, this association was not always consistent. In some communities, older women, who were often grouped as those over the mid-20s, were more likely to use facility-based services [71-75]. Older women are more likely to have greater experience with healthcare and tend to have more decision-making power in the household, giving them greater ability to utilize healthcare services. In contrast to both sets of findings, a study in rural Tanzania reported that age has no association with the uptake of facility-based care [76].

Another major factor is education. Women with little or no formal education are more likely to seek and utilize traditional maternal care from traditional attendants in their communities [20, 66, 67, 69, 71, 74, 77-82]. Likewise, women with partners with little or no formal education are also less likely to utilize healthcare services [20, 66, 69, 82-87]. In Adjiwanou and LeGrand [77], higher education at the community level had a significant positive effect on the use of formal maternal health services. Individuals and communities with greater formal education tend to have greater knowledge about danger signs, complications, and the significance and benefits of facility-based care compared to those with lower formal education or no education [66, 67, 81]. They are also often more sensitive about their health, more aware of available healthcare services, and more aware of when and where to seek formal care. In contrast to studies in which formal care use increases with each education level, studies in some communities found that women with higher than the secondary level of education were less likely to utilize a health facility for maternal care services [74, 88, 89]. Meanwhile, in rural Eritrea, a study found that a mother's educational level was not associated with uptake of formal or traditional care, which the authors believed to be the result of male-dominated power differentials between the husband and the wife [87]. In correspondence with education, higher individual and community literacy rates are strong predictors of facility-based care uptake [67, 72-75]. For example, in Solanke and Rahman [75], women who live in a community with low literacy rates are 65.4% less likely to use facility-based services than women in communities with high literacy rates. The ability to read and write increases access to health information and is also associated with higher socioeconomic status and means to access facility-based services [73, 75].

Various studies link marital status to healthcare decision-making and utilization patterns of maternal care services, while others find no significant links. Some studies report that married women are more likely to use

maternal healthcare services than non-married women [84, 88, 90]. This could be related to higher household income and financial means to access health services, as well as the social stigma that non-married women can face if they become pregnant out of wedlock. In other studies, it is rather non-married (single, divorced, separated, widowed) women who are more likely to use maternal healthcare services compared to married women [68, 91]. Women who are not married are often more autonomous in patriarchal communities and thereby better able to seek facility-based care. Relative to the form of relationships, the likelihood of using formal maternal care is higher among women in monogamous relationships. Conversely, women in polygamous relationships are at higher risk for traditional ANC and childbirth [80, 82]. Despite the observed associations in the above studies, the association between marital status and healthcare utilization is statistically insignificant in other rural populations [66, 92].

Research evidence indicates that parity has an inverse relationship with maternal healthcare utilization. Lower parity, namely nulliparity and primiparity, is positively associated with facility-based care compared to higher parity [67, 71, 75, 76, 79, 82, 85, 90, 91, 93]. For example, in rural Tanzania, nulliparous women are nearly four times more likely to have a facility-based childbirth than primiparous and multiparous women [76]. Multiparous and grand multiparous women tend to feel that they have greater experience, which along with successful previous pregnancies, reduces the perceived necessity of facility-based care. They also have greater confidence in dealing with certain complications and having another positive maternal and neonatal outcome. Household responsibilities related to child-rearing may also motivate multiparous women to seek traditional maternal care closer to their residence rather than going to a facility. However, in Okonofua et al. [88], the use of primary maternal healthcare centres for delivery is conversely higher amongst women who have five or more living children compared to women who have 0 to 2 children. Greater levels of education, where greater parity predicted the increased uptake of formal care (Esan South), could confound the relationship between parity and utilization in the study.

Research across rural Africa has consistently documented that higher household income and wealth quintiles are positively associated with maternal healthcare utilization [20, 66, 67, 69, 71, 72, 75, 79, 80, 85, 91, 93-99]. Accordingly, factors positively associated with increased maternal healthcare utilization include both women who are employed [69, 72, 75, 79, 100] and those with employed partners [72, 88]. Women in these financial situations possess greater ability to access, afford and utilize quality facility-based maternal care throughout the continuum, from receiving early ANC, through skilled supervision during childbirth, to the crucial clinical PNC during early puerperium. Moreover, a partner's employment can be seen as a proxy for family income. Families with lower household income tend to access facility-based care far less often, with many choosing to remain home where they can receive easily accessible traditional maternal care [96-98]. However, in Benova et

al. [99], higher economic resourcefulness is associated with lower odds of facility-based childbirth, even though it is positively associated with clinical ANC. Moreover, Chorongo et al. [89] report that employed women are less likely to receive ANC in a health facility than unemployed women, further conflicting with the dominant association between employment and maternal care in the literature. Other studies across rural Africa rather found that socioeconomic variables have insignificant influence or a counterintuitive effect on the utilization of formal maternal care [77, 92]. Higher wealth did not signify greater uptake of formal maternal care services.

#### 2.1.2 Poor Awareness, Planning, and Preparation

Lack of familiarity and awareness of pregnancy complications and danger signs are critical factors that hinder the timely utilization of formal maternal health services and increase the likelihood of mortality [67, 87, 101-103]. For individuals with general awareness, having poor knowledge and understanding of the significance of facility-based care and guidance from a health professional can deter their uptake of formal maternal care regardless of their awareness [87, 92, 104, 105]. Women who receive counsel about birth preparedness and complication readiness, such as danger signs and locations to give birth, during clinical ANC tend to seek a facility-based childbirth [106, 107]. Similarly, women who receive counsel and advice during ANC visits to receive early facility-based PNC are also more likely to receive facility-based PNC [78, 108]. Low community exposure to health information from the media, either from print or electronic mediums, is associated with poor utilization of facility-based care [66, 67, 75, 79, 87, 109]. For example, in rural Nigeria, with an increase in access to media from 'none' to 'moderate' and 'high,' the percentage of facility-based childbirth rises from 12.9%, to 20.5%, to 39.5%, respectively [75]. Lack of media enables the continued spread of misinformation, myths, and negative representations of using formal care, which negatively influences the health-seeking behaviours of some community members. Health promotion disseminated from the media in rural communities is highly crucial since it increases awareness and general knowledge of various maternal healthcare services. Health promotion through media sources could thereby counteract myths, misconceptions and resultant community-wide misrepresentations with more positive community-wide representations. Poor family planning is a predictor of out of facility delivery [85, 91] and decreased uptake of formal PNC services [92]. A cross-sectional study by Arba, Darebo, and Koyira [85] reports that mothers whose index child was a planned and wanted pregnancy were 1.7 times more likely to deliver in a health facility compared to mothers whose index child was unwanted. Poor family planning can lead to unexpected scenarios throughout the continuum of maternal care, which could contribute to unpreparedness. Expectedly, poor preparation for pregnancies and childbirth is associated with the underutilization of health facilities in several rural populations [66, 68, 110, 111]. Spontaneous and fast labour is a common birth scenario that catches women off guard and

can prevent those who are poorly prepared ahead of time from receiving skilled assistance in a health facility [111].

### 2.1.3 Accessibility

Distance to health facilities is a common and significant factor in the access and use of facility-based services. Women are less likely to access and use formal care if the health facilities are deemed to be too far from service users' homes [66, 67, 74, 77, 81, 82, 85, 88, 91, 96, 100, 108, 111-115]. For example, in Asseffa, Bukola and Ayodele [66], women who live less than 2 km to the closest facility have three times the odds of facility-based childbirth than women who reside more than 4km away from the closest facility. However, in some studies, distance to a health facility has a weak or no effect on the uptake of facility services [92, 116]. Transportation barriers due to lack of, or poor, modes of transportation are major barriers to reaching facilities and thereby inhibit women from receiving a range of facility-based services [75, 87, 93, 101, 104, 107, 114, 117, 118, 120]. Bicycles, animals, and motorbikes are commonly used, especially in the more remote and pastoral areas. Poor road infrastructure and other topographical barriers also prevent women from accessing health facilities, with some alternatively turning to traditional sources of care near their residence [81, 115, 117, 121]. In Mrisho et al. [122], women make late ANC visits due to the number of visits required and the possibility of encountering wild animals on the path to the facility. A study in rural Mozambique found an association between seasonality and the probability of a homebirth [123]. Childbirth during the rainy and high agricultural season is positively linked with a homebirth.

Women enrolled and with possession of health insurance are more likely to make four clinical ANC visits [84] and to deliver in a health facility [76, 98, 124]. These findings suggest that financial and affordability barriers, such as high out-of-pocket costs of services, to formal care uptake, can be mitigated and overcome through insurance schemes. Financial accessibility, a key determinant of healthcare utilization across rural Africa, is predominantly related to the costs of transportation to the health facility and cost of services and supplies in the health facility. High costs and the corresponding inability to afford facility-based care are major deterrents to the uptake of facility-based services, including for timely ANC [105, 122] and facility-based delivery and obstetric emergencies [81, 94, 95, 101, 104, 111, 118, 125]. Traditional maternal care services are therefore sought and used by rural women across Africa because they are more affordable than formal care. TBAs also offer some women convenient repayment timelines, such as over a long period, or types of payment, such as manual labour [101].

### 2.1.4 Sociocultural factors

Throughout the continent, women underutilize facility-based maternal care due to cultural and religious beliefs. In maternal health, social norms, culture and religion can shape beliefs and values related to maternity and uptake of health services. Cultural beliefs and related norms, customs, and traditions often lead to the use of traditional care involving traditional attendants and traditional maternity centres or other traditional settings, essentially as an alternative to facility-based care [70, 104, 113]. Religion is also a determinant for healthcare utilization in some communities, with Muslim women most identified as the least likely to receive facility-based care [20, 75, 80, 89, 126]. However, in a study by Okonofua et al. [88], the odds of using a health facility delivery are far higher among Muslim women than Catholic women. In rural Sierra Leone, individuals who believe that God is responsible for childbirth complications and maternal death are less likely to seek skilled assistance, even during a complicated labour and delivery [127]. These individuals believe that women with such a fate are marked for death by God and that their death could not be prevented, regardless of the uptake of formal maternal care during childbirth. It would be futile. In some communities, religion had an insignificant association with healthcare utilization [66].

Women often do not possess independent or complete control over their own reproductive and sexual health decisions in rural Africa [106]. The largely entwined dimensions of autonomy that can influence healthcare utilization include the household status, social independence, financial independence, and decision-making power of women regarding their own health [128]. Existing cultural beliefs, social norms, gendered identities, intra-familial hierarchies, and community-wide hierarchies can also impede healthcare-seeking behaviours [129]. Partners, elderly relatives and other community members, such as community heads, and health professionals, are among the common actors that can have a significant influence on a woman's decision for a type of maternal care. Women who lack decision making power on their own health decisions are less likely to utilize maternal healthcare services than women who participate in or control their decisions [75, 77, 86, 87, 91, 93, 95, 104, 111, 125, 130]. This is mainly due to the traditional hierarchies in some rural communities and socioeconomic dependence on partners or relatives. Partner acceptability can influence health-seeking behaviours, with refusal often deterring women from receiving pregnancy and childbirth services [74, 87, 131]. Women in households with male household heads are less likely to use various facility-based maternal services than women living in households with female household heads in rural Ethiopia [69] and Tanzania [70]. In Chirdan et al. [86], male decision-makers often viewed pregnancy and delivery as a normal event with minimal risk, which drove them to believe that facility-based care is unnecessary. In many rural communities, elders traditionally possess powerful social positions of authority, command respect, and provide guidance and advocacy for specific maternal health decisions. Elders, such as grandmothers, often serve as gatekeepers for decisions regarding the type of maternal care sought and the timing of care [129, 130, 132, 133]. The beliefs,

preferences and views of elders can thereby deter or facilitate maternal healthcare-seeking behaviour and utilization. For example, elders who believe in the efficacy of traditional maternal care, perhaps due to their own experiences, may deem facility-based care as unnecessary and potentially harmful [129]. Women whose childbirth decisions are most influenced by health professionals are more likely to have a facility delivery than women who were most influenced by non-health professionals [98]. In these communities, the inclination to use facility-based care predicates formal care use. In contradiction to findings of a positive association between greater autonomy and formal care utilization, a study in rural Nigeria found that women who possess less autonomy are more likely to use a health facility for delivery care than women with more autonomy [88].

A variety of sociocultural factors motivate women to use traditional sources of care as alternatives over formal sources of care [105, 110]. For example, in rural Ghana, reasons for late ANC uptake include a customary pregnancy announcement or cleansing rite that must be carried out prior to ANC attendance at a clinic [105]. TBAs and other traditional caregivers are often revered locals, as well as the more experienced and trustworthy options, in assisting or guiding maternity [104, 127]. Health professionals, on the contrary, are considered to be relatively inexperienced and more difficult to trust because they are often not revered locals; health professionals tend to be strangers and outsiders. In some communities, concerns or shyness about the gender or religion of health professionals can influence the underutilization of facility-based care for childbirth [91, 134]. Applying multilevel structural equation modelling to Demographic and Health Surveys, Adjiwanou and LeGrand [77] found that women residing in rural areas where gender norms normalize and accept violence against women are less likely to have four clinical ANC visits (Tanzania), to start their clinical ANC in the first trimester (Ghana and Uganda), and to deliver in a health facility under the guidance of a health professional (Ghana, Uganda). A common social barrier to timely clinical ANC stems from the stigmatization and loss in social status that women experience if they receive early clinical services during antepartum, especially a visit in the 1st trimester [101, 105]. In order to hide their pregnancy from the community and avoid stains to their social reputation, women opt to stay home in the early months and initiate clinical ANC visits later in gestation or avoid clinical ANC entirely. Instead, TBAs and spiritualists are preferred and sought to assist with traditional pregnancy care in the prenatal period. In some communities, childbirth assistance from a health professional in a health facility also garners potential loss in social status [133]. Help from a health professional is considered weak and cowardice. Conversely, a traditional home delivery raises a woman's social status and reputation in her community. Additionally, choosing a homebirth over a facility delivery enables women to maintain secrecy, which is highly valued by many women [133].

#### 2.1.5 Quality of Care

Evidence from across rural Africa has identified that the perceived and actual quality of services provided by health facilities are major factors in the use and non-use of maternal healthcare. Though one can measure some aspects of actual quality, such as through wait times, human perceptions about the quality of care tend to be subjective and have a major impact on utilization patterns. The lack and inaccessibility of essential care services, such as the induction of labour and removal of the placenta, is a crucial reason for the poor uptake of formal care [94]. Shortages of staff, drugs, medical equipment, and other clinical supplies in health facilities deter many rural African women from accessing and receiving maternal healthcare services [88, 91, 96, 100, 104, 122, 125, 135]. Lack of basic laboratory services [135], non-availability of delivery wards in health facilities [131], and long waiting hours [136) also reduce the use of adequate formal care. For many community members, including service users, the quality of care in health facilities is compared with the quality of services from traditional providers, such as TBAs. The perceived and actual quality of services provided by both formal and traditional care-takers can thereby influence choices for the care provider.

In rural Uganda, the lack of food and basic infrastructure, as well as poor participation in planning for health services, reduces the accessibility of adequate facility-based care [96]. Other reported barriers to facility-based care include insufficient lighting, water supply shortages, and confined spaces in the facility [105, 125]. In rural Nigeria, it is the operation times of facilities that create discontent, with women identifying closed facilities as a deterrent to facility-based care [88]. Unavailability of services due to service provision barriers can decrease women's likelihood of attending facilities, including for PNC visits [109]. In contrast, the ready availability of TBAs and traditional services motivate women to seek traditional care [96, 113]. In some communities, there is no significant association between the quality of services and the overall functionality of health facilities [112, 123].

Health professionals with poor technical capacity, skills and ability are critical factors in the low uptake of formal maternal care [76, 97, 104]. When health professionals, such as nurses, are perceived to have inadequate skills and competence as care providers, women are less likely to use facility-based care. Women who believe that TBAs possess adequate skills and competence are also far less likely to seek facility-based care [76]. Health professionals who have poor interpersonal abilities and maltreat women or their families are among the major and most common reasons for the underutilization of formal care across rural Africa [91, 94, 100, 104, 105, 108, 118, 120, 130, 131, 133, 137]. Community members regularly accuse such health professionals of rude, arrogant, spiteful and neglectful attitudes and behaviours towards women and their families in the literature. Fear of mistreatment by health professionals is also a deterrent to timely maternal care among service users [101]. Reports of negative health professional attitudes and behaviours from service users are corroborated by nurses and midwives in Sumankuuro, Crockett and Wang [105]. They admitted to

having knowingly and unknowingly mistreated pregnant women in the past. Fear of a cesarean section [105, 122], unfamiliar environments in health facilities [104], rejection of women's preferred squatting or kneeling birthing positions [91, 93], and lack of privacy [70, 104, 131] are other health system factors that influence the underutilization of healthcare services across rural Africa.

#### 2.1.6 Prior use

Women residing in rural communities with a large proportion of women who do not use modern contraception are less likely to receive timely clinical ANC starting in the first trimester in Tanzania, make at least four clinical ANC visits in rural Ghana, and to receive skilled childbirth assistance in Kenya and Uganda [77]. Women who do not receive timely ANC in a clinic or any ANC during their recent pregnancy are subsequently less likely to deliver in a health facility [20, 66, 67, 71, 73, 75, 124]. Receiving skilled ANC is also a significant positive predictor of facility-based PNC services [73, 92]. During clinical ANC visits, health staff assess health status, promote skilled facility-based childbirth, and counsel women about birth preparedness [66, 67, 73, 124]. Information about health status can influence decisions about where to give birth. Women identified as high risk are encouraged to deliver with professional assistance. Conversely, women identified as low risk, and thereby of good foreseeable health status, have less encouragement to deliver with professional assistance. Clinical ANC visits can also help some women get acquainted and familiar with the healthcare system and health facility settings, which can reduce feelings of negative perceptions about facility-based care after the antepartum period [20, 73, 124]. Women who receive skilled childbirth are also more likely to receive formal PNC services [73]. However, there is contradictory evidence that has found that women who deliver in a health facility are less likely to attend PNC services in a facility compared to mothers who deliver outside a facility [78, 92]. Both studies indicate that formal PNC visits were not promoted and advised to women following childbirth in the health facility.

#### 2.1.7 Maternity Experiences

In some cases, precipitate labour, which refers to delivery on the way to a facility or at home, can prevent women who intend to give birth in a health facility from receiving skilled assistance [70, 119, 133]. Accordingly, with attestations that labour and childbirth are unpredictable and spontaneous, some women feel that seeking facility-based childbirth is futile and instead choose to stay home [133, 134]. History of pregnancy and childbirth complications are strong determinants of early ANC and facility-based childbirth. Women who experienced difficult deliveries in previous pregnancies, inside or outside of a facility setting, are more likely to

use a health facility in a subsequent pregnancy [87, 85, 93, 104, 127]. Furthermore, several studies also found that experiencing childbirth complications and undergoing a cesarean delivery greatly increase women's likelihood of using formal PNC [78, 109, 138]. Complications and other negative maternity experiences often bring fears and concerns about the potential dangers involved with maternity and reoccurrence of complications. They also increase awareness of the significance of health professional assistance to adequately screen, treat, and manage obstetric complications for subsequent maternity experiences. In other cases, many women tend to deliver with the same type of attendants if previous experiences were positive and different types of attendants if previous experiences were negative. A study in rural Sierra Leone observed this pattern, where women who delivered safely at home sought to continue to have homebirths [127]. Successful traditional homebirths reinforced their belief and confidence in the safety and norm of traditional childbirth as well as their sense of immunity to complications. The choice to remain or stay with a provider based on previous experiences is also commonly observed between childbirth experiences and the choice of a postnatal care provider. Women who do not experience delivery complications and have an otherwise positive experience with professional attendants tend to opt for facility-based PNC [73, 97]. Previous negative delivery experiences are conversely associated with avoidance of facility-based PNC [108, 109]. In some communities, past health experiences, including prior pregnancy-related complications, are statistically insignificant and thereby of minimal influence on women's utilization of facility-based services [66, 81].

#### 2.1.8 Perceived Significance

The perceived necessity and benefit of facility-based maternal care and other sources of maternal care are strong determinants of healthcare utilization. Those who perceive pregnancy and childbirth as a natural process often feel that facility-based care is unnecessary. Women who made their first ANC visits late in the pregnancy have the lowest proportion of skilled assistance during childbirth, considerably less than women whose first visits were earlier in the pregnancy [75]. However, in Kante [92], the timing for ANC visits is not significantly associated with uptake of formal care. In Nnaji et al. [94], pregnant women who receive risk assessments and reassurance that their pregnancies are normal during ANC attendance often deliver at home. Some women also do not return for postpartum check-ups in clinics if they deem it unnecessary based on their recovery from childbirth [108, 113]. Coupled with the perceived non-severity of various symptoms, there are varying degrees of trust in the ability of TBAs and native maternal care to manage their homebirths. However, rural Africans' preferences shift when complications arise due to the belief that health professionals are the best and most beneficial option for managing severe complications [93, 113, 127, 139]. Moreover, those who believe that health professional assistance in a health facility is vital for the likelihood of positive birth

outcomes and maternal recovery in puerperium tend to seek and utilize facility-based maternal care [76, 87, 113]. Mahiti et al. [113] report that women use formal maternal care due to its advantages, including assessments of fetal development and the health status of the pregnant mother and the fetus, as well as treating or managing diseases. In rural Malawi, women return to the facility for the 1-week PNC visit mainly because they feel they need to get their health status and the health status of their newborn(s) examined [108].

#### 2.1.9 Preferences

Women's values and preferences for the type of maternal care they want to receive can significantly influence their choices and intended decisions to receive facility-based maternal care or traditional maternal care [139, 140]. In this context, one can classify the construct of user preference as a factor that influences maternal healthcare utilization patterns. Concurrently, women's preferences themselves can be influenced and shaped by many of the aforementioned determinants. The determinants could be related to a wide range of factors, such as the accessibility of the source of care, the quality (actual and perceived) of care in a formal or traditional setting, or cultural beliefs. In rural Africa, women who prefer health professionals for maternal care services are far more likely to use facility-based services than women who prefer alternative and more traditional care-takers, including TBAs and spiritualists [85, 105, 110, 140]. It is imperative to note that the preferences of every rural woman are not necessarily fixed. Rather, a woman's preferences for maternal care provision can vary throughout the continuum of maternal care [139]. A woman could prefer and opt to attend a clinic for ANC, but thereafter prefer a traditional homebirth for a variety of reasons, such as the health belief that a facility-based birth is only necessary for when complications arise [139]. Likewise, women who intend to have a homebirth may thereafter choose to have clinical PNC for various reasons, such as the onset of delivery and post-delivery complications. In rural Sudan, some women who prefer to attend a clinic for ANC, albeit irregularly and later in gestation, contrastingly prefer to stay home and rely on traditional maternal care for PNC [141]. The major reason is due to a traditional belief that the postpartum period is one that is vulnerable to witchcraft. Traditional customs can purportedly prevent or combat witchcraft. Traditional care is thereby required to protect against any bewitchment. For some women, the preferences of their partner or certain family members, such as a mother in law, influence and shape their own reported preferences [105].

### 2.2 Determinants of Maternal Healthcare Utilization and Underutilization in Nigeria

The 2013 Nigeria Demographic and Health Survey identified several predictors for accessing and using healthcare, including reproductive care services. These predictors include the lack of money to go to a facility and receive treatment, the proximity of a health facility, not wanting to go alone, the attitude of health workers, and getting permission to go to a facility [53]. The scholarly literature attributes low utilization patterns and high maternal mortality figures to multiple determinants across rural Nigeria. The determinants are related to a wide range of factors, including socio-demographic, socioeconomic, and sociocultural factors, as well as services availability, accessibility, and quality. Many rural Nigerian women face barriers to the use of evidence-based maternal care that are related to such factors.

In terms of past and present Nigerian governments, lack of political commitment, lack of budgetary allocation for primary healthcare from governments, fraudulent misuse of allocated funds, and poor implementation of programs from stakeholders negatively affect the availability, accessibility and quality of facility-based services [142]. Ojor [143] analyzed the progressivity of government spending on primary healthcare in rural Edo State and found that spending on antenatal and postnatal healthcare is non-progressive and non-pro-poor. A systematic review of maternal health interventions in Nigeria links high maternal mortality rates to the weak implementation of policies and interventions, which are poorly coordinated at the intervention and evaluation phase [144]. Throughout Nigeria, there are approximately 30 000 PHCs that cover all health wards and most rural and other remote communities [57]. Nevertheless, Nigeria's Minister of Health (Dr. Isaac Adewole) stated that only 20% of PHCs are functional based on results from the 2016 National Health Facility Survey [145]. This is further exacerbated by the fact that PHCs are more concentrated in urban communities than in rural areas, even though nearly half of the population reside in rural settings [57, 142, 146]. In addition, fewer secondary and tertiary care facilities are also predominantly placed in urban communities [57]. Such urban-rural disparities in the healthcare system are significantly limiting rural women's access to health professionals [146, 147]. This is concerning because PHCs are supposed to be the most accessible and guaranteed source of evidence-based maternal care for women residing in rural and other remote communities [146, 148, 149].

In rural areas where health facilities are available, they tend to be sparsely situated and thereby physically inaccessible for many members of rural communities [57, 142]. Health professionals are also poorly distributed in favour of secondary and tertiary level healthcare facilities in urban areas over primary healthcare facilities in rural areas across Nigeria [53, 57, 142, 150]. Retaining health professionals in the existing rural health facilities has, in of itself, proven to be a major challenge. A notable example is from the failures of the Midwives Service Scheme, which was established in 2009 and recruited approximately 2500 midwives to poorly staffed PHCs across the country [151]. A study that assessed the job satisfaction and retention of these midwives in rural Nigeria found retention to be a significant challenge because of delayed and irregular payments, poor working

conditions, poor housing accommodation, short-term contracts, and lack of career structure [152]. Moreover, people who reside in rural Nigeria have three times less access to doctors and two times less access to nurses and midwives compared to their urban counterparts [153]. The poor accessibility caused by poor distribution and understaffing is compounded by poor facility infrastructure [146, 154], poor road networks [155], lack of equipment and supplies [53, 142], and poor referral systems that inadequately link PHCs to hospitals [142, 156].

In the health facility setting, the absence of maternal health services, poor technical quality of care, poor interpersonal quality of care, and poor regulation of maternal health services can also prevent women from receiving adequate care for various maternal health services. For example, poor interpersonal communication prompted by negative staff behaviours and attitudes is a common reason for the underutilization of facility-based maternal health services in several rural communities [57, 100, 137, 154]. Other factors that influence the use and predict poor maternal outcomes include sociocultural factors and personal health beliefs. Social and cultural norms, customs, and traditional practises, such as the need for permission from the husband or elders, can be restraining forces to the uptake of formal maternal care in some rural communities [88, 135, 157, 158]. A traditional health belief that formal maternal care services are unnecessary or of lower quality than traditional maternal care is known to encourage rural Nigerian women to opt for traditional maternal care services [158].

Amongst the mentioned factors, some have stronger deterring impacts on various individuals and communities than others. It is important to note that factors can influence one another and do not necessarily affect individuals alone. Many factors are largely intertwined, comprising of complex interactions that collectively reduce the uptake of formal maternal care and increase the uptake of traditional maternal care. For example, a demographic factor such as education can be associated with other demographic factors and sociocultural factors, as well as personal beliefs about maternal health. A lower educational level is strongly associated with decreased uptake of maternal healthcare services across rural Nigeria [86, 135, 137, 159]. Educated women are more likely to be employed, to have an income that makes healthcare use affordable, and to have the autonomy to make self-reproductive decisions, each of which tend to be positively associated with increased uptake of formal care [81, 160-162]. Educated women are also more likely to have better maternal health knowledge and understanding of the significance of skilled assistance throughout the continuum [163].

### 2.3 Literature Gaps Addressed in Thesis

The diversity of the evidence between and within rural populations reveals the variations in perceptions, choices and decisions regarding the use of formal and traditional maternal care. With the influence of

preferences on utilization patterns, it is imperative to investigate and address women's preferences in order to improve the utilization of facility-based maternal services [164]. Although existing studies have documented the influence of preferred choices on the use and non-use of formal maternal care, none have systematically synthesized the evidence. Policymakers and service providers need to consider what their target rural populations value and desire while offering choices that enable individuals to access formal care services that best meet their preferences and needs. This can increase the acceptability and appeal of formal maternal care. Therefore, there is a need to explore and synthesize the evidence on the type of maternal care that women prefer across rural Africa throughout the continuum of maternal care. There is also a need to consider the factors that may influence preferences and uptake of maternal healthcare in target populations. The research reported in chapter 3 (paper 1) has addressed these gaps.

Overall, there have been a limited amount of studies that assess factors in the underutilization of maternal care in rural Nigeria. Given the disparities between communities, households, and even individuals of a country, research that aims to inform the design of targeted interventions for improved maternal care uptake must reduce contextual uncertainties. Community-based efforts to improve utilization of maternal healthcare services and reduce maternal mortality have often been made without a clear comprehension of the reasons for existing underutilization patterns in rural communities [13, 142, 162]. This was exemplified by the contextually ineffective conditional cash transfer scheme for maternal health services. The scheme was not based on a formative assessment of the priority needs of different populations, nor did it include control communities for comparison in the intervention implementation phase. Additionally, the scheme failed to consider other factors to improve health facility utilization, such as the improvement of infrastructure and the staffing of understaffed facilities. The outcome was a weak intervention which was of minimal use for policy transformation. Therefore, formative research is required to uncover specific local perceptions, realities, and the factors that influence the underutilization of maternal healthcare services throughout rural Nigeria. Community engagement in the design and implementation of interventions is also required. The research reported in chapter 4 (paper 2) has addressed these gaps.

## CHAPTER 3: PAPER 1

# Preferences for formal and traditional sources of maternal care among women in rural Africa: A systematic review

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## 3.1 Abstract

**Background:** The underutilization of formal, evidence-based maternal health services continues to contribute to poor maternal outcomes among women living in rural Africa. Women's choice of the type of maternal care they receive strongly influences their utilization of maternal health services. Therefore, there is a need to understand rural women's preferred choices to help set priorities for initiatives attempting to make formal maternal care more responsive to women's needs. This review aimed to explore and synthesize women's preferences for sources of maternal care and the factors that contribute to these preferences.

**Methods:** A systematic literature search was conducted using the Ovid Medline, Embase, CINAHL, and Global Health databases. Forty studies that elicited women's preferences for maternal care using qualitative methods were included in the review. A narrative synthesis was conducted to collate study findings and to report on patterns identified across findings.

**Results:** During the antepartum period, most women preferred formal antenatal care in a clinical setting or a combination of both traditional and formal maternal care. During the intrapartum period, preferences varied across communities, with some studies reporting preferences for traditional childbirth with traditional care-takers, and others reporting preferences for formal facility-based births with health professionals. During the postpartum period, the majority of relevant studies reported a preference for traditional postnatal services involving traditional rituals and customs. The factors that influenced the reported preferences were related to the perceived need for formal or traditional care providers, accessibility to maternal care, and cultural and religious norms.

**Conclusion:** Review findings identified a variety of preferences for sources of maternal care from antepartum to postpartum. Future interventions aiming to improve access and utilization of evidence-based maternal healthcare services across rural Africa should first identify major challenges and priority needs of target populations and communities through formative research. Evidence-based services that meet rural women's specific needs and expectations will increase the utilization of formal care and ultimately improve maternal outcomes across rural Africa.



**Keywords:** Preferences, Maternal, Antenatal, Childbirth, Postnatal, Rural Africa, Narrative Synthesis

### 3.2 Background

As part of the 2030 Agenda for Sustainable Development, the 17 SDGs have begun to guide global development initiatives [35, 56]. Maternal health status has been one of the major targets of many global development initiatives in the past 30 years [35, 165]. Today, it continues to be a significant deterrent to the improvement and development of women's health and well-being. Maternal healthcare services are critical indicators for monitoring the quality of maternal care and the progress of maternal health outcomes in the developing world, particularly in Africa [35, 56]. The use of traditional maternal care services is a major determinant of poor maternal health outcomes, including maternal mortality [165]. According to the WHO, utilization of formal antenatal, childbirth and postnatal services in health facilities with professional health attendants can reduce poor maternal health outcomes [3]. Despite the positive outcomes associated with evidence-based (formal) maternal care, many women in Africa, especially in sub-Saharan Africa, still seek and utilize traditional maternal care services with traditional attendants or undertake self-care at home [50]. High maternal mortality rates in the continent are strongly correlated with women's choices of traditional sources of maternal health services throughout the continuum of maternal care [50, 165]. The antepartum, intrapartum and postpartum periods in the continuum can all be high-risk periods for maternal mortality [56, 166]. Today, there are considerable disparities in the health-seeking behaviours and utilization rates of formal maternal care during the three periods among women living in Africa, with the lowest rates of utilization belonging to women living in rural areas [6, 7, 167].

Factors involved in maternal healthcare utilization and choices for maternal care providers, in terms of setting and type of attendants, can vary between and within African countries [7, 50, 56, 167]. Such choices can have a significant impact on health-seeking behaviours and utilization patterns of formal and traditional maternal health services. Research evidence indicates that holistic, inclusive, and collaborative women-centred models of care are the best models for the provision of high-quality and valued maternal care [60]. The provision, allure, and uptake of high-quality women-centred care require the consideration of women's views, such as their healthcare preferences. Preferences can influence a patient's adherence to care options and thereby the health outcomes that are experienced, including maternal death [168]. Therefore, insight into women's preferences for maternal health caregivers and care settings is vital for the provision of care that is reflective of, and responsive to, women's desires and values [42, 168].

With the limited systematic evaluation of women's preferences for maternal care, there is a need to identify and comprehensively understand rural women's preferences for maternal care services in rural African populations. Therefore, this systematic review aims to narratively synthesize findings from existing qualitative research in order to explore and identify rural women's preferences for sources of antenatal, childbirth, and

postnatal care. This qualitative evidence synthesis also aims to identify the factors that contribute to rural women's preferences for maternal care during the antepartum, intrapartum and postpartum periods. The review provides comprehensive understandings about what women prefer and need across different populations and contexts in rural Africa. While the impact of women's decision to choose traditional care on maternal outcomes is well documented, identifying the factors that could affect their preferences is crucial for building responsive and reflective healthcare systems and reducing poor maternal outcomes. Therefore, this review helps to identify the major preferences for sources of maternal care and the contributing factors that may shape expressed preferences across different populations and contexts in rural Africa. Identification of these preferences and the factors that may shape them can help to inform policies and interventions seeking to promote and improve the utilization of formal maternal health services across rural Africa.

## 3.3 Methods

### 3.3.1 Eligibility

The types of reports eligible for this study are full primary research reports of studies conducted in an African country and published in a peer-reviewed journal between 2001 and 2019, in English. This range was selected because the development of the MDGs, first set out in 2001, led to a new wave of research addressing maternal health. AWF and SY excluded studies published before 2001 to ensure the examination of recent evidence following the development of MDG 5. Non-English articles were excluded to avoid linguistic bias in translations. In terms of setting, the review did not include studies conducted in urban centers or metropolitan areas. As such, this review included studies set in the countryside, agricultural settlements, pastoral communities, or nomadic communities outside of urban centers. For studies that did not clearly specify whether their research was conducted in a rural setting, the rurality of study communities was determined by inspecting the grey literature, such as government publications, and by emailing the primary authors of the full-text articles being assessed for eligibility.

Qualitative studies that determined the preferences for sources of maternal care and the contributing factors among women living in rural areas were eligible. A qualitative approach best gathers a complete representation of women's preferences, captures nuances missed in quantitative data collection, and provides a comprehensive understanding of the associated factors. AWF and SY included primary studies in which preferences elicited in the findings were either the primary or secondary focus of the research. Studies that were based on secondary data analyses were excluded. The qualitative components of mixed methods studies that explored the preferences of rural women were eligible. Commentaries, discussions, reviews, and incomplete primary research reports, as well as studies that were solely quantitative in design, were excluded.

Studies that only collected the preferences of men, trained attendants, or traditional attendants were excluded, as this review focused on women's preferences. The reviewers did not register a prospective review protocol.

The term 'preference' does not have a clear and consistent definition, which is reflected by its distinct conceptualization across disciplines. In economics, preferences refer to total subjective comparative evaluations, in which the subject with the choices considers all the options and consequences that affect their evaluations [169]. In psychology, preferences can be defined as evaluative judgements in regard to liking or disliking a stimulus, including over other objects or stimuli [170, 171]. In the context of healthcare, there is a convergence in the conceptualization of preferences as the relative desirability of a range of health experiences and care options [168, 172]. As the topic of this review falls into the context of healthcare, preferences are defined as the relative desirability of formal and traditional antenatal, childbirth and postnatal care.

Consideration and respect for patients' preferences is the first principle of Picker's Eight Principles of Patient-Centered Care [173]. In the healthcare context, preferences can be categorized as a construct with various subjective elements. Qualitative research methodologies are a means to explore and analyze patient preferences for treatment options and the reasons for these preferences [174]. However, with the subjective nature of the qualitative research approach and the inherent subjectivity of human perceptions, it is important to recognize that patients' expressed or reported preferences gathered through qualitative research could differ from their actual preferences. As a result, it is essential to note that the maternal care preferences gathered from the included studies can differ from genuine preferences due to an array of factors, such as interviewer or moderator bias, barriers to financial and physical accessibility, or the inclination to express preferences that resonate with the preferences of a spouse or elders.

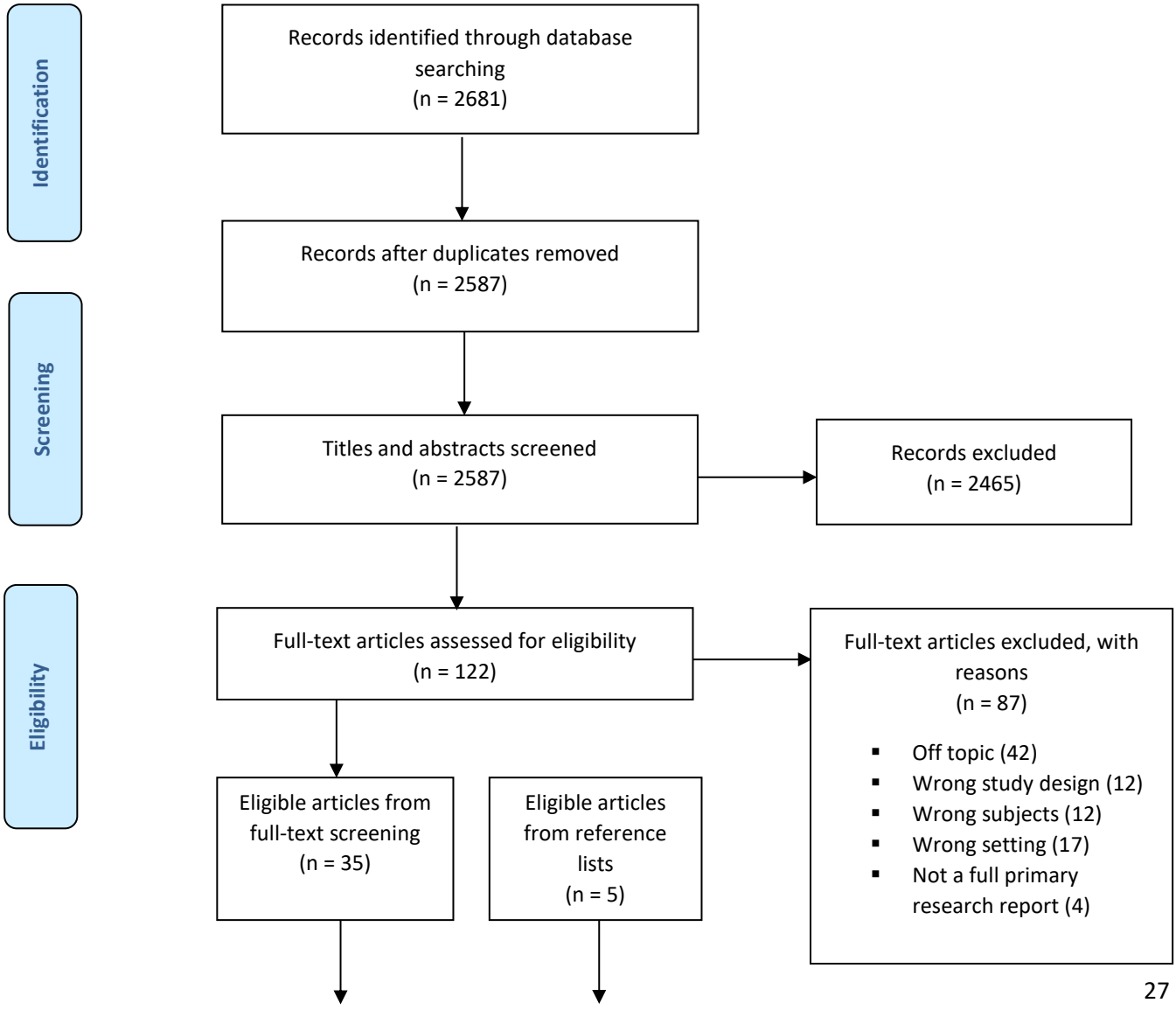
### 3.3.2 Search Strategy

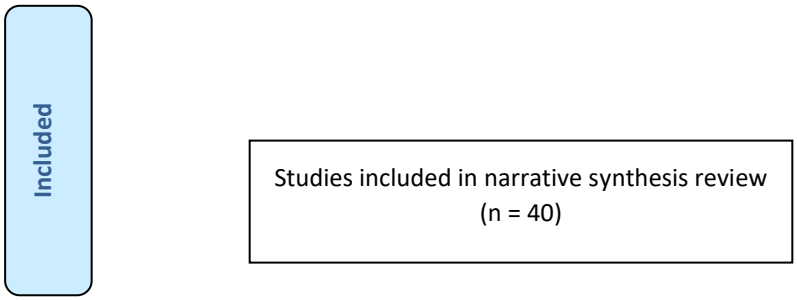
AWF and SY conducted a systematic search of the peer-reviewed, published literature from 2001-2019 in February 2019. With the assistance of a librarian, the primary author searched the online databases Ovid Medline, Embase, CINAHL, and Global Health. The following key search terms were used with various combinations and search strategies (see **Appendix 3.1**): Africa, rural, maternal health services, antenatal, birth, and postnatal. The review included various terms relevant to non-urban settings and each period in the continuum of maternal care in order to broaden the search results. Reference lists of included studies were perused to identify any additional studies that may satisfy the eligibility criteria.

### 3.3.3 Study Selection

The study selection stage, which included the screening of titles and abstracts and retrieval of full texts, was carried out independently by AWF and SY. **Figure 3.1** illustrates the study screening process. The titles and abstracts were screened and then discarded if they did not fit the eligibility criteria. Studies that seemed to include relevant data based on the title and abstract were retrieved, in addition to any unclear citations. AWF and SY assessed the full-text versions of the retrieved studies against the inclusion and exclusion criteria for study eligibility. At each stage, disputes were resolved with discussion. The reference lists of included studies were reviewed, screened and retrieved if eligible for the review, with the process continuing until no new articles were identified.

**Figure 3.1** PRISMA flowchart






### 3.3.4 Data Extraction

AWF and SY adapted and developed data collection forms based on the needs of the review from a standardized data extraction form by the Cochrane library [175]. The forms ensured data extraction was as consistent as possible across all studies, as the extracted data were used to synthesize the findings. The researchers used the forms to extract the following information from each article: (i) study setting (country); (ii) study aim (s); (iii) sample characteristics; iv) data collection methods; v) main preferences for formal and/or traditional maternal care; vi) explanations of why women preferred formal and/or traditional antenatal, childbirth and postnatal maternal care. This review focused on the construct of user preferences across studies exploring women's maternal care preferences through qualitative methods. Only information of participants and reported preferences relevant to the review were extracted. This made it more feasible to review the selected studies and to synthesize findings. Authors of included studies were contacted through email for additional data when required.

### 3.3.5 Data Synthesis

AWF and SY selected the narrative synthesis as the method of synthesis following considerations of time, resources, and appropriateness for addressing the aims of this review. The narrative synthesis adopted in this review was iteratively conducted based on the guidelines for conducting a narrative synthesis by Popay et al. [176]. The method can cope with a large evidence base comprising diverse sources, and effectively address questions that aim to determine or examine an issue. A qualitative narrative synthesis generates a thick text-based description of a phenomenon. The method enables a clear way of integrating and synthesizing primary data findings in a structured manner, helping to generate insights and recommendations directly applicable to policy and intervention formulation [177]. It is useful in describing the differences between findings and identifying commonalities within and across groups in a large number of studies [176]. Other methods of qualitative evidence synthesis, including meta-ethnography, meta-narrative, grounded theory, and critical interpretive synthesis, are more constructivist [177]. They provide a new interpretation of the reviewed

phenomenon beyond original data from included studies and are more complex and conceptual. These methods are useful for informing other researchers and theoreticians but require further interpretation by policymakers and designers of interventions [177].

A narrative synthesis is also ideal for identifying research gaps and paths and providing extensive implications for future research [176]. The specific suggestions by Popay et al. [176] as to the tools and techniques appropriate for a narrative synthesis helped enhance the transparency of the qualitative narrative synthesis process and the dependability of the findings and conclusions in this review. The narrative synthesis includes a synthesis of review findings that collates and reports on the findings of included studies in the form of thematic texts. AWF and SY then used the differences and similarities in reported preferences to combine and analyze evidence in the form of textual summaries and identify relationships within and between studies.

For the synthesis of review findings, texts from the results section of included studies were extracted, including relevant participant quotations, to synthesize the findings on the preferences and corresponding factors. AWF and SY collated the data on preferences and associated factors into three Microsoft excel spreadsheets corresponding to the categories of formal care, traditional care, and mixed care. Extracted data in these spreadsheets were independently read through thoroughly by AWF and SY to inductively code and identify the salient themes (factors) under which women's preferences were expressed [178]. AWF and SY agreed that these overarching themes best described the salient factors: perceived need of maternal services, accessibility to maternal care, and cultural and religious norms, beliefs, and obligations. The thematic analysis provided the best way to organize and summarize findings in a concise manner from the large body of evidence [176]. The analysis worked with and directly reflected the main ideas and conclusions across included studies rather than developing new knowledge through multiple levels of interpretation. To report the data in a structured and organized manner, the findings were reported in textual format under the parent themes [176]. For relationships within studies, differences, similarities and patterns identified within studies by primary authors of included studies were first compiled. Review authors then looked across extracted data to explore and compare relationships across studies [176]. Identified relationships and patterns amongst participant sub-groups, such as by age category, were textually summarized.

### 3.3.6 Quality Assessment of Included Primary Studies

AWF and SY assessed the reporting of included studies using the criteria based on the Critical Appraisal Skills Programme's (CASP) 10 questions for qualitative research [179]. CASP was selected due to its extensive previous use for systematic reviews of qualitative studies. The domains of the CASP checklist helped assess the credibility and rigour of the included studies and their findings [180]. The ten questions were designed as

prompts to guide reviewers in critically reading the reports. Included studies were assigned an overall score of 'high' (9-10), 'moderate' (7.5-9) or 'low' (less than 7.5) overall quality. Studies were not excluded or weighted based on the quality of the reporting assessment. The results of the qualitative appraisal and assessment instead informed data interpretation and ultimately helped determine the trustworthiness of review findings and conclusions.

### 3.3.7 Assessment of Confidence in the Synthesis Findings

Each qualitative review finding was assessed with the GRADE-CERQual (Confidence in the Evidence from Reviews of Qualitative Research) approach. The method has recently become the standard for assessing confidence in findings from qualitative evidence syntheses and has proven helpful for decision-makers and policy designers who use qualitative evidence to inform policies and interventions about various topics, such as healthcare [181]. The CERQual approach assesses the following four concepts: 1) Methodological limitations of included studies; 2) Coherence and fit between data from primary studies and the review findings; 3) Adequacy of data contributing to the review findings; 4) Relevance of the included studies to the context of the review question. AWF and SY used the GRADE-CERQual tool guidelines to assess the confidence in the methodological quality [182], coherence [183], relevance [184] and adequacy [185] of each identified factor (sub-themes).

## 3.4 Results

### 3.4.1 Included Studies

Overall, the search across the four databases yielded 2681 citations. Of these, 94 duplicates were removed, and 2465 records were excluded after screening titles and abstracts (**Figure 3.1**). Of the remaining 122 records, 87 were excluded following a full-text review. Forty articles were included in this review, including five additional references from the reference lists of included studies. As shown in **Table 3.1**, the studies were carried out in 15 different African countries, according to the United Nations' Statistics Division [186]. Fourteen of the studies elicited data on women's preferences for sources of ANC services, 37 of the studies elicited data on preferences for sources of childbirth care services, and 11 of the studies elicited data on preferences for sources of PNC services [96, 104, 119, 120, 128, 130, 133, 136, 139-141, 187-215]. The majority of the studies were conducted in rural communities, while the rest were conducted in predominantly rural communities. The qualitative studies and the qualitative components of the mixed studies were primarily based on the use of data collected using focus group discussions and interviews from participants, as shown in **Appendix 3.2** (expanded version of **Table 3.1**). The review includes a diverse sample of rural women of different ages and

generations that represent a variety of interests and perceptions. The age group of study participants in the included studies ranged from adolescents to elderly mothers. The rural women also varied in marital status, education level, religious affiliation, parity, and health conditions before or at the time of data collection.

**Table 3.1** Description of Included Studies

| Study | Study Setting | Sample Characteristics | Main Preferences |
|---|---|---|---|
| Adinew et al. 2018 | Ethiopia | 68 women who had received clinical ANC service for their most recent childbirth, but no recent facility-based childbirth; 40 women had received some formal education; 45 women were multiparous | Traditional childbirth care at or near home |
| Adinew & Assefa, 2017 | Ethiopia | 88 women who gave birth to at least one of their previous children in the health facility within 5 years of data collection but gave birth to their most recent child (within 12 months of data collection) at home; 72 women had some formal education; all were multiparous | Traditional childbirth care at or near home |
| Ahmed et al. 2018 | Mali | 26 women (18-40 years) who gave birth 3 months preceding data collection were included in the study; all 26 women were married; none had any formal education; *all 26 women were Muslim; 24 women were multiparous | • Traditional childbirth care at or near home<br>• Formal childbirth care in a health facility |
| Allou, 2018 | Ghana | 360 women who had sought the services of traditional birth attendants within 5 years of data collection; 165 women with some formal education; majority were multiparous | Traditional childbirth care at or near home |
| Al-Mujtaba et al. 2016 | Nigeria | 57 pregnant ANC attendees, HIV positive women, and young women of childbearing age; 54 married women; 52 women with some formal education; 39 Christian women and 18 Muslim women; most were multiparous | Formal antenatal and childbirth care in a health facility |
| Bazzano et al. 2008 | Ghana | • 14 older mothers/grandmothers<br>• 45 mothers<br>• 28 case histories from women who had recently given birth | Traditional childbirth care at home |
| Bedford et al. 2012 | Ethiopia | • 30 mothers who had recently delivered (primiparous, multiparous, and grand-multiparous) within 7 months of the study; 14 delivered in a health facility, 14 at home, 1 at a health post, 1 on the roadside<br>• 16 pregnant women (primiparous, multiparous, and grand-multiparous) | • Traditional childbirth care for normal childbirth at or near home<br>• Formal childbirth care in a health facility, especially during complicated childbirth |
| Caulfield et al. 2016 | Kenya | Women who had delivered within 2 years of data collection with a traditional birth attendant, skilled birth attendant, or neither | Traditional childbirth care at or near home |

| | | | |
|---|---|---|---|
| Chea et al. 2018 | Kenya | 30 HIV-infected women (18-49 years); *majority were married (monogamous); *majority had some formal education; majority were Christian; 12 delivered at home; 18 delivered at a health facility | Formal childbirth care in a health facility |
| Cofie et al. 2015 | Ghana | 20 mothers of childbearing age who experienced pregnancy, labor or postnatal complications and mothers whose newborns experienced complications | • Traditional childbirth care at or near home as a first line of care, but facility-based care when complications arise<br>• Formal childbirth and postnatal care in a health facility as a first line of care |
| Dahlberg et al. 2015 | Kenya | • 4 HIV positive mothers and 9 HIV negative mothers of children under 2 years of age; 12 had given birth to their most recent baby in a healthcare facility<br>• Older women (aunts, mothers-in law and grandmothers) | • Traditional childbirth care at home<br>• Formal antenatal and childbirth care in a health facility |
| De Allegri et al. 2015 | Burkina Faso | Women who had recently delivered in a health facility or at home | • Traditional childbirth care at home<br>• Formal childbirth and early postnatal care in a health facility |
| Dodzo & Mhloyi, 2017 | Zimbabwe | 108 women of reproductive age (14-49 years); 86 were married; 97 had some formal education | Traditional childbirth and postnatal care at or near home |
| Engmann et al. 2013 | Ghana | 85 women who were 27 or more weeks pregnant (18-41 years); 75 women were married; 78 women had some formal education; 75 women were Christian and 10 were Muslims | Formal childbirth care in a health facility |
| Ganle, 2015 | Ghana | 94 women (15-45 years) who were pregnant at the time of data collection or who had given birth between January 2011 and May 2012; 64 were married; 37 had some formal education; all 94 women were Muslim | • Traditional antenatal and childbirth care at or near home<br>• Formal antenatal and childbirth care in a health facility |
| Ibrhim et al. 2018 | Ethiopia | • 60 women who had children less than 24 months of age; majority were married; majority of the women had no formal education; all women were Muslim; 47 women gave birth at home with a TBA, 13 at a health facility<br>• 48 grandmothers; majority of the grandmothers were married; majority of the grandmothers were uneducated; all grandmothers were Muslim | Traditional childbirth care at or near home |
| Igboanugo & Martin, 2011 | Nigeria | 8 pregnant women (24-35 years) who recently accessed maternity services; 2 primigravidas and 6 multigravidas | • Traditional antenatal and childbirth care at or near home<br>• Formal antenatal and childbirth care in a health facility |

| | | | |
|---|---|---|---|
| Jacobs et al. 2018 | Zambia | 38 mothers (18-45 years) of children below 12 months old; 36 women were married; about one-third had some formal education; all mothers were multiparous | • Traditional antenatal care in early months and formal antenatal care in the later months.<br>• Formal antenatal care in a health facility |
| Kea et al. 2018 | Ethiopia | 18 women who had given birth in the previous 2 years or were pregnant at the time of data collection; *all women were married; most women were Christian | • Traditional antenatal care in the early months, followed by skilled antenatal care in the later months<br>• Traditional childbirth care at or near home |
| King et al. 2015 | Ethiopia | 33 women (17-49 years); 30 women were married; all women were Muslim; most women were multiparous | • Traditional childbirth care at or near home<br>• Formal childbirth care in a health facility |
| Kumbani et al. 2013 | Malawi | 12 mothers (20-32 years) who delivered outside a health facility within 3 months of the study; all were married; 11 had some formal education; 11 were multiparous | Formal childbirth care in a health facility |
| Kwagala, 2013 | Uganda | • *2 young women (15-24 years); *both were married; *both had some formal education; *both were Christian<br>• *3 middle-aged women (25-35 years); all were married; *all had some formal education; *all were Christian<br>• *3 older women (over 36 years); * all were married; *all had some formal education; *all were Christian | • Traditional childbirth and postnatal care at or near home<br>• Formal childbirth and postnatal care in a health facility |
| Kyomuhendo, 2003 | Uganda | Women over 15 years of age; most were married | Traditional childbirth and postnatal care at or near home |
| Magoma et al. 2010 | Tanzania | 66 women seeking antenatal care, childbirth care and postnatal care at a health unit | •Traditional antenatal, childbirth, and postnatal care at or near home. Preference for traditional childbirth care for normal births<br>• Formal antenatal and childbirth care in a health facility |
| Mason et al. 2015 | Kenya | • 18 adolescents (15-18 years)<br>• 29 women of childbearing age (15-49 years)<br>• 17 recently or currently pregnant women<br>• 9 mothers of child born with an abnormality | • Traditional childbirth care at or near home<br>• Formal childbirth and postnatal care in a health facility |
| Mathole et al. (2004) | Zimbabwe | • 44 women (19-46 years) | • Early traditional antenatal care and later formal antenatal care<br>• Formal antenatal care in a health facility |
| Moyer et al. 2014 | Ghana | • 35 women with newborn infants<br>• 81 grandmothers who had at least one grandchild within the past year of data collection | • Traditional childbirth care at home<br>• Formal childbirth care in a health facility |

| | | | |
|---|---|---|---|
| Myer & Harrison, 2003 | South Africa | • 22 women (17-37 years) seeking antenatal care at a clinic; 14 women were married or in a committed relationship; majority of the women had formal education; 5 primigravidas<br>• 7 women who had syphilis | Formal antenatal and childbirth care in a health facility |
| Ndirima et al. 2018 | Rwanda | 20 women (18-43 years) who had delivered in the district hospital within 10 weeks prior to the start of the study; 10 women were primiparous (3 caesarean sections); 10 women were multiparous (3 caesarean sections) | Formal antenatal and childbirth care in a health facility |
| Okafor et al. 2014 | Nigeria | 25 women (20-42 years) who delivered a baby in the previous 2 years prior to the study; at least 13 women completed some formal education | • Traditional antenatal and childbirth care in any domestic setting. Preference for antenatal care was for a normal pregnancy, with preference for formal antenatal care during an abnormal pregnancy<br>• Formal childbirth and early postnatal care in a health facility |
| Osubor et al. 2006 | Nigeria | • Teenage girls (15-19 years); most were Christian<br>• Women of childbearing age (20-49 years) and of parity of not more than 4 children; most women had some formal education; most women were Christian<br>• Women in post-childbearing period (50 years and above); most women had some formal education; most women were Christian | • Traditional antenatal and childbirth care in a traditional setting<br>• Formal childbirth care in a health facility |
| Pfeiffer & Mwaipopo, 2013 | Tanzania | 100 women who delivered at a clinic or with the support of a TBA within 2 months prior to data collection; 49 women were married; 65 women had some formal education; 39 women were multiparous | • Traditional childbirth care at or near home<br>• Traditional childbirth care in a private and confidential environment<br>• Formal childbirth care in a health facility |
| Riang'a et al. 2018 | Kenya | 188 women (16-45 years); 102 women who had at least 1 visit to an ANC during the current pregnancy; 86 women who had given birth within 1 month of data collection; 160 women were married; all 188 women had some formal education; *all women were Christian; 72 women were primigravidas, 116 were multigravidas | • Traditional antenatal care at or near home.<br>• Traditional antenatal care for normal pregnancies and formal antenatal care for abnormal pregnancies<br>• Traditional antenatal care in early gestation and formal antenatal care in later gestation<br>• Formal antenatal care in a health facility |
| Seljeskog et al. 2006 | Malawi | 6 women of *childbearing age who had delivered recently; *all women were married; *All women had some formal education; 3 gave birth at home and 3 at a health facility | • Traditional childbirth and postnatal care at or near home<br>• Formal childbirth care in a health facility |

| | | | |
|---|---|---|---|
| Serizawa et al. 2014 | Sudan | 6 women (16-40 years) of reproductive age who had given birth within 2-3 years prior to the study; all women were married; none completed any formal education; 2 of the younger women (16-30 years) were primiparous and multiparous; 4 of the older women (30-40 years) were multiparous | • Traditional antenatal, childbirth and postnatal care at or near home<br>• Irregular skilled antenatal care attendance |
| Shiferaw et al. 2013 | Ethiopia | 8 mothers (15-49 years); most women were married; most women were multiparous | • Traditional childbirth and early postnatal care at or near home. Preference for traditional childbirth care especially when childbirth is abnormal<br>• Formal childbirth care in a health facility, especially for a complicated childbirth |
| Sialubanje et al. 2015 | Zambia | 100 women of reproductive age (15-45 years) who had given birth within 1 year prior to the study; 70 women were married; 93 women had some formal education; 50 were multiparous | • Traditional childbirth care at or near home<br>• Formal childbirth care in a health facility |
| Sisay et al. 2014 | Ethiopia | • 63 grandmothers who had given birth to at least 1 child, who in turn had given birth to at least 1 child; none had any formal education; majority of the women were Christian<br>• 74 women who had any child under 5 years of age; all women were married; majority of the women were Christian<br>• 70 younger women (adolescent girls over 15 years); none were married; all women had some formal education; majority of the women were Christian | • Traditional childbirth care at home for normal childbirth<br>• Formal childbirth care in a health facility, especially for a complicated childbirth |
| Thwala et al. 2012 | Swaziland | 15 women (over 18 years) who had at least 1 child and whose last-born child was 2 years old or less; all women were married; most women had some formal education; *14 women were affiliated with tribal religions and 1 with Catholicism; all were multiparous | • Traditional childbirth care at or near home<br>• Formal childbirth care in a health facility |
| Wilunda et al. 2014 | Uganda | 459 women who had delivered in the past 5 years | Traditional childbirth care at or near home |

* Additional data retrieved from authors of included studies.

### 3.4.2 Quality Appraisal

The checklist covers the appropriateness of qualitative research, appropriateness of the research design, ethical considerations and standard conceptions for assessing rigour. The quality assessment helped gather the relative strengths and weaknesses of the body of evidence. As shown **in Tables 3.2-3.5** below, 18 studies were of high-quality, 14 studies were of moderate quality, and 8 studies were of low-quality. The quality score of each study corresponded with their degree of rigour, with the high-quality studies generating the most

trustworthy findings and being the most rigorous. High-quality studies and most moderate studies were dependable, clearly demonstrating that with the same data collection methods, the study could be replicated and yield similar results. Most high-quality and moderate studies corroborated their findings, reflecting the truthfulness of the reported preferences and reasons for the preferences of maternal care providers. Studies with higher scores had the most credible results and demonstrated the value and potential impact of research findings locally or internationally. The credibility of the results and the authenticity of research findings to a specific context were relatively low in the lower quality studies. With an average score of 8.3 between the included studies, the overall quality of the included studies was generally moderate; therefore, the evidence used to draw conclusions about preferences in the synthesis is moderately robust and useful to certain extents for the review's implications and recommendations. However, due to the diverse nature of participants, various locations of recruitment and data collection, and various factors that may influence review findings, the products of the synthesis should be considered with caution as they are not feasibly transferable to just any rural African populations. **Appendix 3.3** displays the detailed score for items that constitute the 10 CASP checklist questions.

**Table 3.2** Summary of Quality Scores Based on 10 CASP Checklist Questions (AD-CO)

| **Qualitative studies** | **Adinew 2018** | **Adinew 2017** | **Ahmed et al** | **Allou** | **Al-Mujtaba et al** | **Bazzano et al** | **Bedford et al** | **Caulfield et al** | **Chea et al** | **Cofie et al** |
|---|---|---|---|---|---|---|---|---|---|---|
| Was there a clear statement of research aims? | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Is a qualitative methodology appropriate? | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Was the research design appropriate to address the aims of the research? | 0.5 | 1 | 1 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 1 | 1 |
| Was the recruitment strategy appropriate to the aims of the research? | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0.5 | 1 | 1 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Was the data collected in a way that addressed the research issue? | 1 | 1 | 1 | 0 | 0.5 | 0 | 1 | 0.5 | 1 | 0.5 |
| Has the relationship between researcher and participants been adequately considered? | 1 | 1 | 1 | 0 | 0.5 | 0.5 | 1 | 1 | 0.5 | 0.5 |
| Have ethical issues been taken into consideration? | 1 | 1 | 1 | 0.5 | 1 | 0.5 | 1 | 1 | 1 | 1 |
| Was the data analysis sufficiently rigorous? | 0.5 | 0.5 | 1 | 0 | 0.5 | 0 | 1 | 1 | 1 | 1 |
| Is there a clear statement of findings? | 0.5 | 0.5 | 1 | 0.5 | 1 | 0.5 | 1 | 1 | 1 | 1 |
| How valuable is the research? | 1 | 0.5 | 1 | 0.5 | 1 | 0 | 1 | 1 | 0.5 | 1 |
| **Overall Quality** | **8.5** | **8.5** | **10** | **5** | **8** | **4** | **9.5** | **8.5** | **9** | **9** |

**Table 3.3** Summary of Quality Scores Based on 10 CASP Checklist Questions (DA-KI)

| **Qualitative studies** | **Dahlberg et al** | **De Allegri et al** | **Dodzo & Mhloyi** | **Engmann et al** | **Ganle** | **Ibrhim** | **Igboanugo & Martin** | **Jacobs et al** | **Kea et al** | **King et al** |
|---|---|---|---|---|---|---|---|---|---|---|
| Was there a clear statement of research aims? | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Is a qualitative methodology appropriate? | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Was the research design appropriate to address the aims | 1 | 1 | 0.5 | 1 | 1 | 0.5 | 1 | 0.5 | 1 | 1 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| of the research? | | | | | | | | | | |
| Was the recruitment strategy appropriate to the aims of the research? | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Was the data collected in a way that addressed the research issue? | 1 | 1 | 1 | 1 | 1 | 0.5 | 1 | 1 | 1 | 0.5 |
| Has the relationship between researcher and participants been adequately considered? | 0.5 | 1 | 1 | 0.5 | 1 | 0.5 | 1 | 1 | 0.5 | 1 |
| Have ethical issues been taken into consideration? | 1 | 0.5 | 1 | 1 | 1 | 1 | 1 | 0.5 | 1 | 1 |
| Was the data analysis sufficiently rigorous? | 1 | 1 | 0.5 | 1 | 1 | 0.5 | 1 | 1 | 1 | 0.5 |
| Is there a clear statement of findings? | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| How valuable is the research? | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Overall Quality** | **9.5** | **9.5** | **9** | **8.5** | **10** | **8** | **10** | **9** | **9.5** | **8** |

**Table 3.4** Summary of Quality Scores Based on 10 CASP Checklist Questions (KU-OK)

| **Qualitative studies** | **Kumbani et al** | **Kwagala** | **Kyomuhendo** | **Magoma et al** | **Mason et al** | **Mathole** | **Moyer et al** | **Myer & Harrison** | **Ndirima et al** | **Okafor et al** |
|---|---|---|---|---|---|---|---|---|---|---|
| Was there a clear statement of research aims? | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Is a qualitative methodology appropriate? | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Was the research design appropriate to address the aims of the research? | 0.5 | 0.5 | 0.5 | 0.5 | 1 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Was the recruitment strategy appropriate to the aims of the research? | 0.5 | 0.5 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 |
| Was the data collected in a way that addressed the research issue? | 1 | 1 | 0.5 | 1 | 1 | 1 | 1 | 0.5 | 0.5 | 0.5 |
| Has the relationship between researcher and participants been adequately considered? | 0.5 | 0.5 | 0.5 | 1 | 1 | 1 | 0.5 | 0.5 | 0.5 | 0.5 |
| Have ethical issues been taken into consideration? | 1 | 1 | 0 | 0.5 | 1 | 1 | 1 | 0.5 | 1 | 1 |
| Was the data analysis sufficiently rigorous? | 1 | 0.5 | 0 | 1 | 1 | 1 | 0.5 | 0.5 | 1 | 0.5 |
| Is there a clear statement of findings? | 0.5 | 0.5 | 0.5 | 1 | 1 | 1 | 1 | 0.5 | 1 | 1 |
| How valuable is the research? | 1 | 0.5 | 0.5 | 1 | 1 | 1 | 1 | 1 | 1 | 0.5 |
| **Overall Quality** | **8** | **7** | **4.5** | **9** | **10** | **9.5** | **8.5** | **5.5** | **8.5** | **7.5** |

**Table 3.5** Summary of Quality Scores Based on 10 CASP Checklist Questions (OS-WI)

| Qualitative studies | Osubor et al | Pfeiffer & Mwaipopo | Riang'a | Seljeskog et al | Serizawa et al | Shiferaw et al | Siaulubanje et al | Sisay et al | Thwala et al | Wilunda et al |
|---|---|---|---|---|---|---|---|---|---|---|
| Was there a clear statement of research aims? | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Is a qualitative methodology appropriate? | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Was the research design appropriate to address the aims of the research? | 0.5 | 0.5 | 0.5 | 0.5 | 1 | 0.5 | 0.5 | 0.5 | 1 | 0.5 |
| Was the recruitment strategy appropriate to the aims of the research? | 0 | 1 | 1 | 0.5 | 0.5 | 0 | 1 | 1 | 0.5 | 1 |
| Was the data collected in a way that addressed the research issue? | 1 | 1 | 1 | 0.5 | 1 | 1 | 1 | 0.5 | 1 | 1 |
| Has the relationship between researcher and participants been adequately considered? | 0.5 | 0.5 | 1 | 0.5 | 1 | 0.5 | 0.5 | 0.5 | 0.5 | 1 |
| Have ethical issues been taken into consideration? | 0.5 | 1 | 1 | 1 | 1 | 0.5 | 1 | 1 | 1 | 1 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Was the data analysis sufficiently rigorous? | 1 | 0.5 | 1 | 0.5 | 1 | 0.5 | 1 | 1 | 1 | 1 |
| Is there a clear statement of findings? | 1 | 1 | 1 | 0.5 | 1 | 0.5 | 1 | 1 | 1 | 1 |
| How valuable is the research? | 0.5 | 0.5 | 1 | 1 | 1 | 1 | 1 | 0.5 | 1 | 1 |
| **Overall Quality** | **7** | **8** | **9.5** | **7** | **9.5** | **6.5** | **9** | **8** | **9** | **9.5** |

### 3.4.3 Evidence Synthesis of Findings

The data reflected preferences for sources of maternal care during the antepartum, intrapartum and postpartum periods, along with corresponding factors that contributed to the expressed preferences. The sources of maternal care services generally fell under two categories. The first category, formal maternal care, takes place in a healthcare facility (hospitals, health centres, or clinics) with the assistance of health care professionals (HCPs), such as doctors, nurses and midwives. The second category, traditional maternal care, takes place at or near home with the assistance of traditional community-based actors (CBAs). These CBAs include the following: traditional birth attendants (TBAs), spiritual attendants, mothers-in-law and relatives, neighbours, or elderly women in the community. The three major themes that best describe the factors contributing to women's preferences were the following: 1) Perceived need of maternal services from a provider; 2) Accessibility of sources of maternal care; 3) Cultural and religious norms, beliefs, and obligations pertaining to women's care.

#### 3.4.3.1 Factors Contributing to Preferences for Formal Maternal Care

*Perceived need of formal maternal services*: Facility-based maternal services, particularly during antepartum and postpartum, were preferred over traditional care services because health facilities had the necessary equipment and supplies required for the provision of maternal care. The availability of screening equipment favourably confirmed that women were indeed pregnant and carrying a baby. The availability of antenatal tests during checkups in health facilities appealed to the majority of rural women in included studies because it enabled assessments of pregnancy progress, such as fetal development or the presence of adverse health conditions. Assessments of pregnancy progress determined the health status of the mother and fetus and

helped ensure their health and well-being. Weight assessments favourably enabled women to compare their weight with that of other pregnant women, which was a method of self-assurance that their pregnancy was normal. Moreover, the availability of vaccinations and the ability to manage detected pregnancy complications further appealed to most women, who often preferred formal ANC over traditional ANC providers. Women across rural Africa further wanted facility-based ANC and childbirth care due to confidence in the training and technical ability of HCPs to minimize or prevent health risks and ensure positive maternal and neonatal outcomes. Relative to HCPs, TBAs and other CBAs were said to be incompetent, unprofessional, and to lack updated skills for managing pregnancy and childbirth complications. The lesser educated TBAs reportedly resorted to non-medically proven methods of care, leading to the provision of inadequate maternal care. HCPs were also favoured because TBAs lacked referral capacities and were less prompt, thereby increasing the likelihood of poor maternal outcomes. In some communities, women explicitly favoured male HCPs because they were believed to be better trained, more knowledgeable, and emotionally stronger than female HCPs.

Attendant attitudes and behaviour were major factors that influenced preferences for facility-based providers of ANC and childbirth care. Positive HCP attitudes and behaviours were key attractants for women who wanted to receive maternal care in a clinic, hospital, or health center during antepartum and intrapartum. Women across rural Africa preferred to receive antenatal and childbirth services from facilities that employed caring, considerate and sympathetic HCPs, further expressing that health facilities with cruel, insensitive and degrading attendants increased the odds for negative maternal experiences and outcomes. HCPs with great interpersonal abilities and communication skills were believed to increase the likelihood of positive pregnancy and birth outcomes. In some communities, women mainly preferred male HCPs to attend their antenatal check-ups and childbirth because they were kinder and more personable than female HCPs. For others, HCPs from private health facilities were particularly perceived to have more positive attitudes and behaviours, forming better overall interpersonal relationships with their patients. Private health facilities were also favoured over public (government) health facilities, such as primary health centers, for better reflecting patient desires and opinions during maternal care provision. Some women praised private health facilities for better addressing service users' health concerns. Private health facilities were further favoured as sources of ANC and childbirth care over public health facilities because they had shorter queues and faster maternal care services. Considering the physical and emotional tolls of labour, the welcoming nature of reception staff to labouring women was an appealing factor for women who preferred a facility delivery.

Fear was another factor that contributed to women's preferences for formal ANC and childbirth care. With reference to their own or others' negative previous experiences with childbirth complications, such as excessive bleeding, many women preferred facility-based childbirths. Women with positive previous childbirth

experiences, such as successful and uncomplicated deliveries in health facilities, also preferred to seek the same services again. Others who had poor previous birth experiences with a CBA alternatively preferred institutional delivery care. As an influential factor for many labouring women, fears were often derived from community experiences largely based on one's own or others' experiences. These fears included fears of dying while giving birth, fears of infection during pregnancy and childbirth, fears of infecting their child, fears of infecting an inexperienced and untrained TBA, and fears of experiencing complications in a domestic setting under the supervision of untrained CBAs.

Comfort was another factor that explains women's preferences, especially amongst those who highly valued privacy. Facility-based services that provided privacy were preferred by many women who were concerned about giving birth in open settings and having private parts exposed to strangers. Private health facilities were desirably said to provide women with more control over choices regarding their care than in public facilities. With concerns of privacy heightened during exposure to male HCPs, relatives, or neighbours, such control was very important to women. Female HCPs were particularly favoured by some women for better protecting privacy, integrity, and secrecy, as well as being able to build a close rapport with labouring women. Some women preferred facility-based care because they were especially comfortable and confident when receiving evidence-based care from experienced HCPs over inexperienced HCPs and interns.

During antepartum, facility-based antenatal visits were preferred because of the provision of quality dietary advice, health education and information about physical adaptations. Education and health promotion were considered essential to pregnant women for successful maternal and neonatal outcomes. Facility-based ANC was also preferred because mandatory clinic attendance cards were required to facilitate facility-based childbirth; these cards were only provided as incentives for making a certain number of facility-based ANC visits. During intrapartum, some women credited their preferences for facility-based childbirth to the promotion, encouragement of, and sensitization to, the significance of skilled childbirth during facility-based ANC visits. Moreover, knowledge and awareness of their health status during pregnancy also helped make facility-based deliveries the favoured choice. While health facility attendants educated and advised women about various maternal health and child health matters, traditional care-takers were often unable to educate and give evidence-based advice to women.

*Accessibility to formal maternal care:* Facility-based care, particularly care provided in government hospitals or other public health facilities, was preferred by some women for being cheaper than other formal maternity care settings in or near their communities. In contrast, others wanted maternal care from private facilities because it was cheaper and more affordable than public facilities in or near their communities. In terms of

social accessibility, women preferred formal ANC because leaving the household enabled them to attain empowerment, greater freedom, and control over their pregnancies. Facility-based childbirth care from HCPs favourably helped women avoid the social pressure of delivering in front of relatives who might judge the progression of, and their behaviour during, labour and delivery. Facility deliveries were also favoured because they helped women with adverse health conditions, such as HIV, avoid the stigma and discrimination that would have accompanied their health status in a traditional childbirth setting.

*Cultural and religious norms, beliefs, and obligations:* In some communities, a modern shift in the traditional childbirth norms, owing to increased awareness of the high mortality rates and of the dangers associated with pregnancy and childbirth, shaped some women's preferences for facility-based childbirth care. Health facilities that respected cultural beliefs and provided culturally sensitive maternal care were favoured in several rural populations. Some women preferred to deliver in a formal health setting with mature, female health attendants from their own culture or at least a facility attendant that was familiar with their culture and willing to follow-up patients in the community.

Some women preferred health facilities that respected their religious beliefs and provided religiously sensitive maternal care. Adherence to religious interpretations and obligations was especially important for service users during ANC checkups and childbirth. Adherence to religion played a key role in the conditions and circumstances that women desired in health facilities. Muslim women, in particular, preferred facility-based maternal services from HCPs that respect Muslim women's maternity care needs and enable certain religious practices. Female, Muslim HCPs were deemed the most compatible and thereby the most favoured care-takers since they shared the same faith, thus enabling the women to protect the sanctity of their bodies and to follow other religious obligations.

#### 3.4.3.2 Factors Contributing to Preferences for Traditional Maternal Care

*Perceived need of formal maternal services:* During antepartum and intrapartum, some women voiced that they preferred traditional maternal care due to the greater quality of care from traditional sources. Provider skills were considered by many women when reporting the reasons for their traditional care preferences. TBAs and select other CBAs were the preferred ANC and childbirth care attendants, at or near home, because they were believed to possess crucial skills for the following: providing constant psychological support and advice; assessing the stage and progress of labour; detecting danger signs; identifying the position of the fetus and correcting the position, if necessary; managing obstetric complications with native interventions; providing

comprehensive and consistent assistance during and after childbirth; referring those with labour complications to the health facility. In addition, TBAs and select other CBAs were preferred because they were perceived to be the only ones competent enough to prevent, cure, or manage medical or transcendent complications that could affect the fetus or mother. TBAs were said to best meet women's compassionate care service expectations throughout rural Africa when it came to the following: massaging women during ANC checkups; hand-holding while repositioning the fetus; massaging the labouring woman's abdomen to facilitate smooth delivery; holding the labouring mother during delivery; providing constant support and counsel during and after childbirth. Perceptions of over-tasked HCPs or lack of available HCPs in local health facilities further contributed to preferences for traditional ANC, while shortages and unavailability of equipment, supplies, and drugs required for adequate maternal care in health facilities contributed to preferences for traditional births. Labouring women were often required to purchase their own medicine and supplies from pharmacies. Women also preferred traditional births due to long waiting times and lack of immediate childbirth care in health facilities. Attendant attitudes and behaviours were one of the major contributors to women's reported preferences across rural Africa. Rude, abusive, insensitive, or deliberately negligent HCPs drove women towards traditional ANC and traditional births at or near home, under the guidance of traditional care-takers or self-care. Many women preferred TBAs or other CBAs to attend their pregnancy check-ups and supervise their childbirth because they were more sensitive, caring, hospitable, affectionate and carried a more positive presence than HCPs. CBAs were said to first attend the mother before discussions about payment, making the women feel that CBAs cared more about women's welfare than payment.

Trust in traditional care and care-takers contributed to preferences for traditional maternal services. Greater trust in the assistance of TBAs and other CBAs, as well as the promotion of traditional homebirths by trusted and revered community members, were particular reasons why childbirth at or near home was desired. In contrast, HCPs were seen as strangers. Their professional integrity was also questioned, with accusations that they extorted bribes from patients in exchange for high-quality ANC and childbirth care. Some women simply trusted their own guidance and ability to undergo labour and successfully deliver without any assistance, especially assistance that came from HCPs. Accordingly, trust in one's own experiences to recognize complications and low perceived susceptibility to adverse outcomes fortified preferences for facility-based deliveries. In the early postnatal period, several women preferred to receive traditional PNC at or near home due to greater trust in TBAs, relatives, neighbours or spiritual attendants, compared to HCPs with the unseen baby.

Fear of facility-based services and care-takers was another factor that influenced preferences for traditional care services. Women across rural Africa commonly preferred traditional childbirth care and traditional PNC at

or near home due to fears of medical procedures and operations conducted in facilities. There were also fears and speculations sparked by recent cases of maternal death in a health facility and fears that vaginal examinations with HCPs would cause labour retraction and harm the fetus, as well as degrade the labouring women. In a traditional homebirth, vaginal examinations were desirably done when the baby's head crowned - in a gentle manner. Other expressed fears included: bad fortunes from a facility delivery, ramifications for using non-traditional care, being turned away from a facility for arriving too early while not being active in labour and delivering outside of the village premises.

Traditional birthing care at or near home took place in a familiar environment with known people, which was a comfortable and highly preferred birthing environment that many women desired. Health facilities, on the other hand, were seen as foreign environments that were not as comforting as traditional sources of care. TBAs, relatives and other CBAs were favoured over HCPs for taking women's comfort into account during and after childbirth. Examples provided include the following: the freedom to express emotions during labour without restrains; use of warm water instead of the cold water used in health facilities; close care and support; desired birthing positions; respect for privacy; respect for family members or neighbours who wanted to attend. Some women preferred to stay in the community throughout childbirth and puerperium due to discomfort with and an aversion for young or inexperienced HCPs who held authority over the women in facility settings. They felt passive, helpless and foolish in these situations, and thereby wanted to avoid health facilities, especially if staffed by young or inexperienced HCPs.

Two of the major sub-factors pertaining to comfort were birthing positions and privacy. Traditional care-takers favourably enabled women to deliver in the birthing position of their choice as guided by their instincts and desires without being forced into certain positions. This was especially the case amongst those who preferred kneeling or squatting over the more formal supine positions. Traditional childbirth at or near home was also preferred due to concerns about giving birth in open, crowded rooms and exposing private parts to strangers. A traditional birth favourably enabled women to have control over who was allowed in the room and to cover specific body parts that they wanted to conceal for integrity purposes.

Information, knowledge and awareness were also factors that influenced expressed preferences for traditional maternal care. Women accredited their inclination towards domestic childbirth care outside of formal care settings to the reception of insufficient counsel about the significance and benefits of facility-based childbirth during clinical ANC visits. In other communities, some preferred traditional childbirth care because that was the only type of care of which they were aware. This lack of information and resultant lack of knowledge and awareness led some women to prefer what they expected would be a simple childbirth without the need for professional assistance. In some cases, many women who did have information about facility-based childbirth

care believed it was only necessary and beneficial for managing childbirth complications that a CBA could not manage. To some women, facility-based childbirth under the guidance of a skilled attendant did not necessarily guarantee safety from poor outcomes. Likewise, facility-based PNC was deemed only to be necessary when serious complications arose after childbirth.

*Accessibility to formal maternal care:* Traditional care was preferred at or near home from TBAs, other CBAs, or self-care because it was physically closer and required shorter travel time, if any, to access and have assistance during childbirth and puerperium. Traditional care was an easier and more convenient choice. TBAs, relatives, and other CBAs often lived nearby to service users and were available to provide prompt childbirth assistance at an instant's notice, even at night. In contrast, HCPs often lived in other communities and were thereby relatively harder to access and unavailable for immediate care. Lack of reliable transportation options, including emergency childbirth ambulances, was another factor that influenced the preference to remain in a domestic setting during childbirth. Additionally, rough topographical conditions and dry weather conditions that impact whether one can reach a health facility contributed to the preference of a traditional birth around the home.

Cheaper costs of staying in the community and receiving affordable assistance from a CBA or opting for self-care was a major factor that influenced rural women's expressed preferences for traditional childbirth care and PNC at or near home. In contrast, facility-based maternal care required finances for transportation, health services, and care supplies.  Contrary to a facility delivery, a traditional birth at or near home, such as in a traditional maternity home, did not incur supply and transportation fees. In addition, a traditional birth was favoured because of flexible payment time-frames and payment options for services provided by CBAs, such as through non-monetary items or social favours.

Traditional maternal care was also preferred since it enabled women to resume and attend to their subsistence activities and multiple household responsibilities, such as caring for children. Opportunity costs that result from health facility attendance further encouraged women to stay at home. Some women wanted to stay home for childbirth and the postpartum period to prevent unfaithfulness from their husbands, HIV infection and marital and family dysfunction during the women's absence. A traditional birth at or near home was favoured over an institutional birth because health facilities were deemed socially restrictive for prohibiting relatives or neighbours from accompanying labouring women into the labour ward. On the other hand, the social permissiveness of CBAs to let relatives and other community members into the delivery room enabled women to receive highly-coveted physical, emotional and social support during delivery. The accommodation of

relatives and other community members was also desired because it helped women avoid feelings of loneliness.

In several rural communities, a traditional birth with the assistance of a CBA or through self-care was the desired custom that enhanced a mother's social status and standing within her family and the community. It helped women avoid the stigma attached to a professionally assisted childbirth in a health facility. This included negative labels about labouring women's weakness for relying on modern care-takers, drugs and equipment. Moreover, some women particularly favoured self-cared homebirths because they brought high levels of reverence and recognition as a real or strong woman. Others did not want skilled childbirth assistance from a facility-based source because it was perceived as ill-fated, shameful, and associated with unfaithfulness and deceit about the father of the baby. Skilled, facility-based childbirth would be a detriment to a mother's social status. In terms of gender and age, TBAs were favoured because they tended to be female and often older, while facility staff members were often male.

*Cultural and religious norms, beliefs, and obligations:* In many rural populations, traditional childbirth care and traditional care-takers, namely TBAs, were perceived to be the standard providers, having spanned generations. Childbirth was culturally seen as a natural process that should take place at home following local customs and traditions, while health facilities were mainly treatment centers for abnormal situations. Some women preferred childbirth care and PNC at or near home from CBAs, especially TBAs, spiritual healers, or grandmothers, as they held the role of primary maternal care attendants in the local culture. Others preferred traditional births because they did not want to be seen by health attendants that were strangers to their culture. Cultural practices and beliefs strongly contributed to the preference of traditional maternal care over formal maternal care. In several rural populations, CBAs favourably attended to, supported, or took consideration of valued customs and practices during childbirth and puerperium. Examples of critical cultural practices that contributed to preferences for traditional care during intrapartum included the following: keeping the blood lost during childbirth within the household to protect against witchcraft; customary announcements of a baby's arrival to the community; application of concoctions to prevent labour complications; application of concoctions to facilitate simple delivery. Examples of critical cultural practices that contributed to preferences for traditional care during postpartum included the following: retrieval and burial or aerial fixation of the placenta, often around the woman's home; performance of postnatal rituals with herbs; application of concoctions to prevent postnatal complications; re-infibulation; clamping the baby's umbilical cord and applying charcoal powder and herbal extracts to the cord stump; giving a mixture of boiled water, sugar and salt to babies to cleanse their stomachs, ease digestion and boost immunity.

A reason health facilities were not favoured was because they did not accept cultural practices or provide culturally sensitive services, some of which were perceived to be important for preventing misfortune on newborns. One key example of the health facilities' poor appeal is the anger caused by their disposal of placentas against the desires of the women and their families. A traditional birth was also preferred because facility-based deliveries were considered a taboo that brought repercussions to families, including obstetric complications and maternal or infant death. The wish to carry out traditional postnatal customs involving the mother and the newborn also kept women at home after delivery. In populations where the mother and newborn were believed to be vulnerable to witchcraft, women wanted to stay in their own premises for the first 40 days after delivery so they can use traditional customs to fend off witchcraft and evil spirits. Some preferred a traditional PNC because they had to remain in seclusion at home with their baby during postpartum for at least a week after delivery. This tradition went up to three months with twins, which would include the in-house seclusion of the mother, the babies and the placentas. The purpose of such seclusion was to prevent diseases caused by people with the 'evil eye' and to give the mother time to recover from delivery in the comfort of her home.

Adherence to religious obligations contributed to the desired provision of services. Religiously sensitive childbirth services at home were desired by some Muslim women due to the significance of protecting the sanctity of the female body in Islam, consuming halal meals, and having a quiet place for prayer. Relative to CBAs, HCPs were less religiously sensitive to some Muslim women's religious obligations and needs. Complicated births were considered cursed and only religious intervention from a spiritual or traditional attendant throughout the intrapartum period was believed to result in a positive birth outcome. Some women believed that irrespective of where one gives birth, complications and maternal death would occur for those being punished for past transgressions. As a result, they wanted homebirth because facility-based childbirth was considered futile even during complicated situations as only a deity could protect them from maternal death.

#### 3.4.3.3 Factors Contributing to Preferences for Traditional and Formal Maternal Care

*Perceived need of formal maternal services:* Amongst some rural populations, preferences conditionally shifted from traditional to formal maternal care throughout the continuum of maternal care. There were women who preferred traditional ANC, either through self-care or assistance from a CBA, because normal pregnancies were not believed to require medical intervention. Preferences shifted to facility-based ANC only when the pregnancy became abnormal due to complications, which were believed to be best managed by HCPs. Likewise, many women across rural Africa voiced a preference for traditional childbirth care as the first line of

care for 'normal' childbirth, but indicated that their preference shifted towards facility-based childbirth care as the second line of care or last resort as soon as a complication arose. Similar transitional preferences were also expressed from normal puerperium to abnormal puerperium, such as following the onset of birth recovery complications. Health facilities were merely treatment centers that were better equipped to handle pregnancy, labour and childbirth, and puerperal complications than a traditional care provider. However, some women with transitional preferences contrariwise preferred traditional care for abnormal or unnatural maternal problems and formal care for normal or natural maternal problems. These women saw abnormal problems as transcendent complications that were caused by witchcraft, which they believed would be best handled by traditional healers or spiritualists. Facility-based care, on the other hand, was only favourable for problems it was perceived to be adequate to treat: normal or natural maternal complications. In other cases, there were a few women who believed that birth was a natural occurrence regardless of the source of care. They felt that either formal or traditional care was suitable for childbirth care, with no specific preference.

Many women across rural Africa preferred to initiate facility-based ANC later on between the middle of the 2nd trimester to the beginning of the 3rd trimester after having traditional ANC in the earlier months. This traditional care can include traditional-care takers who provide basic check-ups, or self-care and management. One factor that influenced the desire to delay the first clinical visit was the perceived poor quality of facility-based care, including poor HCP attitudes and long waiting times. Clinical visits in the early months were thereby believed to be inconsequential. Delayed first clinical visits were also preferred by women who had successful previous experiences where they did not experience any serious problems in the early months. These women believed they could self-manage pregnancy early on with limited or without professional checks. In other cases, the pregnancy had to be internally felt, externally visible and finally confirmed by a CBA, often an elderly woman, before booking a first clinical ANC appointment. The underlying factor pertained to fear of poor fortunes and bad luck for revealing pregnancy to the public, including HCPs, before it was evident. Women believed that confirmation of their pregnancy from a trusted CBA would help them evade any bad luck that could result from poor concealment. Others fears that contributed to preferences for late or irregular formal ANC following early traditional ANC included traditional fears that pregnant women in the early period of pregnancy are vulnerable to witchcraft and the fear that relatives or the public would find out about their pregnancy. Native healers were believed to possess abilities to fend off witchcraft, helping to conceal and protect the mother and fetus from bewitchment. Fear of revealing their pregnancy to the public, including the school administration or health facility staff, was based on concerns that their parents would be notified of the pregnancy.

*Accessibility to formal maternal care:* Early ANC outside of a facility and later facility-based ANC was preferred due to issues with proximity, transportation, crossing rivers during the rainy season, and financial constraints. Women also wanted late initiation due to feelings of shame for visiting the clinic with torn clothes or tight dresses, having too many pregnancies, or being over 40 years old and pregnant.

*Cultural norms and beliefs:* Cultural beliefs and traditions of concealing pregnancy in the early months of pregnancy shaped some women's preferences for more traditional ANC at or near home in the earlier months, often well into the 2nd trimester. The pregnancy is traditionally revealed following successful childbirth or when the pregnancy was visible through the shape of the abdomen. Such norms influenced some women's preferences for the uptake of facility-based ANC after the pregnancy became physically visible or when women were nearing childbirth.

The CERQual assessment resulted in final classifications of the overall confidence in each review finding as 'high,' 'moderate,' 'low,' or 'very low' [216]. The summary review findings and the CERQual assessments are presented below in **Table 3.6**. Refer to **Appendices 3.4-3.6** for overall confidence assessments and explanations for confidence assessments of each finding.

**Table 3.6** Summary of Narrative Synthesis Findings

| Review Findings (sub-themes and summaries) | Contributing Studies | CERQual Confidence in the Evidence |
|---|---|---|
| **Formal maternal care** | | |
| **Attendant capacity and technical competence -** Greater training and technical abilities of HCPs in providing maternal care contributed to preferences for formal care. | [119, 120, 130, 136, 139, 140, 187-194, 196, 198, 201-203, 205, 208, 211, 212, 214] | Moderate confidence |
| **Availability of resources -** Contrary to traditional care, facility-based services were preferred because of the availability of necessary personnel, equipment and supplies for maternal health services (e.g. | [120, 136, 139, 189, 190, 194, 202, 205, 208, 213-215] | Moderate confidence |

| | | |
|---|---|---|
| health status assessments) | | |
| **Attendant attitudes and behavior -** Preferences for facilities that employed caring, considerate and sympathetic HCPs, as well as welcoming reception staff. | [119, 128, 136, 140, 190, 191, 193, 194, 208] | Low confidence |
| **Previous experiences -** Positive previous experiences in health facilities and poor previous traditional care experiences in a domestic setting contributed to preferences for maternal care. | [119, 136, 140, 187, 194, 208, 210, 215] | Moderate confidence |
| **Fear of complications and death -** Fear of infections, birth complications and death under the guidance of unskilled attendants contributed to preferences for facility-based care. | [120, 128, 201, 204, 212, 214] | High confidence |
| **Comfort and privacy -** Preferences for facilities that provided the user greater control of their surroundings, including privacy desires. | [128, 136, 187, 193, 194] | Moderate confidence |
| **Information, knowledge and awareness –** Maternal health education at health facilities and increased knowledge and awareness of the significance of skilled maternal care contributed to preferences for formal maternal care. | [130, 136, 139, 187, 190, 192, 196, 208] | Moderate confidence |
| **Costs and affordability -** Preferences for health facilities that provided cheaper services. | [136, 189] | Very low confidence |
| **Social pressure -** Preferences for facility-based services because it empowered women to visit a facility | | |

| | | |
|---|---|---|
| on their own accord and enabled women to avoid social pressure and stigma during homebirths. | [139, 196, 208] | Low confidence |
| **Cultural norms -** Shift in cultural norms towards facility deliveries contributed to preferences for formal maternal care. | [130, 140, 198, 211] | Moderate confidence |
| **Religious beliefs and obligations -** Preferences for health facilities that provided religiously sensitive maternal care and respected religious obligations and needs. | [120, 128, 211] | Very low confidence |
| **Traditional maternal care** | | |
| **Quality of care -** Traditional childbirth care preferred because of the poor quality of facility-based maternal care. | [193, 199, 205] | Low confidence |
| **Attendant capacity and competence -** TBAs and other CBAs were preferred for being most competent in managing normal childbirths. They were also believed to have greater abilities in detecting, curing and managing complications. | [96, 136, 139, 141, 189, 194, 199, 201, 204, 205, 210, 211, 215] | Moderate confidence |
| **Availability of resources -** Equipment, supply, and drug shortages, as well as long waiting times in health facilities contributed to preferences for traditional births. | [191, 196, 210] | Low confidence |
| **Attendant attitudes and behavior -** TBAs and other CBA were preferred for being more affectionate, sensitive, hospitable, and positive than HCPs. | [120, 133, 140, 192-195, 197, 199-201, 204, 209-211] | Moderate confidence |

| | | |
|---|---|---|
| **Previous experiences -** Traditional births were preferred because of positive previous experiences with traditional births. | [140, 141, 197, 202, 204, 205] | Moderate confidence |
| **Trust -** Greater trust in CBAs, traditional childbirth care and PNC practices, or self-care, over HCPs and health facilities contributed to preferences for traditional maternal care. | [96, 141, 191, 195, 196, 198-200, 202, 205, 211] | Moderate confidence |
| **Fear of medical interventions -** Fear of facility-based services and related consequences of receiving facility-based care contributed to preferences for traditional maternal care. | [130, 133, 139, 191, 194, 203, 206, 207] | Low confidence |
| **Comforting environment -** Domestic settings were preferred for being more familiar, whereas health facilities were seen as foreign environments. CBAs helped to provide this desired environment by taking consideration of user comfort (e.g. birthing position), while HCPs were adjudged to be less accommodating. | [96, 104, 139, 141, 194-196, 199-202, 204-207, 209, 211] | Moderate confidence |
| **Privacy -** The lack of privacy in health facilities (e.g. exposure of private parts to strangers) contributed to preferences for traditional births. In domestic settings, women possessed greater privacy. | [104, 128, 187, 193, 197, 199, 202, 207, 210, 211] | High confidence |

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|---|---|---|
| **Knowledge and awareness -** Lack of knowledge and awareness about maternal health, as well as misconceptions about the perceived insignificance of formal care for a normal birth and puerperium, shaped some women's preferences for traditional care. | [120, 133, 139, 140, 188, 191, 196, 197, 199, 205, 206, 209-212] | Moderate confidence |
| **Shorter distance and convenience -** Traditional births were favored for being closer and more convenient than institutional births. | [96, 120, 139-141, 188, 197, 199, 202, 204, 210] | High confidence |
| **Transportation and topographical difficulties -** Lack of transportation options, poor roads, poor terrains and poor conditions contributed to preferences for traditional maternal care. | [139, 140, 188, 191, 210] | Low confidence |
| **Costs and affordability -** Preferences for traditional births because of cheaper costs (services, transportation, emergencies) and longer repayment time frames than in health facilities. | [96, 120, 133, 139, 140, 189, 191-193, 197, 207, 210] | High confidence |
| **Social constraints -** Domestic chores and responsibilities, as well as social permissiveness of CBAs in terms of family accommodations during maternal care contributed to preferences to stay away from facility-based care. | [96, 133, 139, 191, 196, 197, 199, 201, 205, 206, 211] | Moderate confidence |
| **Social status -** Preferences for traditional care were also affected by the enhanced social status that comes with traditional care and diminished social status that comes with facility-based care. | [133, 195, 196, 199, 204, 211] | Low confidence |

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|---|---|---|
| **Cultural norms -** Traditional births were favored because they spanned generations and were considered to be the 'normal' type of birth. | [120, 133, 139, 140, 193, 195, 196, 199, 201, 203, 205-207, 211, 212] | High confidence |
| **Cultural beliefs and obligations -** CBAs provided culturally sensitive care and enabled cultural practices during childbirth and postpartum (e.g. burying the placenta). | [130, 141, 189, 191, 195, 197, 199, 200, 205, 211] | Moderate confidence |
| **Religious beliefs and obligations -** CBAs favorably provided more religiously sensitive care than HCPs. Beliefs that only God can manage complications also contributed to preferences for traditional maternal care. | [120, 128, 139, 197] | Low confidence |
| **Traditional and formal maternal care** | | |
| **Necessity of skilled care -** Preferences for traditional antenatal, childbirth and postnatal care as a first line of care for 'normal' situations transitioned into preferences for facility-based care throughout the continuum of maternity as a secondary resort (treatment center) during the onset of complications. | [120, 139, 140, 188, 189, 191, 192, 196, 199, 201, 205, 206, 210-212, 215] | Moderate confidence |
| **Previous experiences -** Successful previous pregnancies and resultant beliefs to adequately self-manage contributed to preferences for early traditional ANC and late or irregular formal ANC visits. | [141, 213] | Moderate confidence |

| | | |
|---|---|---|
| **Fear of poor fortunes -** Fear of bad luck and witchcraft from revealing pregnancy in the early months contributed to preferences for public concealment and thereby early traditional ANC outside of a facility setting, followed by late initiation of formal ANC. | [213, 214] | Moderate confidence |
| **Poor physical and financial access -** Longer distances, difficult transportation and topography, and high costs of facility-based ANC contributed to preferences for early traditional ANC and late initiation of formal ANC. | [213] | Very low confidence |
| **Social concealment -** Concerns about shame that could result from unsuccessful pregnancies, poor physical appearance, and old age contributed to preferences for early traditional ANC at home and late initiation of formal ANC in a clinic. Hiding pregnancy from relatives and the public eye also contributed to preferences for later initiation of formal ANC | [104, 213, 215] | Moderate confidence |
| **Cultural norms and beliefs -** Cultural beliefs and traditions about concealing pregnancies in the early months contributed to preferences for early traditional ANC and late initiation of formal ANC. | [104] | Very low confidence |

### 3.4.4 Relationships Within and Between Studies

Younger women and primigravidas tend to prefer regular ANC services from clinics than older women, who relatively preferred infrequent visits or traditional sources of care [213]. According to 7 studies, older women mainly preferred childbirth care at or near home, with or without assistance from a CBA [133, 188, 199, 200, 204, 205, 210]. Likewise, multiparous women commonly preferred traditional childbirth and PNC care at or

near home [190, 195, 198, 200, 201, 204, 209]. Perceptions of experience with maternity, as well as the need to attend to household tasks and chores, may have influenced these age and parity related preferences throughout the continuum. Positive previous childbirth experiences could contribute to perceptions of low susceptibility to complications during subsequent births, leading to minimal inclinations to use evidence-based, formal maternal care. The greater household responsibilities of multiparous women compared to nulliparous and primiparous women, including caring for multiple children, could contribute to their preferences to stay home for maternal care. In several rural communities, women with at least some formal education mainly preferred formal maternal care under the guidance of HCPs [119, 141, 198, 202, 205, 208, 210]. This may have been due to greater knowledge, awareness, and understanding of the risks of maternity and the significance of professionally trained attendants in reducing poor maternal and neonatal outcomes. Women with some formal education may also have greater employment prospects, income, and the ability to seek facility-based care than women without any education.

In 9 studies, married women wanted to receive traditional childbirth care and PNC at or near home in a traditional setting [104, 141, 191, 193-195, 197, 201, 206]. This could have been influenced by the reduced decision-making power of married women among their nuclear and extended families. Other contributing factors may stem from cultural and religious beliefs about the exposure of married women to strangers in a public facility setting. Women with a pre-existing life-threatening health infection preferred to receive formal ANC in a clinic setting [192]. In 8 studies, women with a history of health complications during previous pregnancies or as identified during ANC near the time of data collection of the primary studies preferred clinical facility-based childbirths [120, 188-190, 192, 198, 204, 208]. Factors that contributed to these preferences may be the perceived experience of HCPs, and the perception that HCPs and health facilities have a greater ability to manage maternal complications compared to a CBA. Four studies indicated that Muslim women preferred to receive either formal care from HCPs that were sensitive to religious obligations, or traditional care that enabled them to consider religious requirements, such as the sanctity of the female body [128, 187, 193, 198]. However, four studies also indicated that religious norms and beliefs might have minimal influence on the preferred sources of care for some Muslim women, as well as Christian women [190, 194, 198, 206].

## 3.5 Discussion

### 3.5.1 Key Findings

This qualitative evidence synthesis identified preferences for both formal and traditional antenatal, childbirth, and postnatal care. The major themes correspond with the parent factors that contributed to women's

preferences across rural Africa. As shown in the summary table of review findings, though richer data for traditional maternal care resulted in a greater number of contributing factors, the sub-themes describing the preferences for formal and traditional maternal care were reasonably similar. The perceived need of services theme included the necessity and benefits of maternal services offered by a provider. Judgements on the benefits and need of services for positive maternal experiences and outcomes were based on general quality of care, attendant competence and capacity, availability of resources, attendant attitudes and behaviours, previous experiences, fear, trust, comfort, and privacy, as well as knowledge and awareness of maternal risks throughout the continuum of care. The accessibility to services theme included the physical, financial and social accessibility of services provided by a source of maternal care. The cultural and religious norms, beliefs, and obligations theme included norms, obligations and expectations of sensitivity during the provision of maternal care. GRADE-CERQual assessments indicated that the confidence in most of the findings was moderate. The high end of the average moderate score reflects the quantity of included studies and the range of populations, study contexts, and user viewpoints throughout rural Africa. The low end of the average moderate score reflects the moderate overall quality of included studies and lack of rich data for some contributing factors, such as the availability of resources.

During the antepartum period, tests and assessments related to the progression of the pregnancy and the health status of the mother and the fetus, as well as the management of potential complications, were major contributors to women's preferences for formal ANC under the guidance of HCPs. Health education about pregnancy, nutrition, and childbirth preparations, along with the incentivized clinic attendance cards for making ANC visits, also shaped some women's preferences for formal ANC under the guidance of HCPs. However, preferences for early traditional ANC at or near home before facility-based ANC in the latter months of gestation were expressed in several study communities. Fear of bad luck and bewitchment from revealing the pregnancy to the public, concerns about social image after an unsuccessful pregnancy or a poor physical showing at the clinic, as well as positive previous pregnancy experiences that induced self-belief to manage a pregnancy without skilled assistance, were major contributors to preferences for early traditional ANC and later facility-based ANC. Women across rural Africa also expressed preferences for traditional ANC for a normal, uncomplicated pregnancy, in which case clinic visits were deemed unnecessary. When complications arose during pregnancy, preferences shifted to facility-based ANC, as formal care was believed to best manage abnormal, complicated pregnancies. During the intrapartum period, the promotion of skilled childbirth care during ANC and the perceived high level of competence of HCPs in assisting childbirth and ensuring positive birth outcomes, in contrast to CBAs, strongly contributed to preferences for formal childbirth care. In some populations, preferences shifted from traditional care to formal care during the onset of complications, with beliefs that formal care providers (attendants and facilities) were better equipped to manage abnormal

childbirth. The perceived high level of competence of traditional and spiritual attendants in facilitating smooth deliveries and managing health complications strongly contributed to preferences for traditional care. Positive previous experiences with traditional births and the perceived rude, impersonal and neglectful behaviours of HCPs compared with the compassionate and hospitable nature of CBAs were also factors in preferences for traditional care. Additional factors that contributed to preferences for traditional care included fear of medical operations, comforting and private environments, convenience, cheaper costs, social constraints, social image, norms, and sensitivity to cultural and religious practices. During the postpartum period, the significance of postnatal rituals, perceived competence of CBAs in managing complications, trust in CBAs with the neonate, CBAs' care for women's comfort, and easier access to nearby traditional services provision contributed to preferences for traditional PNC at or near home. The perceived high level of competence of HCPs in managing health risks and ensuring full recovery from childbirth was a crucial factor in preferences for formal PNC. Relationships within studies as identified by primary study authors and between studies by the review authors showed that older women and multiparous women often preferred traditional childbirth care at or near home. This was possibly due to perceptions of lower susceptibility and greater experience to manage their own childbirth without professional assistance. Women who were married preferred traditional maternal care, which may be due to the influence of relatives and elders, or possibly their lack of decision making power in the family unit.

### 3.5.2 Extant Review of the Literature

Quantitative studies were excluded from this review due to time, resources, and other pragmatic reasons. Also, most quantitative studies relevant to the review topic did not provide a comprehensive understanding of the factors that contributed to women's preferences. However, findings from these studies are generally consistent with findings from the review, especially for antenatal and childbirth care preferences. A cross-sectional study in rural Ethiopia reported that women preferred skilled ANC for the availability and provision of health assessments to determine fetal wellbeing and fetal positioning [217]. Further corroborating review findings, the study reported that user desires to receive vaccination and to deliver healthy, infection-free neonates led to preferences for skilled ANC. Consistent with review findings on the influence of social inaccessibility on preferences for early traditional ANC and later formal ANC, women in an agricultural town in Ethiopia reported wanting informal ANC in a domestic setting due to fears of clinically determined negative diagnoses, such as positive HIV results, that would cause community-wide stigmatization and potentially damage to their social reputation [218]. Although social inaccessibility, fear, cultural beliefs, and abnormal pregnancy influenced preferences for traditional maternal care during antepartum in this review, surveys

across rural Africa distinctly found that family preferences, male disapproval, financial constraints, fear of obstetric complications, being in a state of good health, limited knowledge about ANC, lack of time, and long waiting time in health facilities as reasons for the preference of traditional care during antepartum [105, 218]. Surveys of women done in rural Zimbabwe and Gambia found that the majority wanted professional childbirth assistance in a facility [107, 219]. Some women identified TBAs' poor access to drug supplies and inabilities to handle complications as reasons for preferring skilled care, while others conversely favoured TBAs for being more helpful, providing confidentiality and expressing sympathy and respect to patients [107]. Closeness to home and relatives and greater trust in the experience and competence of TBAs over HCPs shaped preferences for homebirths in rural Ethiopia [218]. In a comparative study of predominantly rural women in Nigeria, women who preferred TBAs or patronized TBAs, accepted statements that TBAs give better attention, are friendlier, desirably pray before providing maternal services, are located closer to patients, and are more accessible [220]. HCPs were preferred or patronized during abnormal pregnancies and deliveries for having better equipment and training to care for obstetric complications. Discrete choice experiments on rural women's preferences for maternal care in East Africa found that women preferred facilities that provided reliable access to medication and equipment, positive and respectful attendants, good technical quality and highly trained providers over cost, distance and transportation [221, 222]. Some women even preferred to travel to distant facilities with a higher quality of services or to receive traditional care at home than to receive low-quality services from nearby facilities. Larson et al. [223] found that medical knowledge and provider treatment, as well as the interpersonal quality of care, were major attractants. In contrast to findings in the other discrete choice experiments [221, 222], access to medical equipment and drugs and privacy were not highly valued. Though precipitate labour was not a prominent factor in this qualitative synthesis, a cross-sectional study of Ethiopian pastoralists found that women preferred traditional births mainly because of labour that progressed fast and gave them no time to reach a health facility [224].

A systematic review of traditional medicine in Saharan Africa found that traditional services were sought and used more than modern care throughout the continuum of maternal care due to low costs and alignment with social, cultural, and religious values, as well as discontent with modern care [225]. Confirming findings from this review, late disclosure of pregnancies resulted from cultural beliefs and fears about witchcraft, which increased the probability of late facility-based ANC initiation and attendance [226]. Traditional and spiritual methods were believed to be the best options for preventing bewitchment, thereby reducing preferences and uptake of evidence-based ANC [227]. Studies from various contexts in Asian countries also reported similar findings to those of this review. A study in Indonesia found that traditional beliefs, such as beliefs pertaining to women's decision-making power and standing in the household, strongly affected preferences for informal ANC under the supervision of TBAs [228]. While some Asian women sought facility-based care because of fears

induced from previous negative experiences with obstetric complications [229, 230], others sought traditional care because of fears induced by routine and life-saving operations [231]. Evidence from the developing world strongly indicates that women tend to use the same sources of maternal care if a previous experience was successful, but tend to change when a previous experience was not successful [11]. In the review, women with successful previous experiences with traditional care or poor experiences in health facilities often wanted to receive traditional care in the future. Many studies across Asia also found that comfort was a key factor, with women preferring traditional births over institutional births because they were able to give birth in the traditionally desired positions [231, 232]. In Indonesia, a qualitative study found that women still preferred traditional births in a domestic setting because of the physical and social inaccessibility of health facility services [233]. Similar to findings from across rural Africa, homebirths were considered to be more convenient due to distance and the need to manage household chores, such as caring for children. Being away from the family, especially in facilities that restrict family accompaniment, made facility-based deliveries socially inaccessible and undesirable [233]. In addition to comfort, physical accessibility and financial accessibility, a study in Laos found that homebirths were preferred due to the upholding of traditional beliefs and practices [232]. A study in Bangladesh reported that preferences for traditional sources of maternal care were influenced by the preferences of male partners and relatives for traditional maternal care. This may be associated with cultural beliefs about gender roles and gender power dynamics, with male partners and relatives, such as elders, having a direct or indirect influence on their wives' preferences and ultimate health-seeking behaviours [234]. Women with reassurances of positive health status during ANC visits and with a normal start to labour also wanted traditional sources as the first line of care [232, 235]. However, when complications arose and normal childbirth turned into abnormal childbirth, preferences shifted to the second line of care, health facilities. In the postnatal period, a systematic review of traditional maternal practices in Asia found that women tend to stay in a domestic setting because the confinement of women was routine after childbirth [231]. The reason for this confinement was associated with community perceptions of post-childbirth women as weak, fragile, and vulnerable to illnesses. Similar to findings from the qualitative evidence synthesis, other factors that kept women at home in postpartum included superstitions, magic, traditional medicine and herbs, massaging, and behavioural taboos [231]. Findings on the influence of good interpersonal and technical quality of care are however consistent with findings from the review. In contrast to factors identified in the qualitative evidence, cultural and religious factors did not greatly affect women's preferences in the quantitative literature [85, 93, 107, 219-223]. Overall, the quantitative African studies and the studies conducted across Asia, corroborate most review findings that technical quality of care, interpersonal quality of care, previous experiences, fear, comfort, physical access, financial access, and social access contribute to women's preferences for maternal care.

### 3.5.3 Strengths and Limitations

The main strength of this review is the systematic identification and synthesis of qualitative evidence from across rural Africa, gathering data on preferences for sources of maternal care from women living in rural African populations. Sole inclusion of qualitative findings on women's preferences elicited findings that were grounded in women's experiences and realities, which increased the likelihood that the findings reflected their views. A range of rural women with a variety of demographics, cultures, and communities with different challenges and needs were represented in this synthesis. The search strategy was broad and effective in gathering relevant studies, but the inclusion of all eligible studies in the review meant the inclusion of low-quality studies. However, despite some methodological concerns and poor reporting in the lower quality studies, they presented authentic and relevant accounts of perceptions pertaining to the context of this review. The findings of these studies did not markedly contradict those of moderate and higher quality studies. Inferior scores on the CASP rating could also partially be explained by word limits or other editor suggestions of their journals. Another strength is the GRADE-CERQual transparent assessment of how much confidence readers, including decision-makers and policy-makers, can place on the review findings [181].

A narrative synthesis of qualitative evidence is a relatively young method of qualitative evidence synthesis, with limited reported guidance on how to carry out a qualitative narrative synthesis. As a result, complete transparency is an inherent limitation of a narrative synthesis. Unlike other methods of meta-synthesis, including the meta-ethnography and grounded theory synthesis, the narrative synthesis is not ideal for interpreting evidence and developing explanatory models [176]. Therefore, the reviewers' interpretation of the findings is not part of the synthesis. Implementation of tools and techniques to collate the evidence and report findings relied on the authors' discretion of best practice, making it difficult for readers to scrutinize judgements and decisions. As is the nature of qualitative research, researcher discretion of best practice inevitably presents a potential for bias. To enhance transparency and display judgements, the narrative synthesis and the tools used for data synthesis were thoroughly described as guided by Popay et al. [176]. Though primary authors of studies were contacted to expand on study findings, additional data on participant characteristics was only collected or still stored and accessible by a few authors. This limits the authenticity and transferability of the identified thematic patterns and relationships between sub-groups across rural Africa. Another limitation identified by the CERQual approach is that the majority of the review findings were low to moderate in confidence, with only a few high confidence findings. This can limit the dependability and confirmability of some review findings. Due to drastic anticipated changes in the scope, methodology, and reporting of the review at the outset of the review, an a-priori protocol was not pre-specified and submitted. Despite benefits in avoiding deviation, the absence of an a-priori protocol is a limitation as a-priori protocols help reduce bias in the review process and increase the transparency of the evidence synthesis.

Studies published in languages other than English were excluded from the review, which may have introduced a language bias and excluded studies conducted in commonly spoken languages such as French, Arabic, and Swahili. The exclusion of studies conducted in French may have contributed to the lack of reports from French-speaking countries, such as Ivory Coast, Senegal, and Gabon. As some of the studies were conducted over ten years ago, it is possible that the data presented in those studies no longer fully reflect women's current preferences and needs, thereby limiting the relevance of the findings to future policy and intervention design. Over half the studies were conducted in Ethiopia, Kenya, Nigeria and Ghana, which also limits the authenticity within the review findings and further limits the feasible transferability of review findings and implications throughout rural Africa.

Only a few of the included studies covered perspectives about women's maternal care preferences after childbirth, limiting the credibility and transferability of the PNC preferences and contributing factors. Additionally, PNC was considered differently in the included studies, with some studies referring to PNC as the immediate care received after childbirth. Other studies only considered visits in the postpartum period that were separate from the visit for childbirth as postnatal visits. This can influence differences in the findings. For many women, reported preferences for traditional sources of care could have been supplanted by barriers to their access to evidence-based maternal health services. In other words, various restraints may have tainted their reported or expressed preferences, thereby casting doubts over the credibility and authenticity of some preferences. These barriers may have included costs, proximity, transportation, topography, lack of knowledge about available modern services, underdeveloped facilities, low decision-making power in the household and family, relatives' expectations, and inhibitory traditional or religious obligations. For example, it is plausible that a woman who genuinely wanted a facility-based birth, but was hindered by distance or lack of transportation, may have rather reported a preference for a more convenient homebirth to primary researchers. Therefore, some of the expressed preferences may have been entirely confounded by such barriers. Lastly, relationships identified within and between studies are limited in credibility and dependability due to the lack of sub-group comparisons, absence of participant data, and large variations in preferences and contributing factors.

### 3.6 Conclusions

This review identified that women predominantly prefer formal ANC or a mixture of traditional and formal ANC, while traditional PNC was most preferred across rural Africa. Preferences for childbirth care varied with many women preferring formal childbirth care, traditional childbirth care, or a mixture of both. The review also identified the major deterrent factors that contributed to women's detrimental preferences for traditional maternal care throughout the continuum. The first major factor was related to women's perceptions of the

necessity and benefit of a provider, under which CBAs and traditional care practices were perceived to be the more necessary and beneficial compared to HCPs and facility-based services. The second major factor was accessibility to maternal care services, under which CBAs and traditional care were said to be more physically, financially, and socially accessible than facility-based services. The third major factor was cultural or religious norms, beliefs, and obligations, under which CBAs and traditional care were said to provide more culturally and religiously sensitive care. In addition, some cultural practices that were to be conducted in a domestic setting conflicted with the provision of facility-based care. These findings suggest that increasing the utilization of evidence-based maternal health care and reducing maternal mortality across rural Africa requires formative identification of existing resources in target populations, how community members think about and frame maternal health problems, and what they consider as priority needs to receiving formal maternal care. In consort, there is a need for community-based formative research to reduce contextual uncertainties of target populations. Interventions designed with high contextual certainty about target population values and preferences, as well as existing challenges and needs, will have a better chance of success in improving perceptions, allure and uptake of formal maternal care services.

## CHAPTER 4: PAPER 2

# A qualitative study of community elders' perceptions about the underutilization of formal maternal care and maternal death in rural Nigeria

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## 4.1 Abstract

**Background:** Underutilization of formal maternal care services and accredited health attendants is a major contributor to the high maternal mortality rates in rural communities in Nigeria. Perceptions of poor quality of care and inaccessible services in health facilities strongly influence the low use of formal maternal care services. Therefore, there is a need to understand local perceptions about maternal health services utilization and maternal death. This study thereby aims to explore perceptions and beliefs about the underutilization of formal care and causes of maternal death, as well as to identify potential solutions to improve the use and reduce maternal mortality in rural Nigeria.

**Methods:** Data were collected through 9 community conversations, which were conducted with 158 community elders in 9 rural communities in Edo State, Nigeria. Data from transcripts were analyzed through inductive thematic analysis using NVivo 12 software.

**Results:** Perceived reasons for the underutilization of formal maternal care included poor qualities of care, physical inaccessibility, financial inaccessibility, and lack of knowledge and awareness. Perceived reasons for maternal death were related to medical causes, maternal healthcare services deficiencies, uptake of traditional maternal care, and poor community awareness and negligence. Elders identified increased access to adequate maternal care, health promotion and education, community support, and supernatural assistance from a deity as solutions for increasing the use of formal maternal care and reducing maternal mortality rates.

**Conclusions:** Study results revealed that multifaceted approaches that consider community contexts, challenges, and needs are required to develop acceptable, effective and long-lasting positive changes. Interventions aiming to increase the use of formal care services and curb maternal mortality rates must target improvements to the technical and interpersonal qualities of care, ease of access, community awareness and knowledge, and allow community members to actively engage in the implementation of interventions.

**Keywords:** Maternal death, Maternal care utilization, Rural, Nigeria, Elders, Community Conversations

## 4.2 Introduction

Accounting for nearly 66% of the global maternal deaths, many sub-Saharan African countries failed to achieve MDG 5A of reducing the MMR by 75% between 1990 and 2015 [5]. Today, there is a renewed commitment to SDG 3.1 in reaching the target of below 70 maternal deaths per 100 000 live births by 2030 [236]. Africa's most populous country, Nigeria, failed to meet MDG 5A with a percentage change in MMR of only 39.7% between 1990 and 2015 [5]. Recent epidemiological data for Nigeria approximates 58,000 maternal deaths per year, which accounts for the highest absolute number of maternal deaths in the world [5]. Although most maternal deaths are preventable, the inaccessibility and underutilization of formal maternal healthcare services and trained health professionals sustain the high mortality rates across Nigeria and sub-Saharan Africa as a whole [5, 56]. Formal maternal healthcare services refer to evidence-based services provided throughout the continuum of maternal care by accredited health professionals, often in a health facility setting [56]. Less than half of Nigerian women make four or more formal antenatal care visits during their pregnancy, while approximately 60% of childbirths have taken place at home since the 1990s [56]. During the postpartum period, only about 33% of Nigerian women have utilized formal postnatal care since 2003 [56]. Costs of services, distance to health facilities, long waiting times and poor treatment from professional attendants often deter Nigerian women from utilizing formal maternal healthcare services [55].

All parts of the country are affected, but there are major urban-rural disparities in maternal health outcomes, in that most maternal deaths occur in rural communities [49]. Disparities are often the result of the unequal distribution, physical inaccessibility and financial inaccessibility of adequate maternal healthcare services and infrastructure in rural Nigeria [146, 148, 149]. Physical inaccessibility refers to distance, transportation, infrastructural, topographical, and resource availability-related barriers to receiving facility-based care. Financial inaccessibility can include high costs of transportation to facilities, high costs of medical supplies and services, and high costs of emergency care. The provision of maternal health care is the responsibility of three tiers in the hierarchical system. The first point of contact and the main source of formal maternal healthcare services is a PHC [237]. Rural populations are significantly underserved in Nigeria, which highlights the inequity in their ability to access and use adequate PHC services, and ultimately the higher likelihood of maternal deaths in rural Nigeria [149, 238]. Accordingly, rural women in Nigeria use modern contraceptives less and have more abortions, and receive far less formal antenatal, childbirth and postnatal maternal care than urban women, putting them at higher risks for maternal mortality [56, 53]. The continuation of the current trends in healthcare utilization amongst rural populations will impede Nigeria from meeting SDG 3.1 by 2030.

According to Moore and the World Health Organization [65], respect for elders, approval by elders, and adherence to elders' advice is of traditional significance in rural communities. In many rural African communities, chiefs and other community elders act as the main opinion leaders and primary decision-makers, exerting the most influence on the daily life of community members [65, 239]. In the context of maternal health, such stature at the community, household and even individual level enables elders to hold traditionally-sanctioned influence over care-seeking women and their decisions from family planning to puerperium [132, 239-245]. In parts of Nigeria, women's decisions on maternity care are largely within the traditional purview of leaders in the household or the local community [246, 247]. Community perceptions about health programs and health services affect the utilization of health facilities [248]. The perspectives and beliefs of elders can, therefore, have a critical influence on whether women seek and utilize evidence-based maternal care. Their influence on maternal health indicates that Nigeria must incorporate influential community elders in maternal health strategies to help push towards the SDG 3.1 target [163].

Currently, the lack of evidence and poor understanding of the perceptions of influential elders on maternal health contributes to the poor maternal healthcare development, promotion, access and uptake in many rural communities. Consequentially, this has hindered the impact and success of national, regional and local maternal healthcare programs and services, and thereby the improvement of maternal health outcomes throughout Nigeria. This study explored community elders' perceptions of the poor use of formal maternal care by women and the causes of maternal death in rural communities in Edo State, Nigeria. It also aimed to identify potential solutions that can increase the utilization of formal maternal care and reduce maternal mortality. The literature on community interventions indicates that mobilizing community members to take charge of needs and tailoring programs to address identified community needs can increase their local acceptability and effectiveness [249, 250]. The study will help us understand the local challenges, needs, and priorities, as well as the support that communities can provide for women to better access and utilize facility-based care. In turn, this can help inform new or existing interventions and increase their acceptability and effect in targeted Nigerian communities. Ultimately, the findings will help improve the utilization rates of evidence-based maternal care and reduce maternal mortality in study communities, and thereby Nigeria as well.

## 4.3 Methods

### 4.3.1 Study Design

The authors extracted the qualitative data reported in this study from within a larger, original project being carried out in Edo State (Nigeria) by The Women's Health Action Research Center and the University of Ottawa.

It was funded through a grant from the Innovating for Maternal and Child Health in Africa initiative, which is a partnership of Canada's International Development Research Center, Global Affairs Canada (GAC), and the Canadian Institutes of Health Research (CIHR). The goal of the project is to reduce maternal mortality in Nigeria by improving the availability, accessibility, and use of primary maternal care services by underprivileged and marginalized women in Nigeria. The project employs a mixed-methods approach and is designed as a multi-site and multi-disciplinary cluster randomized trial. It was designed to maximize community participation and ownership in the design and implementation of community-based interventions across the country. This paper focused on and reported findings on elders' perceptions of maternal healthcare utilization and maternal death, which was a component of the qualitative segment of the project. A qualitative approach with a phased analytic plan that elicits themes was employed.

### 4.3.2 Research Setting

With a population of approximately 190 million people, Nigeria is the 7th most populous country in the world [251]. With one of the fastest population growth rates in the world, Nigeria has a total fertility rate of 5.42 (live births per woman). Nigeria's population is projected to rise to 411 million by 2050, which would make it the third most populous country [251]. About 50% of Nigeria's current population is rural [252]. Edo State, which is in the South-South geo-political zone, is one of Nigeria's 36 federating States. It has approximately 4 million people residing in 18 Local Government Areas (LGAs) [253]. The authors selected to use data from two of the predominantly rural LGAs in Edo State for this study: Esan South East (ESE) and Etsako East (EE). Located in the riverine and rural parts of the state, the two LGAs combined for a projected population of 399,917 in 2015, with ESE accounting for a projected 212,055 and ETE accounting for a projected 187,862 [254]. The project leaders selected these LGAs following the preliminary baseline assessments due to their rurality, relatively high maternal mortality rates, and low PHC utilization rates among Edo State LGAs.

### 4.3.3 Participants and Recruitment

At the baseline stage, project leaders geographically mapped the different communities during a preliminary and scoping survey across ESE and ETE. Project leaders identified PHCs in ESE and ETE, as they are the first points of contact for maternal care. The larger project chose the nine study communities in Edo determined to have traditional age-based hierarchies across the two LGAs for community conversations. Four of the communities had a local PHC while the rest did not. Positive social changes in communities require the identification and incorporation of the community members who have a significant influence on local decision-

making [255, 256]. For this study, community elders (≥50 years of age) who were locally recognized as influential opinion leaders were the targeted participants. Their position in the traditional hierarchy can help garner support for community initiatives, influence modernization of traditional beliefs and practices surrounding maternal health, and improve the acceptance, effectiveness and success of maternal health programs.

FO and LN used purposive sampling and putative methods of communication in the study communities to recruit study participants. These methods included meeting community chiefs or traditional rulers before commencing the recruitment of community members. Accordingly, purposive sampling helped to ensure the inclusion of elders who were considered local health influencers and motivators. First, project leaders identified trusted indigenous guides in each community, who then introduced the project and the IDRC-affiliated local research team to the traditional ruler of their community. Afterwards, the local research team met with the traditional ruler of each community to explain research purposes, to obtain consent for the research, and to request a meeting with elders. Community rulers scheduled meetings with community elders for data collection and helped introduce researchers to the participants. The recruitment of elders was continued until data saturation was reached [257].

#### 4.3.4 Data Collection

This study conducted Community Conversations (CCs) with community chiefs and other elders who have a substantial influence on local practices. A CC involves members of a community coming together and holding discussions about a concern, followed by the construction of resolutions to bring about social changes [258]. In accordance, this form of data collection has been found to be effective in some African communities in resolving difficult social problems and getting affected communities to control the process of change relating to those problems. CCs have helped raise awareness and address a range of issues, such as the following: female genital mutilation and HIV screening and prevention [259], as well as mental health stigma among ethnic minorities [260] and health issues in rural Native American populations [261]. An assessment of CCs as a community engagement tool found that the method helped increase awareness among community members, provided a voice for members to share concerns, and facilitated discussions about essential topics [262]. CCs effectively created a participative environment, promoted relationship-building and collaboration among community members and between community members and external stakeholders in discussing potential solutions to identified problems, as well as planning future actions [262]. In rural communities, CCs are especially common and effective for transferring information, driving social interactions and change, and altering local beliefs [258, 261, 263].

For this study, the conversations were designed to enable elders to share and discuss their views and concerns about maternal mortality and the use of facility-based maternal health care, as well as to proffer potential solutions. These conversations helped to identify local needs, priorities and the support that communities in the LGAs can provide and require for women seeking evidence-based services. Proposed solutions to the identified maternal health problems lay a foundation for intervention components that would be acceptable to specific rural communities. Trained project-affiliated investigators, including FO and LN, and facilitators conducted the CCs in Pidgin English and a few in local languages (Ishan and Etsako). During the baseline phase, before the formative phase of the project, a baseline study was conducted in 20 randomly selected communities in ESE and EE (10 from each LGA). Nine study communities were selected from the 20 communities based on the presence and residence of influential elders, as well as the traditional rulers ruling these communities. Nine CCs were conducted with 6 in ESE and 3 in ETE. Each CC had between 12 to 21 elders, which was small enough to allow all members to speak, but large enough to maximize conversations and input from elders with different opinions. The CCs were conducted outdoors by means of a CC topic guide designed to gather perceptions about maternal health-related topics. A technical committee that oversaw the preparation of the research instruments for the larger project developed the guide. The members of the committee were familiar with the cultures of the project communities and the pertinent questions for the conversations. All the research instruments and procedures, including the CC topic guide, were piloted in a suburb of Benin called Oluko with 12 men (≥50 years of age). Meetings had facilitators who guided the conversations with the topic guide, which was also designed to involve the participants in problem-solving. The facilitators were IDRC project- affiliated field supervisors who held traditional positions, such as chieftaincy, or were conversant with the traditions of study communities. These facilitators were experienced qualitative researchers who spoke Standard English, Pidgin English, Ishan and Etsako. Facilitators received project-specific training in qualitative data collection and in facilitating CCs before fieldwork. FO and LN were senior IDRC project investigators who oversaw the recruitment and data collection stages in ESE and ETE.

At the start of meetings, traditional methods of meeting with the community leader were used, including the sharing of kola nuts and requests for traditional prayers for research success. The field investigators and facilitators then explained the reasons for conducting the project. Thereafter, the elders engaged in the conversations and shared existing problems in maternal care. They were encouraged to partake in proposing solutions to identified problems and in community-relevant and appropriate action plans to help improve maternal healthcare utilization. Discussions in the CCs lasted for approximately 60 to 90 minutes to give all the participants a chance to express their thoughts. The discussions ended when no new topics arose (saturation). After the closure of the meetings, resolutions were itemized and read to the elders for respondent validation. The elders reviewed the resolutions and thereafter gave feedback on the itemized resolutions. The CCs were

audio-recorded and then transcribed verbatim. Thereafter, the transcriptions for each CC were assessed for clarity and accuracy. The elders' English responses were transcribed verbatim, while the elders' responses in Pidgin English, Ishan or Etsako were translated into English. Literal translation to English was used to preserve the elders' responses and to reflect the participants' mindsets [264]. Participants were assigned codes to remove any identifying information that could jeopardize their anonymity and privacy.

#### 4.3.5 Data Analysis

Prior to commencing analysis, audio-recorded conversations were transcribed with the assistance of translators. Data from transcripts were analyzed through inductive thematic analysis using NVivo 12 software. Study authors followed Braun & Clarke's [265] guide for conducting a thematic analysis as it enabled a transparent and rigorous analysis. This is crucial for producing the pertinent information required for the study's research approach. The theoretical flexibility of thematic analysis enabled us to analyze different aspects of the research objectives, developing or extending understanding of elders' perceptions. It also helped reflect the richness, the detail and the in-depth nature of the qualitative data collected in the study [265]. The primary and corresponding author independently read the transcripts repeatedly to get immersed in the raw data and make a note of initial topics and ideas relevant to the research question. The transcripts were coded in an iterative manner, revisiting the transcripts and altering and modifying the codes as reflected by the data and the emerging patterns. Excessively detailed word-by-word or line-by-line coding reduces the ability to see patterns among and between pieces of data [266]. Lines of text were thereby coded broadly, often ranging from a sentence to several sentences, to ensure that the intentions in the participants' views were not lost. Many references under each code also included some surrounding data to ensure the context of meaning was intact, acknowledging that some texts can be categorized into different codes. The primary author (AWF) and corresponding author (SY) then discussed their codes and resolved any differences in coding, after which a final consensus agreement was reached. Themes and subthemes were developed from the codes and the dataset after making sense of the patterns in the coded data relative to the research question [265]. The final themes were validated and were accepted as being representative of the data within the context of the research question. The final themes were named to tell the story of the categorized codes. Selected quotes in the reporting of findings were chosen to represent a typical response relative to the reflected theme. Saturation was reached when no new codes or patterns were identified from the transcript data.

#### 4.3.6 Trustworthiness

The trustworthiness of qualitative research is crucial for ensuring a rigorous study that produces findings capable of making an impact on policy or practice [267]. Multiple authors are involved in data collection and analysis. Following data collection from the CCs, FO and LN employed member-checking in order to receive validation and ensure credibility of the proffered solutions. Multiple coders (AWF and SY) were used to independently code the data and then to collaboratively refine their proposed codes and thematic patterns. Field investigators FO and LN provided feedback. FO and LN have ample experience in reproductive health research in rural sub-Saharan Africa and are involved in the larger project as principal investigators. Clarifications, project issues, thematic misinterpretations, contradictions, factual errors, and reporting of study findings were raised and discussed. A colleague with qualitative research experience was also engaged by the primary author to serve as an external auditor and further ensure dependability. To ensure confirmability, the decisions made in the research process, starting from the research objectives to the interpretation of findings, are thoroughly described, along with examples of data to support findings and conclusions [268]. Data was collected from male elders and female elders, the latter having had more direct experiences with maternity in their life course. Data was also collected from multiple locations in the two LGAs, thereby involving different elders in each community. This data triangulation helped enrich and deepen the understanding of study findings [267, 268].

#### 4.3.7 Ethics

Ethics approval for the larger project was granted by the National Health Research Ethics Committee of Nigeria (NHREC) on 18/04/2017. Ethics approval for this qualitative study was received from the University of Ottawa Research Ethics Board (REB) on 18/03/2019. Participants were voluntarily enrolled in the study on the basis of free and informed consent. Participants were informed that information collected from the research project would be used to understand the current community needs, to improve the future usage of evidence-based maternal health services, and to improve maternal health outcomes in their community and Edo State. Participants were then informed that once they chose to participate, they could withdraw at any time or refuse to answer any questions, without suffering any negative consequences. Permission to audio-record the community conversations was sought and obtained before data collection. Processes for managing and storing the audio files from the CCs were put in place to further ensure confidentiality of study participants. All personal identifiers were removed from transcripts and in quoted texts below. However, participants were informed that information shared in CCs is exposed to other participants and may be a limit to their overall confidentiality due to the inability to completely control the actions of others. Written informed consent was acquired from the elders before the commencement of the CCs.

## 4.4 Results

### 4.4.1 Characteristics of Study Participants

A total of 151 men and 7 women between the ages of 50 and 101 partook in the CCs. Most of the participants had a formal education at the primary, secondary, or post-secondary level. A few participants had no formal education in the past. In terms of occupation, the majority of the participants were either farmers or artisans. In terms of religious affiliation, the majority of the participants were Christians, while the rest did not belong to any religious affiliation.

### 4.4.2 Reasons for Underutilization of Formal Maternal Care

*Quality of care*- The elders mentioned various reasons related to the quality of care, perceived or actual, that contributed to the reduced uptake of facility-based care. A recurrently stated reason was understaffing in health facilities, and the corresponding inability of such facilities to meet the needs of their clientele. The lack of health professionals in PHCs and even some hospitals was a major deterrent. Several elders exclaimed that understaffing issues were the consequence of posted nurses and doctors skipping their work duties at the facility. The absence of nurses and doctors prevented community members from receiving skilled care from health professionals:

*"this is Nigeria, it is poorly equipped, even the so-called general hospital, I can't say it's a no go area, but we all know what happens there when you get there, it's either the doctor is absent or the nurses are absent" (CC 02, ETE, Male)*

*"may God keep you all, the health center that they said is here there is no nurse where three nurses are supposed to be on duty - it is only one nurse you will see, in a week you will not see them - if someone sustains any injury and is rushed there you will not see nurses unless you go to the next community which is Ewohimi or Ubiaja for treatment" (CC 08, ESE, Male)*

Elders expressed their frustrations with the perceived unprofessionalism of health professionals, including those who were absent from workplace duties. They criticized them for not seeming to take their jobs seriously, and instead carrying out personal tasks, such as shopping, during work hours:

*"the habit of absenteeism is very common among them let's say you ask a nurse to wait for you she will go to the market until the later hours before she comes back or until the next day. For example, there was a patient brought to the health center, there was no nurse to give treatment. The next thing was to take the person to the nearby chemist [collective laughter]" (*CC07, ESE, Male)

Some health professionals were said to display patient favouritism when deciding which patient to treat first. There were also accusations of financial status discrimination in which patients with higher wealth status and influence received more prompt treatment and attention than patients with lower wealth status. Some elders

accused nurses of not following protocol or fulfilling duties, including by making referrals of patients to their own homes and abandoning their facility duties during work hours:

*"It is not because of the charges, I have never seen anyone who comes back after good care and complains that the money is too much and tells other women not to go. The reasons are the nurses are not always on duty for their primary assignment, and even if they are there on duty they will take you to their home for treatment or they will refer you to a place where by the time you get there, it is the same person who referred you that you will meet there"* (CC 07, ESE, Male)

Some patients who were rushed to a health center due to an accident were said to have arrived at a facility with no nurse attendants. At the nurses' homes, even when drugs were not present or proper for the required treatment, referred patients were sometimes asked to pay regardless of treatment effectiveness. Accordingly, nurses were also accused of partaking in drug trafficking by taking facility drugs to their homes and selling them off to certain people. Many PHCs were further perceived to provide poor and inadequate care because of building erosion, poor sanitary conditions, bat infestations, lack of lighting, lack of boreholes and water, and lack of toilets. Poor health facility conditions were believed to contribute to issues with provider retention and resultant staff shortages. Bat infestations were a specific reason some nurses and midwives refused their postings in certain PHCs, according to a male elder:

*"I remember when they posted a nurse to this health center, she refused to go be posted, her reason is because there is a bat in the facility. The problem the bat brings is that it emits worms from its feces, it would be falling into their health center, so the nurse refused to go there when they transferred the other woman. She said her health is more important than any other thing, she said she does not know what the worms can do, and also the smell of the feces"* (CC 05, ESE, Male)

In contrast to health professionals, the constant availability of TBAs made them local favourites amongst service users, including those with the financial means to use a health facility. TBAs were non-health professional attendants who were often older female community members with experience in providing traditional care to mothers throughout the continuum of maternity. TBAs were able to provide traditional maternal care to women in the service users' homes or in traditional maternity centers. This type of care could range from providing advice and social support to pregnant women or new mothers, to assisting homebirths, to performing cultural rituals during any maternal period.

In addition to personnel shortages, some PHCs and hospitals were also thought to provide inadequate and improper maternal care due to shortages in medical equipment and drug supplies. Community members who wanted to receive facility-based care were sometimes forced to go to another PHC in order to buy drugs. Elders had skepticism as to whether this was due to drug supplies being diverted by health attendants for their own use or if the facilities were generally undersupplied. Long wait times in health facilities, which were caused by health professional shortages and overwhelming demand, encouraged some community members to seek and opt for traditional maternal care instead. Long waiting times in health facilities were a source of dissatisfaction

and another key factor in the low uptake of facility-based care. Conversely, traditional maternal care was associated with prompt, appropriate and attentive care.

Provider incompetence in providing care was voiced to be another stain on the quality of care in health facilities. Elders voiced that lack of skill and low capacity among providers was probably related to poor training by the management. Many elders were of the opinion that since nurses and doctors in health facilities were underqualified, they are not fully capable of providing high-quality maternal care to women. Additionally, nurses were perceived to lack knowledge of how to use new medical equipment:

*"we have a facility here, but we don't have good nurses and doctors who take care of our pregnant women. Though they are trying, we need to have more qualified people. Sometimes when you go there and they want to give an intravenous injection, they struggle to see the vein"* (CC05, ESE, Male)

*"all these things I mentioned, even the so called nurses were seeing them for the first time, so of what use is this plate to you, when you don't know how to use it(some individuals laugh). For example, the suction machine, the nurses there, I don't think they have ever used that equipment since it was brought there, there was another machine there, that is supposed to be use for, when checking sugar level, the nurses there I don't think they know how to use it"*(CC 02, ETE, Male)

Interpersonal relationships between patients and health professionals were key talking points in the CCs. Health facility staff, namely nurses, were alleged to be uncooperative and rude to their patients. After questioning the employment of a poorly mannered nurse, a male elder stated:

*"by the time she came, she started talking so mannerlessly that I don't know how she got her job so that is the more reason people don't patronize them as such. I witnessed a case where the nurse was telling the woman was I there when your husband impregnated you, did you not enjoy the sex, so if you can't pay the money I will not render you any services. This is what is currently happening in the state and everywhere, please you people should caution the health workers here"* (CC07, ESE, Male)

In contrast, the relatively positive relationships with TBAs or other informal attendants encouraged community members to seek out of facility care, irrespective of cost differentials. Traditional care-takers were deemed to be more hospitable, caring, and supportive, qualities that attracted some community members towards traditional care and pushed clients away from facility-based care.

*Accessibility*- In several communities without a local PHC, access to and utilization of facility-based care was significantly hindered, with the nearest PHCs being in other communities. The distance to a PHC was thereby a major physical deterrent to facility-based care. This was especially the case for those without a local PHC, who had to travel to neighbouring villages to access formal maternal care from a PHC. The absence of a local PHC was said to force some women to opt for traditional maternal care from local TBAs, who were often nearby and readily available. Long distances to a PHC, whether local or in another community, was believed to be the most significant barrier to women who experience emergencies, such as from premature labour and births,

and need to reach a facility as quickly as possible. One male elder explained:

*"Just like my brother said just now, if an obstetric emergency happens, it is not easy to rush the woman to the PHC for emergency maternal care. The situation here is that our source of maternal care is very far from here and we have no road to access the facility" (CC 03, ESE, Male)*

Some elders identified difficulties in finding the means and modes of transportation to a PHC and receiving professional assistance as a hindrance. Women who go into labour late at night or who require immediate emergency care were said to be most affected by transportation constraints. Others identified poor road infrastructure as a critical barrier to accessing health facilities. They stressed that even with a physically close PHC, existing poor road conditions would hinder their community from physically accessing the facility:

*"We don't have a clinic here, and for the available one in another community, we don't have the road infrastructure to even access it, this is causing us suffering" (*CC 09, ETE, Female)

The unaffordability of care was perceived to be another obstacle for those who wanted to receive skilled maternal care. The costs started at home where they would need to pay for transportation, such as a motorbike, to get from their residence to the health facility. At the facility, high costs of health services and equipment were said to restrain some community members from receiving maternal health services:

*"Yes the charges are too high because here when a woman gives birth to a male child, they charge 10,000, and when they give birth to a female child, it is 8,000 so it is high. That is why we decided not to go again, we don't have that amount to be spending, and since you people want to come to our aid we are so happy"* (CC 08, ESE, Male)

The elders pointed to proximity, transportation and affordability constraints as prominent barriers to service users that sought and intended to receive formal maternal care. However, many women preferred and opted for traditional treatment because it was perceived to be less risky than relying on facility-based care. Additionally, traditional treatment with the assistance of traditional attendants was cheaper, more convenient, and pragmatic.

*Lack of knowledge and awareness*- Fears of the repercussions of medical operations on a woman's health and well-being pushed some women to opt for traditional maternal care from traditional attendants, thinking that the avoidance of health facilities would help prevent complications and operations. Women were said to only register and visit a PHC when they felt weak, seeing the facility as a mere source of treatment for when problems arise. Some elders also believed that women lacked knowledge and understanding of family planning, including about where to receive family planning care before pregnancy or after childbirth. In relation to fertility, some women were said to set the fertility cap at whenever they felt weak or too tired to give birth to additional children. Others were said to follow traditional family planning in which they kept trying to

conceive with the belief that God would cap the number of children they are meant to bare. Elders contested that women who opted for such traditional care have limited knowledge, despite thinking they know a lot.

### 4.4.3 Perceived Reasons for Maternal Death

*Medical causes*- In the CCs, malaria was perceived to be one of the causes of maternal death during pregnancy. Pregnant women who were infected with malaria were alleged to be more challenging to treat than non-pregnant women who were infected with malaria. They explained that some drugs taken in the past for malaria by women in a non-pregnant state became dysfunctional when taken during pregnancy. Some elders believed that maternal mortality is caused by excess displaced blood in the pregnant woman's body.

*Facility service deficiencies*- In reference to women who undergo labour and require immediate medical care, PHCs that were not operational overnight were believed to contribute to their potential deaths. Women who needed to deliver had to opt for self-care at home or care near home from a non-professional attendant, namely a TBA. Others believed that inadequate drug supplies contributed to maternal sickness and possible death. The unavailability of drugs especially impacted the timely care of emergency obstetric situations.

*Traditional maternal care*- During pregnancy and childbirth, many women preferred and opted for traditional treatment with native herbs over medical intervention and professional assistance in a health facility. The death of some women who opted for traditional treatment led to beliefs that the utilization of traditional care over medical care was the major cause of maternal death. Traditional maternal care was associated with trial and error treatments, which made it undependable.

*Poor awareness and negligence*- For some elders, maternal death was ascribed to poor awareness of the significance of professional care during maternity and the seriousness of maternal health risks. Women's negligent disregard of health instructions was also associated with maternal death. Many purportedly opted to stay at home instead of going to a PHC for the recommended checkups, unless an abnormality occurred. Women were said to snub advice about family planning and physical work during the early trimesters, thereby increasing the burden on their bodies. Some women also used malaria nets for farming purposes instead of their original purpose in protecting against malaria infection and the associated ramifications for the mother and fetus. A man spoke about women who prefer traditional herbs:

*"Regarding the issue with the causes of death of pregnant women, it is because they do not follow instructions. Most of these women when they are pregnant, they don't like to use the hospital, because even though there are specialists there that are properly trained to take care of them, instead of going to the health center, they prefer to take traditional herbs"*
(CC 05, ESE, Male)

### 4.4.4 Proposed Solutions

*Improve access to adequate facility services*- The majority of the participants in communities with no local PHC recurrently proposed the need for a local PHC or a closer hospital. A local health center was perceived to mean faster access to skilled labour and delivery assistance, especially during emergency situations. It was also favourably associated with shorter distances and convenience, lower transportation fees, easier modes of transportation, and the capacity to serve surrounding communities. Ultimately, many elders in communities without a local PHC believed that a local PHC would increase access and use of health professionals, as well as reduce the number of maternal deaths:

*"if a health center can be built here, it will facilitate the whole issue for our women to meet with the health worker. This can also help because the one we have is situated at Eguare, if we can have a centralized one here it would help us to help our women and it will also make it possible for other nearby communities to make use of it because the one we currently have is far" (CC 01, ESE, Male)*

*"if a pregnant woman is in labor, if the woman is rushed to Ubiaja, the next village, before she gets there she may have lost strength and died. Also, to be rushed to the nearby health center just to go and deliver there is a whole other issue, please we need help in this our community" (CC 08, ESE, Male)*

In communities with easy access to a PHC or hospital, some elders stressed that facility conditions needed significant improvements in order to encourage facility uptake. The presence of a health facility alone was said to be insufficient by many participants who suggested increased availability of lighting, water supply, good equipment, and a variety of drugs for treatment in health facilities. To improve accessibility, several participants also recommended operational, round the clock PHCs or hospitals that would be open at all times. It was proposed that several health professionals be designated alternating shifts to operate a 24-hr functional health facility. For understaffed PHCs, scheduled provider visits were suggested where certain health professionals would be stationed at the local PHC on specific pre-determined dates:

*"if you know that a doctor is coming to the health center by Wednesday at least to attend to the pregnant women and children, you understand what am saying, then every woman and pregnant child will now know that doctor is coming today and they will acknowledge that they should not go to the farm on that day. They should be ready to go and see that doctor and present my case instead of going to the general hospital in Agenebode where we don't know if the doctor has travelled"* (CC 02, ETE, Male)

In areas where physical access to a destination was hindered by topographical barriers, some participants implored the desperate need for road repairs. One participant expressed how building a health center alone would not make it accessible:

*"You can see how easy it was when you were entering here. There is no road, people can hardly access it. Even if you build a health center here, is it not the road people will still have to pass? So if you help us repair the road, we will really appreciate it"* (CC03, ESE, Male)

Improvements in the technical and interpersonal quality of health professionals were recurrent suggestions. Participants principally asked for their health facilities to be staffed with qualified health facility staff that can provide adequate maternal care. Across communities, the poor quality of care from health professionals was believed to be related to poor training. In view of that, participants recommended training regimens to improve the quality of health facility staff, including training to improve referral capacities. Speaking about the nurses who struggled to use the suction machine, a participant spoke about training:

*"so what am saying in essence is that these nurses themselves who are supposed to be the ones helping us, they need help because to be trained, they need to be up to date with the recent equipments you have in the world today, they need to update themselves"* (CC 02, ETE, Male)

Participants also suggested inspections and audits of health professionals to assess whether they are doing their jobs and behaving properly. Consequential punishments were correspondingly suggested so that other health facility staff can learn their lesson:

*"set people up to monitor them, if they are not on duty, punish them. I think other health facility staff will learn their lesson. This happened among the teachers, but now other teachers have learnt their lesson, so if it can also happen in the health sector, they will also get their lesson"* (CC 07, ESE, Male)

Another recommendation was to help locals acquaint with the health facility staff so that they can know the people that are working in the facilities and how they function. This acquaintance was especially believed to help locals receive primary treatment from attendants who allegedly attended patients by order of favouritism. With frustration over attendants' prioritization of money before treatment, it was suggested that the patient's health, well-being and care should be attended to first before discussing money.

*Health promotion and education* – As a resolution for poor awareness of maternal health, participants across the two LGAs implored that community members, primarily women, be educated and enlightened. Some participants believed they needed lessons on the differences between facility-based care and traditional care, as well as the significance of professional attendance. Enlightening women of the necessity of professional care was believed to improve the uptake of health facility services and improve maternal outcomes:

*"the issue of family planning is for women and most women here have not heard of it, so what I think can be done is to create awareness for them to have better knowledge of it"* (CC 07, ESE, Male)

*"I think they should be enlightened, they should know that during pregnancy they are to register with the hospital, not to seat at home to enable the nurses to monitor the women and the baby till delivery day. If we continue like this the rate of death in mother and child will be reduced"* (CC 01, ESE, Male)

Regarding the educators, some participants proposed appointing community contact persons who would be lectured by health professionals, and thereafter relay the learned information to their community. A few

proposed that health professionals come directly to their community, where they would educate women on maternal health and how to reduce the likelihood of death. Some participants alternatively proposed educating men first so that they can spread knowledge and awareness to females at home, including on when to refer their wives or daughters to the health center. Elders also suggested community education on the proper use of health measures designed to protect women and their children from malaria. Accordingly, they indicated the need for education on the proper usage of malaria nets and fines for the continued misuse of malaria nets.

*Community support*- Several proposals were made involving community support as solutions for improving the ability to receive services from health facilities. Community insurance plans involving gradual payments by community members were mostly discussed and recommended, with an insurance provider, such as a trusted intermediary, managing the contributions. Others discussed and endorsed co-sharing in which community members would loan money to others, particularly to those in urgent need of evidence-based maternal care. When needed, the insurance provider or money loaners would partially or fully pay for maternal services and improve the immediate financial accessibility of facility-based care. A few male elders also proposed that men be active and involved in health-seeking to make sure women have professional care at a facility. Elders in communities without a local PHC discussed the need for land for the construction of a local PHC. Some participants proposed to find and decide on land they would be willing to give up for the construction of a local PHC. In one community, participants proposed to provide a vacant building in their community for free so that it can be restructured into a PHC. Finally, they proposed that community members would be willing to provide hands-on assistance to builders of local PHCs:

> *"We have land here in this community that we can give to you to build the facility and we the community members will also join hands with you to build the structure in unity, because when two rats join tails together, it will be as thick as that of the rabbit (parable). We will join hands together to make sure that you are able to do the project, that is the joy of our community."* (CC 04, ESE, Male)

In communities with local PHCs, some participants proposed that community members would assist in maintaining the physical conditions of the facility. For example, in the PHC where bats were creating issues in provider retention, community members were willing to spray chemicals to rid of the bats.

*God's assistance*- Some elders believed that God would help women throughout pregnancy and childbirth. They also expressed that God would provide power, guidance, and assistance to health professionals and researchers to help community members. A few elders claimed that God was the main solution for preventing maternal deaths. One female participant alluded to her belief that health and healing were up to God regardless of the presence of a health facility:

*"even if someone resides in a cave, our God will still raise a helper who will locate that person inside the cave… it's only God that is helping women in this community. God should create a way for you people to help them in this community"* (CC 09, ETE, Female)

## 4.5 Discussion

### 4.5.1 Key Findings and Relation to the Literature

The study has explored and provided insight into community elders' perceptions about reasons for the underutilization of facility-based maternal care and reasons for maternal deaths in rural Edo State. The results demonstrate that elders perceive a wide range of factors that contribute to maternal deaths and low utilization rates of facility-based maternal care.

The perceived reasons for maternal deaths were related to medical factors, supply shortages, inoperative facility services, uptake of traditional care over formal care, and poor awareness and negligence of maternal requirements and risks. Previous studies on perceptions of reasons for maternal death also identified medical and nonmedical causes believed to lead to the outcome [74, 157, 269, 270]. Study results indicate that elders held narrow perspectives of potential medical reasons for maternal mortality; there were discussions on displaced maternal blood and malaria, but no mentions of other major medical factors in Nigeria, including other infectious or transmissible diseases, sepsis, obstructed labour, and unsafe abortions [53, 56]. Studies in rural and urban Nigeria reported that policymakers, elders and other community members perceived malaria or fever as the most common medical ailments leading to maternal death [157, 271]. Policymakers and male partners in sub-Saharan Africa believed excessive bleeding was the most common direct cause of women's maternal death [271, 272], which is similar to narratives about bleeding in this study. Non-medical reasons identified by elders in this study include unavailability of facility services, and poor awareness and negligence. These reasons are related to non-medical determinants of maternal deaths identified in the literature, including social, economic, and cultural factors [105, 157, 271, 273-275], as well as political factors, healthcare system coordination, health services provision, community contexts, and demographic characteristics [271, 276]. Delays in reaching health facilities, delays in receiving care, and poorly skilled health attendants were also held responsible for high maternal mortality rates [272, 275, 277]. A cross-sectional study in Nigeria reported that men blame women's failure to use FP, emergency, antenatal, and delivery care services for their deaths [275]. This resonates with narratives from many male elders who mostly pinned maternal deaths on women due to their lack of knowledge and negligence. Additionally, elders cited women's uptake of traditional maternal care over facility-based care as a reason for maternal mortality in Edo State. The uptake of traditional

maternal care has been strongly associated with higher rates of maternal mortality and other poor maternal outcomes [14, 271, 272]. Non-professional attendants, namely TBAs, lack the basic knowledge and skills required for the adequate provision of evidence-based maternal care [70, 156]. Additionally, TBAs cannot manage obstetric complications, increasing the risk of poor maternal outcomes. On the other hand, the use of evidence-based and professionally assisted care reduces the likelihood of poor maternal outcomes [14]. Rural women in Northern Africa believed lack of maternal health awareness was a cause of maternal mortality [102], which corroborates the accounts given by elders in this study.

Elders voiced that women did not utilize facility-based healthcare services for a variety of reasons. Firstly, many were hindered by the unavailability of a local health center, health professionals, adequate facility infrastructure and conditions, transportation to facilities, and drug and equipment supplies. These findings are consistent with previous findings across rural Nigeria [135, 278, 279] and other rural African settings [85, 96, 106, 113, 122], from research that identified availability as a critical deterrent to using facility-based services. In contrast to PHCs and hospitals, traditional maternity centers and traditional attendants, as well as self-care in one's own home, were more readily available options and thereby more accessible than facility-based care. Poor technical abilities, poor communication with impersonal health facility staff, and unprofessional acts from health facility staff contributed to the perceived low quality of care in health facilities, which is a deterrent to facility-based care, as seen in other rural settings [79, 81, 96, 278-281]. Similar to study findings, a study in rural Tanzania found that corruption among health facility staff was rampant, with attendants asking for bribes in order to provide optimal care, and threatening to provide suboptimal care for those who did not offer any bribes [113]. Poor road infrastructure, long distances to facilities, and high costs of transportation and health services are major deterrents to the use of maternal healthcare services [74, 79, 81, 106, 135, 157, 279-283]. This is corroborated by findings in this study in which elders pointed to geographic and financial constraints to health facilities as critical contributors to the non-utilization of health facilities. Although it was not identified as a factor in this study, the lack of payment options and the requirement of payments before treatment have been found to drive service users away from facilities and towards TBAs [197, 284]. TBAs desirably enabled non-monetary methods of payment and provided flexible time frames for repayment, unlike health facilities. The elders also perceived poor community knowledge and understanding of basic maternal health requirements to influence the choice to opt for traditional maternal care. In the literature, poor education of women, partners and household leaders about reproductive health and care-seeking was identified as a major deterrent to the uptake of facility care services [67, 112, 122, 130, 224, 236, 280, 285-291]. Moreover, systematic reviews exploring barriers to the access and use of facility-based obstetric care in sub-Saharan Africa found that lack of information on healthcare services and providers among community members contributed to poor knowledge and awareness, and thereby the reduced uptake of formal maternal care [7,

292]. Other findings from the reviews, however, were not reported to be barriers to facility-based care by elders in ESE and ETE: young age; unmarried or single; previous uncomplicated pregnancies and births; cultural beliefs and practices; pre-occupation with household and sustenance duties; social stigma; lack of women's autonomy; poor male involvement [7, 292]. Contrary to perceived reasons for underuse and death in the study, in some rural communities, utilization rates remained low despite high awareness and knowledge of maternal healthcare in the community [86, 293]. The implication is that there are often multiple factors that shape health-seeking behaviours and utilization patterns. The priorities or ranking of the significance of deterrent factors can vary between community members, suggesting that resolutions and strategies must address multiple barriers to facility-based care.

To improve formal healthcare utilization and reduce maternal mortality, elders recommended several changes to, and solutions in, facility-based care. The first set of recommendations were to improve healthcare provision by building local PHCs, improving infrastructure in and leading to the facility, replenishing supplies of drugs and equipment, competency training for health providers, scheduled provider visits, extended facility hours, provider audits and corresponding consequences, and alleviation of financial costs. These suggestions generally reinforce strategies recently identified in prior research for improving primary health care services provision and use in rural Nigeria [143, 294]. Elders suggested practical assistance from community members, the provision of community land and general community support. Evidence on community engagement and involvement has identified the key role communities can play in improving the quality of care and the use of skilled care, as well as reducing maternal mortality across rural Africa [143, 294-296]. Elders also recommended community-based insurance and co-sharing as a part of community support in order to help a member finance immediate maternal care needs. National and community-based insurance schemes have been widely proposed and successfully implemented across the developing world [41]. Moreover, the schemes have helped reduce the financial constraints of maternal health services and helped reduce maternal mortality. Health promotion and education were recommended to remove misconceptions and improve community awareness, knowledge and understanding of available services, risks and danger signs, and the significance of seeking professional attendance. In addition to external educators, elders proposed that reliable contact persons within the community relay promotive messages. Contact persons are intermediary stakeholders that have been suggested in previous research [297].

As stakeholders with the potential to influence women's health-seeking behaviours, elders' perceptions can play a vital role in facilitating the uptake of facility-based care throughout the continuum of maternity, from family planning and antenatal care to postnatal care. Perceptions of other potential stakeholders who may influence or be influenced by maternal health actions, such as men, TBAs, healthcare providers, and women,

can vary in each context based on existing challenges and needs, available resources, individual socio-cultural status, and values [130, 298]. For instance, the major factor of poor care quality in this study can be directly experienced by service users, relatives, and care providers. Across sub-Saharan Africa, poor quality of care due to drug and equipment shortages, understaffing, or poor infrastructure was perceived to be a major deterrent by women, husbands and male partners, and healthcare professionals alike [105, 113, 284, 299, 300]. Lack of local health facilities is another factor that can be experienced and identified as a significant barrier by multiple stakeholders in a rural community in sub-Saharan Africa [284, 292, 300]. From the unique perspective of health professionals, issues from delays and overcrowding are often worsened by the lack of an appointment system and the random arrivals of women for maternal care in their health facilities [300]. On the other hand, health professionals are unlikely to identify their own behaviours and attitudes as reasons for the reduced uptake of their services. From the perspective of community members, including women, elders, and TBAs, negative facility attendant attitudes and behaviour, as well as hostile facility environments, are viewed as strong deterrents to high-quality care and uptake of facility-based services [284, 300, 301]. Accessibility related issues that arise from proximity and inconvenience, costs of services and transportation, and unavailability of suitable transportation options to health facilities are also often identified as barriers by service users, relatives, and the TBAs who offer the more convenient and prompt traditional care [81, 285, 300, 301]. Although this study was conducted in communities that possessed traditional-age based hierarchies, the predominantly male elder participants did not identify elders or male partners and relatives as sociocultural deterrents to women's use of facility-based maternal services. In fact, elders' discussions about individual and community level factors in the underuse of facility-based services and reasons for death mostly focused on the women. From the perspectives of women, lack of decision-making power and influence from relatives, husbands, elders, and other community members have been vastly identified as barriers to accessing skilled care [81, 130, 301-306].

#### 4.5.2 Strengths and Limitations

This study included influential rural community members whose perceptions of maternal healthcare utilization and maternal death help to highlight community challenges and needs for adequate maternal care. The rich descriptions of their perceptions help to fill a gap in the research evidence. Another strength was the incorporation of rural community elders' views, beliefs, and suggestions, which is significant for the development of locally appropriate and acceptable programs aiming to improve healthcare utilization and reduce maternal mortality. Involvement of locals as field researchers and facilitators vitally helped to assuage concerns about dialectal, political, cultural or religious conflicts that may have ascended during the formative data collection. Though the primary author was not involved in data collection, the 2nd and 3rd authors were

co-investigators of the larger research project and, along with the corresponding author, are well acquainted with the field of maternal health in rural Nigeria.

Findings from this study should be interpreted in light of several limitations. First, community chiefs were actively involved in the sampling of community elders who were believed to be influential opinion leaders. This could have introduced selection bias based on their personal preferences or interests, which could limit the dependability and authenticity of the data gathered from the CCs. Second, the study was not designed to assess differences across sociodemographic characteristics and thereby could not identify variations in perceptions by group characteristics. Third, even though the project aimed to capture a variety of perspectives from various elders, the results from 9 study communities in Edo State cannot be said to be transferable to all rural Nigerian settings nor to rural settings abroad. Every community will have different contexts, different existing resources and realities, and varying priorities when it comes to needs for improving healthcare utilization. Fourth, there were disproportionately more male than female participants in this study, as the larger project primarily targeted elderly men and thereby did not gather equal proportions of male and female elders. Influential elders identified by community chiefs and gatekeepers were also predominantly men, indicating that there are more male than female opinion leaders with influence in rural communities in Edo State. Therefore, represented perceptions may have been altered if more women were represented in the study, as they have more direct experiences with maternity. Fifth, some of the CCs were conducted in local languages (Ishan and Etsako) and later transcribed into English for analysis, which may have resulted in the loss of subtleties in language and nuances in meaning during the process. Future research that conducts analysis in local languages may identify different meanings in responses. Lastly, there was potential for recall bias when participants spoke of past experiences with maternal healthcare.

### 4.6 Conclusions

Understanding the perceptions and beliefs of elders regarding maternal health services utilization is important for identifying ways to improve the provision of care and the use of care, along with combating high maternal mortality rates. The findings of this formative study will help us to refine existing interventions and to design new additional interventions that will be most acceptable and responsive to the identified challenges and needs in ESE and ETE. This study also contributes to the minimal existing body of evidence on elders' perceptions about the underutilization of facility-based maternal care and maternal death in the literature. It augments this limited literature by providing a rich description of elders' perceived reasons for facility-based maternal care uptake and maternal deaths. Congruently, this study confirms care quality, accessibility, and

knowledge related deterrents to evidence-based care, as identified by various stakeholders throughout the developing world. The numerous reasons that elders believed to have contributed to poor utilization of maternal health facilities and consequential maternal deaths illuminated the various challenges communities can face in the fight to improve maternal health outcomes. The use of CCs to enable elders to form resolutions for community-wide challenges is a unique form of data gathering that has helped to elicit potentially helpful and locally acceptable solutions. Considering the many unique realities in this study, the findings indicate that interventions must target improvements to the availability of quality care, ease of physical and financial access, community awareness and knowledge, and active engagement of community members. Suggestions for community support in financing the use of facility-based services and building health facilities are indicative of the willingness some underserved communities may have to increase the uptake of facility-based services. Additionally, suggestions to improve access to facility-based care and to provide health promotion and educational seminars highlight the multifaceted requirements of interventions aiming to increase the use of formal care and combat maternal mortality across rural Nigeria. If successful, there is potential for scaling the local interventions to other sites and for policy transformation.

# CHAPTER 5: INTEGRATED DISCUSSION AND CONCLUSIONS

## 5.1 Significance of Results

Across rural Africa, women opt for traditional, non-evidence-based care providers, increasing their risk of mortality throughout the continuum of maternity. Both papers implicate that there are multiple enabling and deterring factors that shape maternal healthcare choices and utilization patterns. They also implicate that these factors can interact with one another to further compound the hindrances women face daily in accessing evidence-based maternal care. The priorities or ranking of the significance of deterrent factors can vary between community members, further suggesting that resolutions and strategies must address multiple barriers to facility-based care. These implications all point to the significance of rigorous formative research and needs assessments for identifying local perceptions, preferences and needs, which in turn help to inform the development of locally effective maternal health initiatives.

Paper 1 illustrates that women's preferences can strongly contribute to health-seeking behaviours, choices, and utilization patterns of both traditional and formal care providers. This has vital implications for policies and interventions aiming to increase uptake of facility-based care across rural Africa. The contextual differences across settings, including differences in preferences between specific groups of women in the same study community, signify the complexity of translating findings into policy and interventions. For example, women who prefer health facilities and HCPs as their source of care can be receptive to different and specific contextual initiatives based on their values and needs. Likewise, women who prefer traditional sources of care will be receptive to different and specific contextual initiatives. This is suggestive of the necessity of considering specific needs and expectations at the individual, household, and community levels to improve the access and quality of formal maternal healthcare services.

Many women prefer formal ANC during antepartum, but the timing and frequency were not always frequent, with many women wanting to make their first, and sometimes only, ANC visit in the 2nd trimester or later. As a result, many women prefer a risky combination of traditional and formal ANC, which means they fail to receive the necessary pregnancy care checkups women typically receive in the minimum 4 ANC visits. These findings suggest a possible short-term need to reorganize the provision of ANC services depending on the timing of the first ANC visit. Moreover, health workers may need to make the most of the limited number of visits some women may book, including counselling on the significance of making at least four timely ANC visits to quell misconceptions about timing and frequency. Incentivized clinic attendance cards required for formal childbirth care encouraged clinical ANC attendance (paper 1), which is indicative of the potential effectiveness of incentives. Preferences for childbirth vary considerably between communities and individuals, while traditional

PNC is predominantly preferred, mostly for sociocultural reasons. Explained below are the significance of the preferences and the contributing factors during intrapartum and postpartum.

The findings from paper 2 signify the wide range of factors that elders perceive to contribute to maternal deaths and low utilization rates of facility-based maternal care. These findings help to reduce uncertainties about existing individual and community perceptions, beliefs, realities and needs regarding uptake of formal health services. The findings of this study help to inform program implementers of the original project on the tailored design of interventions that will be most acceptable and responsive to the felt needs of ESE and ETE. These interventions can significantly reduce sociodemographic, sociocultural, and socioeconomic barriers, as well as some restrictive personal beliefs to formal maternal services utilization. Use of evidence-based maternity care can then improve and thus contribute to the reduction of maternal and perinatal mortality across Nigeria, and then obtain policy traction by helping to create further awareness of the issue to policymakers.

Poor quality of care, including facility unavailability, poor facility infrastructure, shortage or absence of human and material resources, technical incompetence of health attendants, and the poor interpersonal abilities of health attendants, is a predominant reason why women prefer traditional maternal care and what elders mostly believed led to the underutilization of formal maternal care. These findings are suggestive of the priority and importance of high-quality care for the acceptance and uptake of facility-based care among service users. Moreover, with the impact of women's personal experiences and others' past experiences, including community spread myths, on preferences, perceptions, and intentions to use a provider in the future, it is crucial to increase the quality and allure of formal care services. The unavailability of local health centres creates issues related to physical inaccessibility and encourages some service users, or forces some service users, to opt for the available services, such as TBA care in traditional maternity centers or self-care at home. This is reinforced by health workers in rural Tanzania who expressed that it is difficult to respect women's preferences and to provide high-quality care due to the inadequate availability of material and human resources [307]. Poor working conditions, lack of empowerment and lack of resources contributed to the lack of health attendant motivation and abilities to fulfill their care obligations, which in turn contribute to the provision of poor care.

Issues pertaining to poor facility infrastructure and conditions, attendant shortages and absenteeism, as well as equipment and drug supply shortages, can all hinder women from adequate facility-based care, even if they opt for it and successfully reach the facility. Lack of resources can also negatively affect the ability and motivation of healthcare attendants to meet their obligations and provide adequate maternal care, which in turn damage perceptions about healthcare attendants among community members. These findings indicate

that the availability of local facilities and adequate human resources and supplies will help improve the provision and accessibility of quality health services. Issues with corruption, professional integrity, and accountability highlight the poor management of health facility attendants and the lack of transparency in maternal care provision. Findings from both papers suggest that audits are required to ensure the ethical provision of high-quality care as defined in standards and principles of evidence-based care. Both papers and the literature highlight the weight and significance of communication and relationships between service providers and users, with the poor and harsh health attendant attitudes, behaviours and treatments of women frequently voiced across rural Africa. Poor communication skills and impersonal health attendants produce a negative environment and experience for women, while traditional attendants get praise for being hospitable. Many women who prefer and seek traditional care thereby associate traditional care with a positive environment. Poor interpersonal care essentially limits acceptability. As the link between the health system and the community, these findings reflect the impact and significance of attendant-service user communications on user perceptions of formal maternal care. Positive, respectful and supportive environments are thereby crucial traits that must be associated with formal healthcare settings.

Findings regarding the deterrent effects of misinformation, lack of knowledge, and lack of awareness on the use of formal maternal care highlight the necessity of maternal health promotion and education. The 16 studies in paper 1 that reported a recurrent perception of formal care providers as mere last resorts for when pregnancy, childbirth and puerperal complications arise exemplify this need. Sole mentions of blood displacement and malaria indicate that elders have minimal knowledge and awareness of the various direct causes of maternal mortality (paper 2). Poor understanding and misconceptions about available services, health facility procedures (e.g. operations), risks and danger signs, and the significance of regular skilled maternal care attract service users to traditional maternal care. Promoting, informing, and educating women about the significance of timely and frequent clinical ANC, facility-based childbirth, and clinical PNC is thereby a major need for increasing uptake of facility-based care and reducing the uptake of traditional maternal care across rural Africa. Considering that lack of knowledge can affect both service users and the community members that influence their decisions, individual and community level education is required to raise awareness and understanding of the significance of formal care in ensuring positive maternal outcomes. While paper 1 identified greater trust in CBAs as a contributing factor for preferences of traditional care, paper 2 also identified trust as a critical factor in the success or failure of the conveyance of health education messages. Health education delivered to individuals and communities by trusted and reliable community contact persons rather than external educators (i.e. strangers) is vital to facilitate positive actions towards maternal healthcare uptake.

Paper 1 highlighted that some women's preferences for traditional care were influenced by personal comfort, suggesting that health facilities must attempt to accommodate user comfort, such as favoured birthing positions, in order to increase the allure and uptake of formal care. Currently, across rural Africa, the extensive familiarity, trust, and comfort with traditional providers is a complicated obstruction that will continue to provide women with alternative traditional options parallel to formal care.

In terms of inaccessibility, several physical factors related to distance, transportation and road infrastructure, as well as financial factors related to transportation costs and health service costs, deter women from accessing and using facility-based services. These findings suggest that improving the accessibility and uptake of facility-based care requires improvements in the geographic availability and accessibility of health facilities. Improving the affordability of transportation to the health facility and the affordability of health services, including necessary supplies, is an area that could increase the financial accessibility of formal maternal care. Criticisms of the inflexibility of payment time frames in health facilities indicate that women require more flexible repayment time frames to encourage facility-based maternal care. Concerns about social responsibilities, social image and social status are deterrent factors for the social accessibility of formal care. While concerns about social responsibilities, such as the childrearing tasks of a housewife, are often at the household level, concerns about poor social image and a damaged status, such as perceptions that women who receive skilled childbirth assistance are feeble, are rooted in the community level. Therefore, to mitigate the various social restraints that contribute to the social inaccessibility of maternal care, planners would have to address these restraints at the individual, household, and community level at large.

Review findings regarding the unacceptability of formal care due to cultural and religious factors suggest that the amalgamation of TBAs and other CBAs with the healthcare system can sway some women who originally prefer traditional care towards formal maternal care. In addition to the deterrents of formal care, the review implies that many women who prefer out of facility care are reacting to the pull of traditional care in their premises due to structural restraints and sensitivity to cultural or religious obligations. Therefore, a collaboration between formal and traditional providers in the interim may be a path to consider. Nevertheless, the review illuminates the complexity of attempting to address strongly ingrained cultural and religious beliefs and practices, and thereby the complexity of amalgamating formal and traditional care. So, even though the findings are suggestive of the significance of ensuring the proper provision of culturally and religiously sensitive maternal care services, there are some cultural and religious beliefs and practices expressed in the review that could directly clash with the proper provision of care in a facility setting.

Relatives and community members, such as elders, may have a significant influence on women's supposed preferences and decisions regarding the use of specific maternal care services. However, despite being

identified as opinion leaders and local influencers by their community leader and other elders, elders in paper 2 did not identify any inhibitory sociocultural roles that elders or men, in general, may be playing in women's use of facility-based services. This reflects the male elders' recurrent placement of the blame for underutilization and high mortality on the women throughout the CCs. These findings generally implicate that improving the allure of formal maternal care to women who prefer traditional care can variably require more than improvements to the quality of formal health care provision. For example, formative studies that aim to inform interventional efforts promoting the uptake of formal maternal care in communities with traditional age-based hierarchies need to triangulate with elders and other opinion leaders. Elders across rural Edo State suggested their community's willingness to practically assist in the construction of health centres. The involvement of elders in the formative and intervention implementation stages can be vital for the local acceptance of efforts promoting the uptake of facility-based care and thereby vital for reducing the likelihood of maternal mortality.

Lastly, thesis findings suggest that one-size-fits-all policies and interventions would be inadequate in addressing deterrents to rural facility-based care utilization. It is rather specific initiatives and strategies based on the local contexts and realities, including existing resources, challenges and needs, that are required.

### 5.2 Limitations

Coverage of preferences for maternal care providers during antepartum and postpartum were limited relative to findings on preferences during intrapartum. Although the data on antenatal preferences were rich, the limited findings on postnatal preferences limit the overall confidence in the reported PNC preferences and influential factors. Various restraints and barriers to maternal care providers could have reduced the sincerity and authenticity of women's expressed preferences. Therefore, barriers such as inaccessible road networks or lack of decision-making power in the household could have confounded the expressed and reported preferences. Concurrently, it is also important to iterate that preferences for formal care do not always translate to the utilization of formal care due to the presence of various deterrents to facility-based care.

The involvement of community leaders in the sampling process of elderly opinion leaders limits the dependability and authenticity of the data, and thereby the rigour of the study reported in paper 2. The lack of female opinion leaders in the study communities in ESE and ETE reduces the credibility of elders' perceptions, especially considering there is strong evidence of influential elderly grandmothers in other rural communities. Study settings can have contextual differences with other rural areas across Nigeria pertaining to diverse existing resources, challenges, and health needs. This limit to the transferability of findings on elders'

perspectives to other Nigerian or rural sub-Sahara African contexts further limits the rigour of the primary qualitative study.

### 5.3 Recommendations for Policymakers and Designers of Interventions

Findings from both papers call for more holistic, multi-faceted approaches across rural Africa in order to overcome context-specific restraints and design interventions to improve the utilization of evidence-based maternal care [1]. The series of interventions must be tailored, integrated, and implemented at the individual and household level, as well as the community level, to account for community contexts and produce successful and lasting changes in utilization patterns and mortality rates.

Improving access to and quality of health systems needs to start at the governmental level with political commitment and adequate budgetary allocation into the ready availability and provision of high-quality facility-based services. This could entail investments into the construction of local primary health centres, refurbishment and upgrade of existing health center infrastructures, replenishing drug and equipment supplies, and competence and interpersonal skills training of HCPs. Issues with regular staff absenteeism, high turnover, and unaccountability in paper 2 highlight the poor management of health facility staff and the lack of transparency in care provision. Therefore, strategies that target attendant recruitment, retention, and accountability and adherence to protocol and workplace duties are direly required. The creation of a comprehensive rural health attendant supply and retention strategy that involves coordination between several sectors and stakeholders in rural African health development can help to address health attendant shortages [308]. This strategy could be coupled with the provision of incentives to health workers who accept and remain in their rural postings. Periodic audits of PHCs and health facility staff can help to ensure the proper and ethical provision of high-quality care from health facility staff. However, some health facilities that have an adequate supply of health attendants can struggle to provide adequate care if there are material shortages. Health attendants would be better able to provide high-quality maternal care in conducive working environments in health facilities with adequate equipment and drug supplies, as well as reliable referral systems.

Health facilities and HCPs can gain the trust and acceptance of service users who prefer and utilize traditional care by employing a patient-centred care approach and prioritizing patient needs. Creating a positive, supportive and accommodating environment in health facility units that consider the needs of women is a recommended strategic measure to encourage the uptake of evidence-based services. Accordingly, HCPs must be made aware of the considerable impact that abusive attitudes and behaviours have on the appeal of facility-

based maternal care services. HCPs should receive training regimens that target attitude and behavioural changes to create more positive, caring, respectful and hospitable environments in facilities. In conjunction with such training on improved interpersonal relationships with service users, health professionals, in turn, need to be shown and offered adequate support by the health system. This will increase the chances of establishing positive, respectful and hospitable environments in health facilities and improve the interpersonal relationships between service providers and service users.

It is also imperative that communities are made aware of the necessity of evidence-based care and risks of traditional care through community-based programs, such as health promotion and education programs. The association of maternal education with access and use of skilled maternity care is reportedly positive [309]. Accordingly, health promotion and education programs that inform rural community members about required maternal health practices can improve knowledge and awareness of maternal health risks, birth preparedness, danger signs, and significance of evidence-based care for positive maternal and neonatal outcomes. Such programs could help women who prefer traditional childbirth care and PNC because of misconceptions or lack of knowledge and awareness about formal care. It can also be crucial for populations that view formal care facilities as treatment centers or last resorts - only when complications arise. Formal care needs to be established as the first line of care regardless of the perceived normalcy. A common concern amongst community elders in the primary qualitative study communities is the significance of trusted intermediaries for encouraging community-wide participation. Therefore, for trustworthiness, comfort, and to ensure acceptability of health promotion sessions, trusted community members should be considered to help implement health promotion and education programs.

Prior interventional efforts that exposed locals to reproductive and maternal health information through the mass media on television, radio, or print have successfully helped to increase knowledge and awareness and inspired positive behaviours towards the use of formal care [47, 310]. With the extensive infiltration of technology in this technological age, it would be remiss not to recommend implementing or improving digitalized mobile health in some rural communities. Digital health, such as through mobile phones, has proven to be revolutionary in the past decade in improving uptake of evidence-based maternal care in Africa [311-316]. With the highest rate of growth in mobile subscriptions in the last decade, the use of mobile phones in African countries has practically become a part of daily living [317]. Though the rapidly growing use of mobile phones has recently transcended urban-rural divides in Nigeria and across Africa [318-320], increasing mobile phone ownership and closing the digital divide should be an aim for interventional efforts in the more isolated, remote communities with no access to phones or mobile networks. Service users and other community members could receive health promotion and educational messages from mobile applications in order to

tackle misconceptions, improve understanding of the significance of skilled care, and ultimately promote positive reproductive health behaviours. A wide range of methods, such as voice messages in local dialects and pictographs, could relay the information to illiterate users. Mobile applications could also crucially provide educational messages and training interventions to healthcare providers in order to improve their technical and interpersonal competence. Installation of mobile-enabled digital communication platforms between users and the health system could help to mitigate distance and transportation-related barriers. Such platforms could momentously connect women experiencing emergency obstetric complications to ambulances or mobile health providers.

New or existing interventions should help to remove or mitigate physical and economic barriers in order to help women physically and financially access health facility services. In rural regions with geographical restraints, governments should attempt to make health facilities with skilled personnel as near as possible. This could include building local health centers, mobile maternal care services, or maternity waiting homes to help reduce distance barriers. Establishment of maternity waiting homes near primary care facilities and hospitals can have positive effects on reducing physical barriers and improving maternal outcomes across Africa [321, 322]. Developing the road infrastructure leading to health centers and general hospitals could help to improve the uptake of facility-based services in communities with topographical barriers. Organizing transportation support schemes involving vehicles, taxi services, or motorcycle ambulances devoted to maternity care could help reduce transportation barriers.

Considering the deterrent effect of costs on user preferences and uptake of formal care, subsidized programs that remove user fees and finance schemes, such as the establishment of community loan funds, should be designed to ensure that costs of formal maternal health services are manageable. Developing national or community-based finance schemes could be vital for reducing financial constraints, especially in communities that are willing to take part in insurance and loan schemes. An alternative recommendation is to provide free maternal health services or subsidized services based on income to ensure the affordability of accessing and receiving evidence-based maternal care. This may require healthcare reforms that address the lack of financial risk protection for the underprivileged populations through the provision of state-mandated health insurance coverage or enrollment into private health insurance plans which the state government would fully cover [323]. Those who face significant obstacles in physically attending a health facility could benefit from home visits by HCPs. Alternatively, scheduled provider visits to health centres or hospitals could help to mitigate staff shortages and encourage user uptake of services on scheduled dates. Traditional care at or near home can sometimes be the only option in communities where social accessibility, such as household tasks, significantly hinders the access to, and utilization of, health facilities. Home visits throughout the maternal periods from

accredited HCPs, particularly if based in the community, could serve as a solution to this problem and help women receive evidence-based care [324].

Considering the influence of relatives and community elders on choices of maternal care sources, local decision-makers at the household and community levels should be involved and given a role in the design and implementation of local maternal health interventions. By actively involving influential stakeholders from the formative to the implementation stages of community-based interventions, chances of acceptability and buy-in of the interventional efforts will increase. This resonates with the elders' accounts of the significance of trusted individuals in facilitating positive actions towards maternal healthcare uptake. Interventional efforts based merely on the exploration of constructs such as preferences and perceptions of service users may not be accepted or effective in communities where others considerably influence women's health-seeking decisions. Likewise, overlooking and failing to acknowledge influential community members in the design and implementation of policy and interventions would reduce the likelihood of the interventions' acceptance and effectiveness, especially in communities with traditional age-based or gender-based hierarchies. Community members that shape health-seeking behaviours and patterns in their community and household can help in increasing understanding and alteration of social norms that underly the stigmatization of women using formal care. Therefore, perspectives about maternal healthcare needs and utilization patterns among influential community stakeholders should inform the formulation of policies.

In some areas where norms and traditional practices are deeply rooted and unlikely to undergo a modern shift, training and integrating traditional into attendants to the health system, possibly under the supervision of accredited HCPs, could enhance their skills and competence in providing maternal health services in the interim, while smoothening user transition from traditional care to formal care. Such a method has proven to be successful in Laos, where traditional birth norms experienced in the health facility motivated women to seek formal maternal care in the future [325]. CBAs, namely TBAs, should also be given a strategic role in early referrals, dismissing misconceptions about formal maternal health services, and encouraging social change in the utilization of formal maternal health services. This could see TBAs take on roles akin to those of health extension workers that link women to the healthcare system. Moreover, initiatives attempting to create more culturally and religiously sensitive maternal services should consider permitting acts that pose no danger to the women or their child; for example, this could include permitting women to take their placenta home or allowing family members to accompany labouring mothers into the labour ward to remove negative feelings that can arise from unfamiliarity or loneliness.

Considering preferences for late initiation of clinical ANC and infrequent visits, interventional efforts should encourage early uptake of ANC and at least four visits. Alternatively, interventions could provide

comprehensive ANC to women, such as screens and physical checkups, as well as promote institutional deliveries and positive nutritional behaviours, during the few visits some women may only make [326]. Maternal health initiatives should also promote and increase awareness of clinical PNC visits based on an established post-birth follow-up protocol in order to increase formal PNC attendance and prevent maternal and neonatal complications.

The combat against underutilization and maternal mortality involves a range of stakeholders from the international and national level to the local level: international development agencies, health ministers, finance ministers, transportation ministers, education ministers, policymakers and decision-makers, local investigators, academic researchers, health professionals, traditional attendants (who refer patients to facilities) and service users, as well as other community members. It is vital for government sects and research groups to be coordinated about their projects and initiatives aiming to address underutilization of facility-based care and poor maternal outcomes. Otherwise, past errors that resulted from poor coordination and collaboration will reoccur and reduce the likelihood of sustainable interventional success and policy transformation.

### 5.4 Recommendations for Researchers and Future Studies

Future reviews could explore maternal care preferences with another qualitative synthesis method, such as the meta-ethnography, in order to triangulate primary research findings with ordered constructs. This topic could also benefit from the deeper levels of interpretation enabled by the more constructivist qualitative evidence synthesis methods, such as the meta-narrative. Future studies should also examine preferences and contributing factors of maternal care from quantitative studies, including discrete choice experiments. There is currently not enough evidence on preferences for types of maternal care and services provision. Future studies should especially explore the preferences, challenges and priority needs of rural women to attend clinics for PNC. To consider perceptions of influential community members that may have a strong influence on women's decision-making power, future research should triangulate findings on preferences from women with other community members, including TBAs, husbands, and community chiefs. Future research should also triangulate findings from elders with other community members to gather perspectives from participants with a wide range of experiences, realities and social positions.

Future studies on health professionals' satisfaction, recruitment and retention should explore their experiences and perspectives on the technical provision of care and interpersonal relationships with patients. This would help to identify the challenges and needs, and the type of support health professionals require from their employers in order to provide high-quality maternal care. Future research should also examine factors that can

foster positive relationships and communication between CBAs and formal health systems. Considering the diverse regional and community challenges, needs and priorities throughout the continent, future reviews should assess regional or country-specific variations in user preferences. This will help to determine what aspects of the review findings may be transferable to different contexts and which may not. Future research should also assess the relationship between participant characteristics and community perceptions, given that paper 2 did not explore differences across sociodemographic and economic characteristics. This would help to identify the sociodemographic and economic factors that may contribute to the uptake of formal maternal health services. Future studies should conduct research in other languages or review studies in other languages for additional insight from rural regions where English is not a primary language.

## 5.5 Conclusions

Paper 1 identified that women's perceptions of need, accessibility of care, and cultural and religious factors influence their preferences for maternal care providers throughout the continuum. Preferences for traditional maternal care, in particular, were shaped by the following: unavailability of material resources; greater competence and interpersonal skills among CBAs compared to HCPs; positive experiences with traditional care or negative experiences with formal care; needlessness of facility-based care for normal situations and perceptions of facilities as last resorts; fear of medical procedures and witchcraft; greater trust in CBAs over HCPs; greater comfort with traditional care providers and procedures; lack of knowledge and awareness; physical and financial inaccessibility to facility-based care; restraining social norms; restraining cultural and religious norms, beliefs and obligations. Paper 2 identified unavailability of human and material resources, poor facility conditions, health attendant incompetence and lack of skill, poor interpersonal communication and behaviours, unprofessionalism, unaccountability, physical inaccessibility, financial inaccessibility, lack of knowledge and awareness, and uptake of traditional care as reasons for the underutilization of formal maternal care and high occurrence of maternal deaths. Together, these two papers highlight that major areas of improvement include the following: human and material resources availability; technical and interpersonal quality of formal care; workplace management; accommodation; physical accessibility; financial accessibility; social accessibility; cultural and religious sensitivity and integration with health systems; misinformation, misconceptions and overall community knowledge and awareness; and involvement of community members in the design and implementation of local interventions.

Overall, this thesis highlights that rural women in Africa have multiple, unique realities, challenges, and needs that shape their low uptake of facility-based maternal care services and affect their survival from antepartum to postpartum. Considering the unique contexts and realities across Africa and the large and diverse number of

populations, these two papers also iterate that consistency of certain findings does not necessarily mean preferences, perceptions, deterrent factors, enabling factors, and individual or community needs are feasibly transferable across rural populations. Likewise, findings that are not consistent across the two papers or with the literature are not necessarily insignificant in certain contexts either. Therefore, this thesis indicates that there is no magic bullet that can increase the uptake of evidence-based, formal maternal care. Interventions attempting to increase uptake of formal maternal care must account for local contexts and daily realities at the community, household and individual levels. This will enable the development of tailored and multi-option interventions that reflect the various preferences, needs, and expectations of service users and other influential stakeholders. Such local customization will increase the likelihood of local acceptability and increase the appeal and allure formal maternal care providers and settings. Customized options will also increase the likelihood of effective and long-lasting positive changes in maternal healthcare utilization and maternal death rates across rural Africa.

## REFERENCES


1. Campbell OM, Graham WJ. Strategies for reducing maternal mortality: Getting on with what works. Lancet. 2006; 368(9543):1284-99.

2. UNICEF. Maternal mortality. UNICEF Data: Monitoring the situation of children and women. 2017 [cited2018Oct8]. Available from https://data.unicef.org/topic/maternal-health/maternal-mortality/.

3. World Health Organization. Preventing early pregnancy and poor reproductive outcomes among adolescents in developing countries [Internet]. Geneva: World Health Organization; 2011. Available from http://apps.who.int/iris/bitstream/handle/10665/44691/9789241502214_eng.pdf?sequence=1.

4. Gulliford M, Figueroa-Munoz J, Morgan M, Hughes D, Gibson B, Beech R, et al. What does 'access to health care' mean? J Health Serv Res Policy. 2002; 7(3): 186-8.

5. WHO, UNICEF, UNFPA, World Bank Group, United Nations Population Division. Trends in maternal mortality: 1990 to 2015 [Internet]. Geneva: World Health Organization; 2015. Available from http://apps.who.int/iris/bitstream/handle/10665/194254/9789241565141_eng.pdf;jsessionid=290616ED3134931C478D30A44F1A614A?sequence=1.

6. Boutayeb A, Helmert U. Social inequalities, regional disparities and health inequity in North African countries. Int J Equity Health. 2011; 10(1):23.

7. Kyei-Nimakoh M, Carolan-Olah M, Mccann TV. Access barriers to obstetric care at health facilities in sub-Saharan Africa—a systematic review. Syst Rev. 2017; 6(1):110.

8. Shewamene Z, Dune T, Smith CA. The use of traditional medicine in maternity care among African women in Africa and the diaspora: A systematic review. BMC Complement Altern Med. 2017;17(1):382.

9. Nelms LW, Gorski J. The role of the African traditional healer in women's health. J Transcult Nurs. 2006; 17(2): 184-9.

10. Houweling TA, Ronsman C, Campbell OMR, Kunst AE. Huge poor-rich inequalities in maternity care: an international comparative study of maternity and child care in developing countries. Bull World Health Organ. 2007;85(10):733-820.

11. Moyer CA, Mustafa A. Drivers and deterrents of facility delivery in sub-Saharan Africa: A systematic review. Reprod Health. 2013; 10:40.

12. Lassi Z, Bhutta Z. Community-based intervention packages for reducing maternal and neonatal morbidity and mortality and improving neonatal outcomes. Cochrane Database Syst Rev. 2015;(3):CD007754.

13. Agbor I, Are-Shodeinde A, Bloom SS, Gardner H, Om'Iniabohs AO, Ugwa E, et al. Factors influencing use of health services by first-time young parents: Findings from formative research in six states in Nigeria [Internet]. Washington, DC: USAID; 2018. Available from https://www.mcsprogram.org/resource/factors-influencing-use-of-health-services-by-first-time-young-parents-findings-from-formative-research-in-six-states-in-nigeria/.

14. World Health Organization. WHO recommendations on maternal health: Guidelines approved by the WHO Guidelines Review Committee [Internet]. Geneva: World Health Organization; 2017. Available from http://apps.who.int/iris/bitstream/handle/10665/259268/WHO-MCA-17.10-eng.pdf?sequence=1.

15. Lincetto O, Mothebesoane-Anoh S, Gomez P, Munjanja S. Antenatal care. In: World Health Organization. Opportunities for Africa's Newborns [Internet]. Cape Town: World Health Organization on behalf of The Partnership for Maternal Newborn and Child Health; 2006: 51-62.

16. Pearson L, Larsson M, Fauveau V, Standley, J. Childbirth care. In: World Health Organization. Opportunities for Africa's Newborns [Internet]. Cape Town: World Health Organization on behalf of The Partnership for Maternal Newborn and Child Health; 2006: 63-78.

17. Warren C, Daly P, Toure L, Mongi P. Postnatal care. In: World Health Organization. Opportunities for Africa's Newborns [Internet]. Cape Town: World Health Organization on behalf of The Partnership for Maternal Newborn and Child Health; 2006: 80-90.

18. Koblinsky M. Community-based Postpartum Care: An Urgent Unmet Need [Internet]. Washington DC, USA: The United States Agency for International Development, the CATALYST Consortium; 2005. Available from http://www2.pathfinder.org/site/DocServer/Community-based_postpartum_care.pdf.

19. World Health Organization. The WHO Application of ICD-10 to deaths during pregnancy, childbirth and the puerperium: ICD-MM [Internet]. Geneva: World Health Organization; 2012. Available from https://apps.who.int/iris/bitstream/handle/10665/70929/9789241548458_eng.pdf?sequence=1.

20. Adewuyi EO, Zhao Y, Auta A, Lamichhane R. Prevalence and factors associated with non-utilization of healthcare facility for childbirth in rural and urban Nigeria: Analysis of a national population-based survey. Scand J Public Health. 2017; 45 (6):675-82.

21. Berhan Y, Berhan A. Antenatal Care as a means of increasing birth in the health facility and reducing maternal mortality: a systematic review. Ethiop J Health Sci. 2014; 24: 93-104.

22. WHO, UNICEF, UNFPA, World Bank and the United Nations Population Division. Trends in maternal mortality: 1990 to 2013: estimates by WHO, UNICEF, UNFPA, The World Bank and the United Nations Population Division [Internet]. Geneva: World Health Organization; 2014. Available from https://www.unfpa.org/sites/default/files/pub-pdf/9789241507226_eng.pdf.

23. Say L, Chou D, Gemmill A, Tuncalp O, Moller AB, Daniels J. Global causes of maternal death: A WHO systematic analysis. Lancet Glob Health. 2014; 2: e323–33.

24. Khan KS, Wojdyla D, Say L, Gülmezoglu AM, Van Look PF. WHO analysis of causes of maternal death: A systematic review. Lancet. 2006; 367(9516):1066-74.

25. Storm F, Agampobi S, Eddleston M, Sorensen JB, Konradsen F, Rheinlander T. Indirect causes of maternal death. Lancet. 2014; 2(10): e566.

26. Bailey PE, Keyes E, Moran AC, Singh K, Chavane L, Chilundo B. The triple threat of pregnancy, HIV infection and malaria: Reported causes of maternal mortality in two nationwide health facility assessments in Mozambique, 2007 and 2012. BMC Pregnancy Childbirth. 2015;15: 293.

27. Starrs AM. Safe Motherhood Initiative: 20 years and counting. Lancet. 2006; 368 (9542):1130-32.

28. Mahler H. The safe motherhood initiative: A call to action. Lancet. 1987;329(8534):668.

29. Tinker A. Safe motherhood – from advocacy to action . Finance Dev. 1991; 28 (4):18-20.

30. Kyei-Nimakoh M, Carolan-Olah M, McCann TV. Millenium development Goal 5: Progress and challenges in reducing maternal deaths in Ghana. BMC Pregnancy Childbirth. 2016;16:51.

31. World Health Organization. MDG 5: improve maternal health. 2015 [cited2018Oct1]. Available from https://www.who.int/topics/millennium_development_goals/maternal_health/en/.

32. United Nations. Resolution adopted by the General Assembly. 55/2 United Nations Millennium Declaration. 2000 (cited 13 Oct 2018). Available from https://www.un.org/millennium/declaration/ares552e.htm.

33. Van den Broek NR, Falconer AD. Maternal mortality and millennium development goal 5. Br Med Bull. 2011;99(1):25-38.

34. Alkema L, Chou D, Hogan D, Zhang S, Moller AB, Gemmill A, et al. Global, regional, and national levels and trends in maternal mortality between 1990 and 2015, with scenario-based projections to 2030: A systematic analysis by the UN Maternal Mortality Estimation Inter-Agency Group. Lancet. 2016;387: 462-74.

35. World Health Organization. Maternal mortality. Key Facts. 2018 (cited 2018Oct12). Available from https://www.who.int/news-room/fact-sheets/detail/maternal-mortality.

36. World Health Organization. Strategies toward ending preventable maternal mortality (Internet). Geneva: World Health Organization; 2015. Available from https://apps.who.int/iris/bitstream/handle/10665/153540/WHO_RHR_15.03_eng.pdf;jsessionid=58333499543D0FC9FCACDA5C17D97D85?sequence=1.

37. Campbell OMR, Calvert C, Testa A, Strehlow M, Benova L, Keyes E, et al. The scale, scope, coverage, and capability of childbirth care. Lancet. 2016; 388(10056):2193-2208.

38. Rutaremwa G, Wandera SO, Jhamba T, Akiror E, Kiconco A. Determinants of maternal health services utilization in Uganda. BMC Health Serv Res. 2015;15:271.

39. Jat TR, Ng N, Sebastian MS. Factors affecting the use of maternal health services in Madhya and Pradesh state of India: A multilevel analysis. Int J Equity Health. 2011;10:59.

40. Ronsmans C, Graham WJ. Maternal mortality: who, when, where, and why. Lancet, 2006;368 (9542):1189-1200.

41. World Health Organization. Maternal Health: Investing in the Lifeline of Healthy Societies & Economies [Internet]. Geneva: Africa Progress Panel; 2010. Available from https://www.who.int/pmnch/topics/maternal/app_maternal_health_english.pdf.

42. Institute of Medicine. Crossing the quality chasm: A new health system for the 21st century [Internet]. Washington, DC: The National Academies Press; 2001.

43. Kruk ME, Leslie HH, Verguet S, Mbaruku GM, Adanu RM, Langer A. Quality of basic maternal care functions in health facilities of five African countries: An analysis of national health system surveys. Lancet Glob Health. 2016;4(11): e845-55.

44. Tuncalp O, Were WW, MacLennan C, Oladapo OT, Gulmezoglu AM, Bahl R, et al. Quality of care for pregnant women and newborns—the WHO vision. BJOG. 2015;122(8). 1045-9.

45. Srivastava A, Avan BI, Rajbangshi P, Bhattacharyya S. Determinants of women's satisfaction with maternal health care: A review of literature from developing countries. BMC Pregnancy Childbirth. 2015; 15:97.

46. Adegboyega T, Guyon A, Mengiste G, Robalo M, ba-Nguz E, Habimana P, et al. Opportunities for Africa's Newborns [Internet]. Geneva: World Health Organization; 2006. Available from https://www.who.int/pmnch/media/publications/oanfullreport.pdf.

47. Gabrysch S, Campbell OMR. Still too far to walk: Literature review of the determinants of delivery service use. BMC Pregnancy Childbirth. 2009; 9: 34.

48. Banda R, Fylkesnes K, Sandøy IF. Rural-urban differentials in pregnancy-related mortality in Zambia: estimates using data collected in a census. Popul Health Metr. 2015;13:32.

49. Adebowale AS, Fagbamigbe FA, Bamgboye EA. Rural-urban differential in maternal mortality estimate in Nigeria, sub-Saharan Africa. JAMB. 2010; 2: 74-91.

50. Tey NP, Lai SL. Correlates of and barriers to the utilization of health services for delivery in South Asia and sub-Saharan Africa. Sci World J. 2013; 2013: 1-11.

51. Diamond-Smith N, Sudhinaraset M. Drivers of facility deliveries in Africa and Asia: Regional analyses using the demographic and health surveys. Reprod Health. 2015;12:6.

52. Montagu D, Sudhinaraset M, Diamond-Smith N, Campbell O, Gabrysch S, Freedman L, et al. Where women go to deliver: Understanding the changing landscape of childbirth in Africa and Asia. Health Policy Plan. 2017; 32(8):1146-52.

53. National Population Commission (NPC) [Nigeria] and ICF International. Nigeria Demographic and Health Survey 2013 [Internet]. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF International; 2014. Available from https://dhsprogram.com/pubs/pdf/FR293/FR293.pdf.

54. Richard F, Antony M, Witter S, Kelley A, Sieleunou I, Kafando Y, et al. Fee exemption for maternal care in sub-Saharan Africa: A review of 11 countries and lessons for the region. Global Health Governance. 2013; 6(2):1-21.

55. Wekesah FM, Izugbara CO. Maternal health in Nigeria: Facts and figures [Internet]. Nairobi: African Population and Health Research Center (APHRC); 2017. Available from http://aphrc.org/wp-content/uploads/2017/06/APHRC-Maternal-Health-in-Nigeria-%E2%80%93-Facts-and-Figures.pdf.

56. Izugbara CO, Wekesah FM, Adedini SA. Maternal health in Nigeria: a situation update [Internet]. Nairobi: African Population and Health Research Center; 2016. Available from http://aphrc.org/wp-content/uploads/2016/05/Maternal-Health-in-Nigeria_Final-Report.pdf

57. Uzochukwu BSC. Primary health care systems (PRIMASYS): Case study from Nigeria [Internet]. Geneva: World Health Organization; 2017. Available from https://www.who.int/alliance-hpsr/projects/alliancehpsr_nigeriaprimasys.pdf.

58. Omo-Aghoja LO, Aisien OA, Akuse JT, Bergstrom S, Okonofua FE. Maternal mortality and emergency obstetric care in Benin City, South-South Nigeria. Clin Med Res. 2010;2(4):055-60.

59. United Nations. Population Division. World Urbanization Prospects 2018- Nigeria. 2018 [cited2018Sept20]. Available from https://population.un.org/wup/Country-Profiles/.

60. Carter MC, Corry M, Delbanco S, Foster TCS, Friedland R, Gabel R, et al. 2020 Vision for a high-quality, high-value maternity care system. Womens Health Issues. 2010; 20: s7-s17.

61. Hollowell J, Li Y, Malouf R, Buchanan J. Women's birth place preferences in the United Kingdom: A systematic review and narrative synthesis of the quantitative literature. BMC Pregnancy Childbirth. 2016;16:213.

62. Findley SE, Doctor H V, Ashir GM, Kana MA, Mani AS, Green C, et al. Reinvigorating health systems and community-based services to improve maternal health outcomes case study from Northern Nigeria. J Prim Care Community Health. 2015;6(2):88-99.

63. Kerber KJ, de Graft-Johnson JE, Bhutta ZA, Okong P, Starrs A, Lawn JE. Continuum of care for maternal, newborn, and child health: from slogan to service delivery. Lancet. 2007;370(9595):1358-69.

64. Okafor CB. Folklore linked to pregnancy and birth in Nigeria. West J Nurs Res. 2000; 22(2):189-202.

65. Moore MK, World Health Organization. Safer motherhood, safer womanhood: a literature review on behalf of and under the overall guidance of WHO's Division of Reproductive Health [Internet]. Geneva: World Health Organization; 1997. Available from http://apps.who.int/iris/bitstream/handle/10665/69834/WHO_RHT_97.34_eng.pdf?sequence=1&isAllowed=y.

66. Asseffa NA, Bukola F, Ayodele A. Determinants of use of health facility for childbirth in rural Hadiya zone, Southern Ethiopia. BMC Pregnancy Childbirth. 2016;16(1):355.

67. Kawakatsu Y, Sugishita T, Oruenjo K, Wakhule S, Kibosia K, Were E, et al. Determinants of health facility utilization for childbirth in rural western Kenya: Cross-sectional study. BMC Pregnancy Childbirth. 2014; 14:1.

68. Ebonwu J, Mumbauer A, Uys M, Wainberg ML, Medina-Marino A. Determinants of late antenatal care presentation in rural and peri-urban communities in South Africa: A cross-sectional study. PLoS One. 2018;13(3):e0191903.

69. K Mehari, E Wencheko. Factors affecting maternal health care services utilization in rural Ethiopia: A study based on the 2011 EDHS data. Ethiop J Health Dev. 2013; 27(1):16-24.

70. Mrisho M, Schellenberg JA, Mushi AK, Obrist B, Mshinda H, Tanner M, et al. Factors affecting home delivery in rural Tanzania. Trop Med Int Health. 2007; 12(7): 862-72.

71. Manyeh AK, Akpakli DE, Kukula V, Ekey RA, Narh-Bana S, Adjei A, et al. Socio-demographic determinants of skilled birth attendant at delivery in rural southern Ghana. BMC Res Notes. 2017;10(1): 268.

72. Agunwa CC, Obi IE, Ndu AC, Omotowo IB, Idoko CA, Umeobieri AK, et al. Determinants of patterns of maternal and child health service utilization in a rural community in south eastern Nigeria. BMC Health Serv Res. 2017;17(1):715.

73. Jacobs C, Moshabela M, Maswenyeho S, Lambo N, Michelo C. Predictors of antenatal care, skilled birth attendance, and postnatal care utilization among the remote and poorest rural communities of Zambia: A multilevel analysis. Front Public Heal. 2017;5:11.

74.Metwally AM, Abdel-Latif GA, Salama SI, Tawfik A, Elmosalami DM, Mohsen AMA. Care seeking behaviors of rural women in Egypt: Community based study. J Appl Sci Res. 2013;9(6):3767–80.

75. Solanke B, Rahman SA. Multilevel analysis of factors associated with assistance during delivery in rural Nigeria: Implications for reducing rural-urban inequity in skilled care at delivery. BMC Pregnancy Childbirth. 2018; 18:438.

76. Kruk ME, Rockers PC, Mbaruku G, Paczkowski MM, Galea S. Community and health system factors associated with facility delivery in rural Tanzania: A multilevel analysis. Health Policy. 2010. 97(2-3):209-16.

77. Adjiwanou V, LeGrand T. Gender inequality and the use of maternal healthcare services in rural sub-Saharan Africa. Health & Place. 2014; 29(2014): 67-78.

78. Mohan D, Gupta S, LeFevre A, Bazant E, Killewo J, Baqui AH. Determinants of postnatal care use at health facilities in rural Tanzania: Multilevel analysis of a household survey. BMC Pregnancy Childbirth. 2015;15:282.

79. Etukudo IW, Inyang AA. Determinants of use of maternal health care services in a rural Nigerian Community. RHSS. 2014; 4(18): 55-60.

80. Adebowale AS, Akinyemi JO. Determinants of maternal utilization of health services and nutritional status in a rural community in South-West Nigeria. Afr J Reprod Health. 2016; 20(2): 72-85.

81. Odetola TD. Health care utilization among rural women of child-bearing age: a Nigerian experience. Pan Afr Med J. 2015;20:151.

82. Moindi RO, Ngari MM, Nyambati VCS, Mbakaya C. Why mothers still deliver at home: Understanding factors associated with home deliveries and cultural practices in rural coastal Kenya, a cross-section study. BMC Public Health. 2016;16:114.

83. Sakeah E, Doctor HV, McCloskey L, Bernstein J, Yeboah-Antwi K, Mills S. Using the community-based health planning and services program to promote skilled delivery in rural Ghana: Socio-demographic factors that influence women utilization of skilled attendants at birth in northern Ghana. BMC Public Health. 2014;14:344.

84. Sakeah E, Okawa S, Rexford-Oduro A, Shibanuma A, Ansah E, Kikuchi K, et al. Determinants of attending antenatal care at least four times in rural Ghana: Analysis of a cross-sectional survey. Glob Health Action. 2017;10(1):1291879.

85. Arba MA, Darebo TD, Koyira MM. Institutional delivery service utilization among women from rural districts of Wolaita and Dawro Zones, Southern Ethiopia; A Community based cross-sectional study. PLoS ONE. 2016; 11(3): e0151082.

86. Chirdan OO, Tagurum YO, Hassan ZI, Afolarinmi TO, Chingle M, Daboer J, et al. Utilization of maternal health services: A study of two rural communities in North-Eastern Nigeria. J Med Trop. 2012; 14(1): 26-34.

87. Kifle MM, Kesete HF, Gaim HT, Angosom GS, Araya MB. Health facility or home delivery? Factors influencing the choice of delivery place among mothers living in rural communities of Eritrea. J Heal Popul Nutr. 2018;37(1):22.

88. Okonofua F, Ntoimo L, Ogungbangbe J, Anjorin S, Imongan W, Yaya S. Predictors of women's utilization of primary health care for skilled pregnancy care in rural Nigeria. BMC Pregnancy Childbirth. 2018;18(1):106.

89. Chorongo D, Okinda FM, Kariuki EJ, Mulewa E, Ibinda F, Muhula S, et al. Factors influencing the utilization of focused antenatal care services in Malindi and Magarini sub-counties of Kilifi county, Kenya. Pan Afr Med J. 2016; 25(Suppl 2):14.

90. Emelumadu O, Ukegbu A, Ezeama N, Kanu O, Ifeadike C, Onyeonoro U. Socio-demographic determinants of maternal health-care service utilization among rural women in anambra state, South East Nigeria. Ann Med Health Sci Res. 2014;4(3):374-82.

91. Karanja S, Gichuki R, Igunza P, Muhula S, Ofware P, Lesiamon J, et al. Factors influencing deliveries at health facilities in a rural Maasai Community in Magadi sub-County, Kenya. BMC Pregnancy Childbirth. 2018;18(1):5.

92. Kante AM, Chung CE, Larsen AM, Exavery A, Tani K, Phillips JF. Factors associated with compliance with the recommended frequency of postnatal care services in three rural districts of Tanzania. BMC Pregnancy Childbirth. 2015;15:341.

93. Anyait A, Mukanga D, Oundo GB, Nuwaha F. Predictors for health facility delivery in Busia district of Uganda: A cross sectional study. BMC Pregnancy Childbirth. 2012; 12:132.

94. Nnaji GA, Nwobodo E, Olu EA, Onudo W. Utilization of maternal health services in rural primary health centers in Sub- Saharan Africa. Trop J Med Res. 2010; 14(2): 66-70.

95. Some DT, Sombie I, Meda N. How decision for seeking maternal care is made- a qualitative study in two rural medical districts of Burkina Faso. Reprod Health. 2013;10: 8.

96. Wilunda C, Quaglio G, Putoto G, Lochoro P, Dall'Oglio G, Manenti F, et al. A qualitative study on barriers to utilisation of institutional delivery services in Moroto and Napak districts, Uganda: Implications for programming. BMC Pregnancy Childbirth. 2014; 14:259.

97. Phiri PW, Rattanapan C, Mongkolchati A. Determinants of postnatal service utilisation among mothers in rural settings of Malawi. Health Soc Care Community. 2015;23(5):493–501.

98. Enuameh YAK, Okawa S, Asante KP, Kikuchi K, Mahama E, Ansah E, et al. Factors influencing health facility delivery in predominantly rural communities across the three ecological zones in Ghana: A cross-sectional study. PLoS One. 2016;11(3):e0152235.

99. Benova L, Campbell OM, Sholkamy H, Ploubidis GB. Socio-economic factors associated with maternal health-seeking behaviours among women from poor households in rural Egypt. Int J Equity Health. 2014; 13:111.

100. Nsan E, Ndifon W, Oyo-Ita A, Agogbuo M, Akpovi S. Utilization of maternal health services in a rural district in southern Nigeria. MSJM. 2012; 11(2).

101. Munguambe K, Boene H, Vidler M, Bique C, Sawchuck D, Firoz T, et al. Barriers and facilitators to health care seeking behaviours in pregnancy in rural communities of southern Mozambique. Reprod Health. 2016;13 (Suppl 1):31.

102. Mahmoud GA, Omar AM. Women's awareness and perceptions about maternal mortality in rural communities in Assiut and Fayoum Governorates, Egypt. Egypt Nurs J. 2018;15(1):21-29.

103. Jammeh A, Sundby J, Vangen S. Barriers to emergency obstetric care services in perinatal deaths in rural gambia: A qualitative in-depth interview study. Obstet Gynecol. 2011: 981096.

104. Kea AZ, Tulloch O, Datiko DG, Theobald S, Kok MC. Exploring barriers to the use of formal maternal health services and priority areas for action in Sidama zone, Southern Ethiopia. BMC Pregnancy Childbirth. 2018;18(1):96.

105. Sumankuuro J, Crockett J, Wang S. The use of antenatal care in two rural districts of Upper West Region, Ghana. PLoS One. 2017;12(9):e0185537.

106. Gage AJ. Barriers to the utilization of maternal healthcare in rural Mali. Soc Sci Med. 2007; 65(8):1666-82.

107. Lerberg PM, Sundby J, Jammeh A, Fretheim A. Barriers to skilled birth attendance: A survey among mothers in rural Gambia. Afr J Reprod Health. 2014; 18(1): 35-43.

108. Adams YJ, Stommel M, Ayoola A, Horodynski M, Malata A, Smith B. Use and evaluation of postpartum care services in rural Malawi. J Nurs Scholarsh. 2016; 49(1): 87-95.

109. Machira K, Palamulen M. Rural-urban differences in the use of postnatal care services in Malawi. J Egypt Public Health Assoc. 2017;92(1):1-10.

110. Boogaard JVD, Arntzen B, Chilwana J, Liyungu M, Mantingh A, Stekelenburg J. Skilled or traditional birth attendant? choices of communities in Lukulu District, rural Zambia. World Health Popul. 2008;10(1):34-43.

111. Some TD, Sombie I, Meda N. Women's perceptions of homebirths in two rural medical districts in Burkina Faso: A qualitative study. Reprod Health. 2011;8:3.

112. Hounton S, Chapman G, Menten J, De Brouwere V, Ensor T, Sombie I, et al. Accessibility and utilisation of delivery care within a Skilled Care Initiative in rural Burkina Faso. Trop Med Int Health. 2008;13 Suppl 1:44–52.

113. Mahiti GR, Mkoka DA, Kiwara AD, Mbekenga CK, Hurtig A-K, Goicolea I. Women's perceptions of antenatal, delivery, and postpartum services in rural Tanzania. Glob Health Action. 2015;8:28567.

114. Parkhurst JO, Ssengooba F. Assessing access barriers to maternal health care: Measuring bypassing to identify health centre needs in rural Uganda. Health Policy Plan. 2009;24(5):377-84.

115. Gabrysch S, Cousens S, Cox J, Campbell OMR. The influence of distance and level of care on delivery place in rural Zambia: a study of linked national data in a geographic information system. PLoS Med. 2011;8(1):e1000394.

116. Kyei NNA, Campbell OMR, Gabrysch S. The influence of distance and level of service provision on antenatal care use in rural Zambia. PLoS One. 2012;7(10):e46475.

117. Atuoye KN, Dixon J, Rishworth A, Galaa SZ, Boamah SA, Luginaah I. Can she make it? Transportation barriers to accessing maternal and child health care services in rural Ghana. BMC Health Serv Res. 2015;15:333.

118. Mwangome FK, Holding PA, Songola KM, Bomu GK. Barriers to hospital delivery in a rural setting in Coast Province, Kenya: Community attitude and behaviours. Rural Remote Health. 2012;12:1852.

119. Kumbani L, Bjune G, Chirwa E, Malata A, Odland JO. Why some women fail to give birth at health facilities: A qualitative study of women's perceptions of perinatal care from rural Southern Malawi. Reprod Health. 2013; 10(1):9.

120. Dahlberg M, Sodergard B, Thorson A, Alfvén T, Awiti-Ujiji O. Being perceived as 'a real woman' or following one's own convictions: A qualitative study to understand individual, family, and community influences on the place of childbirth in Busia, Kenya. Cult Health Sex. 2015; 17(3):326-42.

121. Firoz T, Vidler M, Makanga PT, Boene H, Chiau R, Sevene E, et al. Community perspectives on the determinants of maternal health in rural southern Mozambique: A qualitative study. Reprod Health. 2016; 13(Suppl2):112.

122. Mrisho M, Obrist B, Schellenberg JA, Haws RA, Mushi AK, Mshinda H, et al. The use of antenatal and postnatal care: Perspectives and experiences of women and health care providers in rural southern Tanzania. BMC Pregnancy Childbirth. 2009;9:10.

123. Agadjanian V, Yao J, Hayford S. Place, time and experience: Barriers to universalization of institutional child delivery in rural Mozambique. Int Perspect Sex Reprod Health. 2016; 42(1): 21-31.

124. Gudu W, Addo B. Factors associated with utilization of skilled service delivery among women in rural Northern Ghana: a cross sectional study. BMC Pregnancy Childbirth. 2017;17:159.

125. Sialubanje C, Massar K, Van der Pijlk MSG, Kirch EM, Hamer DH, Ruiter RAC. Improving access to skilled facility-based delivery services: Women's beliefs on facilitators and barriers to the utilisation of maternity waiting homes in rural Zambia. Reprod Health. 2015;12:61.

126. Solanke BL, Oladosu OA, Akinlo A, Olanisebe SO. Religion as a social determinant of maternal health care service utilization in Nigeria. Afr Popul Stud. 2015; 29(2): 1868-81.

127. Treacy L, Sagbakken M. Exploration of perceptions and decision-making processes related to childbirth in rural Sierra Leone. BMC Pregnancy Childbirth. 2015;15:87.

128. Ganle JK. Why Muslim women in Northern Ghana do not use skilled maternal healthcare services at health facilities: a qualitative study. BMC Int Health Hum Rights. 2015; 15(1):10.

129. White D, Dynes M, Rubardt M, Sissoko K, Stephenson R. The influence of intra-familial power on maternal health care in Mali: perspectives of women, men and mothers-in-law. Int Perspect Sex Reprod Health. 2013; 39(2): 58-68.

130. Moyer C, Adongo P, Aborigo R, Hodgson A, Engmann CM, DeVries R. ''It's up to the Woman's People'': How social factors influence facility-based delivery in rural Northern Ghana. Matern Child Health J. 2014; 18 (1): 109-19.

131. Shehu CE, Ibrahim MTO, Oche MO, Nwobodo EI. Determinants of place of delivery: A comparison between an urban and a rural community in Nigeria. J Public Health Epidemiol. 2016; 8(6):91-101.

132. Gupta M, Aborigo RA, Adongo PB, Rominski S, Hodgson A, Engmann C, et al. Grandmothers as gatekeepers? The role of grandmothers in influencing health-seeking for mothers and newborns in rural northern Ghana. Glob Public Health. 2015; 10(9): 1078-91.

133. Bazzano AN, Kirkwood B, Tawiah-Agyemang C, Owusu-Agyei S, Adongo P. Social costs of skilled attendance at birth in rural Ghana. Int J Gynaecol Obstet. 2008; 102(1):91-4.

134. Ababulgu FA, Bekuma TT. Delivery site preferences and associated factors among married women of child bearing age in Bench Maji Zone, Ethiopia. Ethiop J Health Sci. 2016; 26: 45-54.

135. Sule SS, Ijadunola KT, Onayade AA, Fatusi AO, Soetan RO, Connell FA. Utilization of primary health care facilities: Lessons from a rural community in southwest Nigeria. Niger J Med. 2008;17: 98-106.

136. Igboanugo G, Martin C. What are pregnant women in rural Niger Delta community's perceptions of conventional maternity service provision? An exploratory qualitative study. Afr J of Reprod Health. 2011; 15(3): 59-72.

137. Ndikom CM. Pattern of uptake of maternal health services in a rural community in Nigeria. Afr J Midwifery Womens Health. 2013; 4(3): 139-45.

138. Dairo MD, Atanlogun A. Utilization of antenatal and postnatal care services among adolescents and young mothers in rural communities in South-Western Nigeria. Afr J Biomed Res. 2018; 21(2): 133-7.

139. Magoma M, Requejo J, Campbell OM, Cousens S, Filippi V. High ANC coverage and low skilled attendance in a rural Tanzanian district: A case for implementing a birth plan intervention. BMC Pregnancy Childbirth. 2010; 10(1):13.

140. Cofie LE, Barrington C, Singh K, Sodzi-Tettey S, Akaligaung A. Birth location preferences of mothers and fathers in rural Ghana: Implications for pregnancy, labor and birth outcomes. BMC Pregnancy Childbirth. 2015; 15(1):15.

141. Serizawa A, Ito K, Algaddal A, Eltaybe R. Cultural perceptions and health behaviors related to safe motherhood among village women in Eastern Sudan: Ethnographic study. Int J Nurs Stud. 2014; 51(4):572-81.

142. Abdulraheem IS, Olapipo AR, Amodu MO. Primary health care services in Nigeria: critical issues and strategies for enhancing the use by the rural communities. J Public Health Epidemiol. 2012;4(1):5-13.

143. Ojor A. Progressivity of Government Spending on Primary Health Care Evidence from Rural Communities of Edo State, Nigeria. Asian Journal of Agricultural Extension, Economics & Sociology. 2015; 5(4): 238-48.

144. Kana MA, Doctor HV, Peleteiro B, Lunet N, Barros H. Maternal and child health interventions in Nigeria: A systematic review of published studies from 1990 to 2014. BMC Public Health. 2015; 15: 334.

145. Nigerian Federal Ministry of Health. National Health Facility Survey: 2016 Final Report [Internet]. Abuja: Federal Ministry of Health Nigeria; 2017. Available from https://www.medbox.org/nigeria/national-health-facility-survey-nhfs-2016/preview?q=.

146. Ademiluyi, AI, Aluko-Arowolo OS. Infrastructural distribution of healthcare services in Nigeria: An overview. J Geogr Reg Plann. 2009; 2(5): 104-10.

147. Dahiru T, Oche OM. Determinants of antenatal care, institutional delivery and postnatal care services utilization in Nigeria. Pan Afr Med J. 2015; 21: 321.

148. Ibekwe PC. Healthcare problems in developing countries. Med Pract Rev. 2010; 1(1): 9-11.

149. Jaro I, Ibrahim A. The accessibility problems of primary health care to rural people in Jigawa State, Nigeria. GARJSS. 2012; 1(4): 072-6.

150. Ugo O. Strengthening Primary Health Care services in rural Nigeria: The potential of using midwives as skilled birth attendants. Health Syst Policy Res. 2016; 3(2): 18.

151. Abimbola S, Okoli U, Olubajo O, Abdullahi MJ, Pate MA. The Midwives Service Scheme in Nigeria. PLoS Med. 2012; 9(5): e1001211.

152. Adegoke AA, Atiyaye FB, Abubakar AS, Auta A, Aboda A. Job satisfaction and retention of midwives in rural Nigeria. Midwifery. 2015; 31(10): 946-56.

153. Chankova S, Nguyen H, Chipanta D, Kombe G, Onoja A, Ogungbemi K. Catalyzing human resources mobilization: A look at the situation in Nigeria. Global Health Council Annual Conference [Internet]. Washington, DC: Abt Associates; 2007. Available from https://www.abtassociates.com/sites/default/files/2019-07/HRMobilizNigeria.pdf.

154. Adebisi GL, Oyebode LA, Olubode T. Assessment of rural dwellers access to Primary Healthcare Services in Oyo State, Nigeria. JAAS. 2017;6(1): 9-13.

155. Babalola S, Fatusi A. Determinants of use of maternal health services in Nigeria-looking beyond individual and household factors. BMC Pregnancy Childbirth. 2009; 9: 1.

156. Aradeon S, Doctor H. Reducing rural maternal mortality and the equity gap in northern Nigeria: The public health evidence for the Community Communication Emergency Referral strategy. Int J Womens Health. 2016;8:77-92.

157. Azuh DE, Azuh AE, Iweala EJ, Adeloye D, Akanbi M, Mordi RC. Factors influencing maternal mortality among rural communities in southwestern Nigeria. Int J Womens Health. 2017; 9: 179-88. SAME

158. Fatusi AO, Ijadunola KT. National study on essential obstetric care facilities in Nigeria. Abuja, Nigeria: Federal Ministry of Health; 2003.

159. Marchie C, Anyanwu F. Relative contributions of socio-cultural variables to the prediction of maternal mortality in Edo South Senatorial District, Nigeria. Afr J Reprod Health. 2009;13(2):109-15.

160. Ononokpono DN, Odimegwu CO. Determinants of maternal healthcare utilization in Nigeria: A multilevel approach. Pan Afr Med J. 2014;17(Suppl 1):2.

161. Abayomi AF, Chima V, Oluwatobi AA. Women autonomy and maternal healthcare services utilization among young ever-married women in Nigeria. Int J Nurs Midwifery. 2018; 10(6):62-73.

162. Ogu RN, Agholor KN, Okonofua FE. Engendering the attainment of SDG 3 in Africa: Overcoming the Socio Cultural Factors Contributing to Maternal Mortality. Afr J Reprod Health. 2016; 20(3): 62-74.

163. Okereke E, Aradeon S, Akerele A, Tanko M, Yisa I, Obonyo B. Knowledge of safe motherhood among women in rural communities in northern Nigeria: Implications for maternal mortality reduction. Reprod Health. 2013;10 (57):1-12.

164. Bhattacharyya S, Srivastava A, Roy R, Avan BI. Factors influencing women's preference for health facility deliveries in Jharkhand state, India: A cross-sectional analysis. BMC Pregnancy Childbirth. 2016;15:50.

165. Hogan M, Foreman K, Naghavi M, Ahn S, Wang M, Makela S, et al. Maternal mortality for 181 countries, 1980–2008: A systematic analysis of progress towards Millennium Development Goal 5. The Lancet. 2010; 375(9726): 1609-23.

166. Kassebaum NJ, Bertozzi-Villa A, Coggeshall MS, Shackelford KA, Steiner C, Heuton KR, et al. Global, regional, and national levels and causes of maternal mortality during 1990-2013: A systematic analysis for the Global Burden of Disease Study. Lancet. 2014; 384(9947):980-1004.

167. Tawiah E. Maternal health care in five sub-Saharan African countries. Afr Popul Stud. 2011; 25(1): 1-25.

168. Dirksen CD, Utens CMA, Joore MA, Van Barneveld TA, Boer B, Dreesens DHH, et al. Integrating evidence on patient preferences in healthcare policy decisions: Protocol of the patient-VIP study. Implement Sci. 2013; 8:64.

169. Lehtinen A. Preferences as total subjective comparative evaluations. J Econ Methodol. 2013; 20(2):206-10.

170. Hausman D. Sympathy, commitment, and preference. Econ Philos. 2005; 21(1):33-50.

171. Scherer KR. What are emotions? And how can they be measured. Social Science Information. 2005; 44(4): 695-729.

172. Brennan PF, Strombom I. Improving health care by understanding patient preferences. J Am Med Inform Assoc. 1998; 5(3):257-62.

173. Oneview. The Eight Principles of Patient-Centered Care. [Internet]. Chicago (US): Oneview; 2015. Available from https://www.oneviewhealthcare.com/the-eight-principles-of-patient-centered-care/.

174. Gooberman-Hill R. Qualitative approaches to understanding patient preferences. Patient. 2012; 5(4): 215-23.

175. Cochrane. EPOC resources for review authors [Internet]. EPOC resources for review authors | Cochrane Effective Practice and Organisation of Care. Cochrane. Available from https://epoc.cochrane.org/resources/epoc-resources-review-authors.

176. Popay J, Roberts H, Sowden A, Petticrew M, Arai L, Rodgers M, et al. Guidance on the conduct of narrative synthesis in systematic reviews: A product from the ESRC Methods Programme, version 1 [Internet]. Lancaster: Institute of Health Research; 2006. Available from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.178.3100&rep=rep1&type=pdf.

177. Barnett-Page E, Thomas J. Methods for the synthesis of qualitative research: a critical review. BMC Med Res Methodol. 2009; 9:59.

178. Bree R, Gallagher G. Using Microsoft excel to code and thematically analyse qualitative data: A simple, cost-effective approach. AISHE-J. 2016; 8(2): 2811-19.

179. Critical Appraisal Skills Programme [Internet]. CASP qualitative checklist: 10 questions help you make sense of a Qualitative research. Summertown Pavilion; 2018. Available from https://casp-uk.net/wp-content/uploads/2018/03/CASP-Qualitative-Checklist-Download.pdf.

180. Singh J. Critical appraisal skills programme. J Pharmacol Pharmacother. 2013; 4(1):76-7.

181. Lewin S, Booth A, Glenton C, Munthe-Kaas H, Rashidian A, Wainwright M, et al. Applying GRADE-CERQual to qualitative evidence synthesis findings: introduction to the series. Implement Sci. 2018; 13(Suppl 1): 2.

182. Munthe-Kass H, Bohren MA, Glenton C, Lewin S, Noyes J, Tuncalp O, et al. Applying GRADE-CERQual to qualitative evidence synthesis findings- paper 3: how to assess methodological limitations. Implement Sci. 2018; 13(Suppl 1): 9.

183. Colvin CJ, Garside R, Wainwright M, Munthe-Kass H, Glenton C, Bohren MA, et al. Applying GRADE-CERQual to qualitative evidence synthesis findings- paper 4: how to assess coherence. Implement Sci. 2018; 13(Suppl 1): 13.

184. Noyer J, Booth A, Lewin S, Carlsen B, Glenton C, Colvin CJ, et al. Applying GRADE-CERQual to qualitative evidence synthesis findings- paper 6: how to assess relevance of the data. Implement Sci. 2018; 13(Suppl 1): 4.

185. Glenton C, Carlsen B, Lewin S, Munthe-Kaas H, Colvin CJ, Tuncalp O, et al. Applying GRADE-CERQual to qualitative evidence synthesis findings – paper 5: how to assess adequacy of data. Implement Sci. 2018; 13(Suppl 1): 14.

186. United Nations Statistics Division. UNSD - Methodology [Internet]. United Nations (accessed 2018Nov). Available from https://unstats.un.org/unsd/methodology/m49/.

187. Ndirima Z, Neuhann F, Beiersmann C. Listening to their voices: understanding rural women's perceptions of good delivery care at the Mibilizi District Hospital in Rwanda. BMC Womens Health. 2018; 18(1):38.

188. Mason L, Dellicour S, Kuile FT, Ouma P, Phillips-Howard P, Were F, et al. Barriers and facilitators to antenatal and delivery care in western Kenya: A qualitative study. BMC Pregnancy Childbirth. 2015; 15: 26.

189. Okafor IP, Sekoni AO, Ezeiru SS, Ugboaja JO, Inem V. Orthodox versus unorthodox care: A qualitative study on where rural women seek healthcare during pregnancy and childbirth in Southwest, Nigeria. Malawi Med J. 2014; 26(2): 45-9.

190. Al-Mujtaba M, Cornelius LJ, Galadanci H, Erekaha S, Okundaye JN, Adeyemi OA, et al. Evaluating religious influences on the utilization of maternal health services among Muslim and Christian women in North-Central Nigeria. BioMed Res Int. 2016; 2016:1-8.

191. Seljeskog L, Sundby J, Chimango J. Factors influencing women's choice of place of delivery in rural Malawi-An explorative study. Afr J Reprod Health. 2006; 10(3):66-75.

192. Myer L, Harrison A. Why do women seek antenatal care late? Perspectives from rural South Africa. J Midwifery Womens Health. 2003; 48(4):268-72.

193. King R, Jackson R, Dietsch E, Hailemariam A. Barriers and facilitators to accessing skilled birth attendants in Afar region, Ethiopia. Midwifery. 2015; 31(5):540-6.

194. Osubor KM, Fatusi AO, Chiwuzie JC. Maternal health-seeking behavior and associated factors in a Rural Nigerian community. Matern Child Health J. 2006; 10(2):159-69.

195. Kyomuhendo GB. Low Use of Rural Maternity Services in Uganda: Impact of Women's Status, Traditional Beliefs and Limited Resources. Reprod Health Matters. 2003; 11(21):16-26.

196. Bedford J, Gandhi M, Admassu M, Girma A. 'A Normal Delivery Takes Place at Home': A qualitative study of the location of childbirth in rural Ethiopia. Matern Child Health J. 2012; 17(2):230-9.

197. Dodzo MK, Mhloyi M. Home is best: Why women in rural Zimbabwe deliver in the community. PLoS One. 2017; 12(8):e0181771.

198. Engmann CM, Crissman H, Engmann CE, Adanu R, Nimako D, Crespo K, et al. Shifting Norms: Pregnant women's perspectives on skilled birth attendance and facility-based delivery in Rural Ghana. Afr J of Reprod Health. 2013; 17(1): 15-26.

199. Caulfield T, Onyo P, Byrne A, Nduba J, Nyagero J, Morgan A, et al. Factors influencing place of delivery for pastoralist women in Kenya: A qualitative study. BMC Womens Health. 2016;16:52.

200. Adinew YM, Assefa NA. Experience of facility based childbirth in rural Ethiopia: An exploratory study of women's perspective. J Pregnancy. 2017; 2017: 1-6.

201. Thwala S, Jones L, Holroyd E. An ethnographic account of the beliefs, values, and experiences of rural Swazi women during childbirth. Evidence Based Midwifery. 2012; 10(3): 101-6.

202. Pfeiffer C, Mwaipopo R. Delivering at home or in a health facility? health-seeking behaviour of women and the role of traditional birth attendants in Tanzania. BMC Pregnancy Childbirth. 2013; 13(1):55.

203. De Allegri M, Tiendrebéogo J, Müller O, Yé M, Jahn A, Ridde V. Understanding home delivery in a context of user fee reduction: A cross-sectional mixed methods study in rural Burkina Faso. BMC Pregnancy Childbirth. 2015; 15(1):330.

204. Sialubanje C, Massar K, Hamer DH, Ruiter RA. Reasons for home delivery and use of traditional birth attendants in rural Zambia: A qualitative study. BMC Pregnancy Childbirth. 2015; 15(1): 216.

205. Shiferaw S, Spigt M, Godefrooij M, Melkamu Y, Tekie M. Why do women prefer home births in Ethiopia? BMC Pregnancy Childbirth. 2013; 13(1):5.

206. Sisay MM, Yirgu R, Gobezayehu AG, Sibley LM. A qualitative study of attitudes and values surrounding stillbirth and neonatal mortality among grandmothers, mothers, and unmarried girls in rural Amhara and Oromiya regions, Ethiopia: Unheard souls in the backyard. J Midwifery Womens Health. 2014; 59(s1): s110-7.

207. Adinew YM, Assefa NA, Adinew YM. Why do some Ethiopian women give birth at home after receiving antenatal care? phenomenological study. Biomed Res Int. 2018; 2018: 1-8.

208. Chea SK, Mwangi TW, Ndirangu KK, Abdullahi OA, Munywoki PK, Abubakar A, et al. Prevalence and correlates of home delivery amongst HIV-infected women attending care at a rural public health facility in Coastal Kenya. PLoS ONE. 2018;13(3): e0194028.

209. Allou LA. Factors influencing the utilization of TBA services by women in the Tolon district of the northern region of Ghana. Scientific African. 2018; 1(2018): e00010.

210. Ibrhim MA, Demissie M, Medhanyie AA, Worku A, Berhane Y. Reasons for low level of skilled birth attendance in Afar pastoralist community, North East Ethiopia: A qualitative exploration. Pan Afr Med J. 2018;30:51.

211. Kwagala B. Birthing choices among the Sabiny of Uganda. Cult Health Sex. 2013; 15(s3): s401-14.

212. Ahmed MAA, Hamelin-Brabant L, Gagnon MP. Sociocultural determinants of nomadic women's utilization of assisted childbirth in Gossi, Mali: A qualitative study. BMC Pregnancy Childbirth. 2018; 18: 388.

213. Mathole T, Lindmark G, Majoko F, Ahlberg BM. A qualitative study of women's perspectives of antenatal care in a rural area of Zimbabwe. Midwifery. 2004; 20(2):122-32.

214. Jacobs C, Michelo C, Moshabela M. Why do rural women in the most remote and poorest areas of Zambia predominantly attend only one antenatal care visit with a skilled provider? A qualitative inquiry. BMC Health Serv Res. 2018; 18: 409.

215. Riang'a RM, Nangulu AK, Broerse JEW. "I should have started earlier, but I was not feeling ill!" Perceptions of Kalenjin women on antenatal care and its implications on initial access and differentials in patterns of antenatal care utilization in rural Uasin Gishu County Kenya. PLoS ONE. 2018; 13(10): e0202895.

216. Lewin S, Bohren M, Rashidian A, Munthe-Kaas H, Glenton C, Colvin CJ. Applying GRADE-CERQual to qualitative evidence synthesis findings- paper 2: how to make an overall CERQual assessment of confidence and create a Summary of Qualitative Findings table. Implement Sci. 2018; 13(Suppl 1): 10.

217. Girmaye M, Berhan Y. Skilled antenatal care service utilization and its association with the characteristics of women's health development team in Yeky district, South-West Ethiopia: A multilevel analysis. Ethiop J Health Sci. 2016; 369-80.

218. Birmeta K, Dibaba Y, Woldeyohannes D. Determinants of maternal health care utilization in Holeta town, central Ethiopia. BMC Health Serv Res. 2013; 13:256.

219. Nilses C, Nystrom L, Munjanja S, Lindmark G. Self-reported reproductive outcome and implications in relation to use of care in women in rural Zimbabwe. Acta Obstret Gynecol Scand. 2002;81(6):508-15

220. Akpabio II, Edet OB, Etifit RE, Robinson-Bassey GC. Women's preference for TBAs and modern health care practitioners in Akpabuyo community of Cross River State, Nigeria. Health Care Women Int. 2014; 35(1): 100-9.

221. Kruk ME, Paczkowski M, Mbaruku G, de Pinho H, Galea S. Women's preferences for place of delivery in Rural Tanzania: A population-based discrete choice experiment. Am J Public Health. 2009; 99(9):1666-72.

222. Kruk ME, Paczkowski MM, Tegegn A, Tessema F, Hadley C, Asefa M, et al. Women's preferences for obstetric care in rural Ethiopia: a population based discrete choice experiment in a region with low rates of facility delivery. J Epidemiol Community Health. 2010; 64(11): 984-8.

223. Larson E, Vail D, Mbaruku GM, Kimweri A, Freedman LP, Kruk ME. Moving toward patient-centered care in Africa: a discrete choice experiment of preferences for delivery care among 3,003 Tanzanian women. Plos ONE. 2015; 10(8): e0135621.

224. Mekonnen MG, Yalew KN, Umer JY, Melese M. Determinants of delivery practices among Afar pastoralists of Ethiopia. Pan Afr Med J. 2012;13(Supp 1):17.

225. James PB, Wardle J, Steel A, Adams J. Traditional, complementary and alternative medicine use in sub-Saharan Africa: a systematic review. BMJ Glob Health. 2018; 3 (5):e000895.

226. Chapman RR. Endangering safe motherhood in Mozambique: Prenatal care as pregnancy risk. Soc Sci Med. 2003; 57(2):355-74.

227. Farnes C, Beckstrand RL, Callister LC. Help-seeking behaviors in childbearing women in Ghana, West Africa. Int Nurs Rev. 2011; 58(4):491-7.

228. Agus Y, Horiuchi S. Factors influencing the use of antenatal care in rural West Sumatra, Indonesia. BMC Pregnancy Childbirth. 2012;12:9.

229. Anwar I, Sami M, Akhtar N, Chowdhury ME, Salma U, Rahman M, et al. Inequity in maternal health-care services: Evidence from home-based skilled-birth-attendant programmes in Bangladesh. Bull World Health Organ. 2008; 86(4): 252-9.

230. Stephenson R, Tsui AO. Contextual influences on reproductive health service use in Uttar Pradesh, India. Stud Fam Plann. 2002; 33(4): 309-20.

231. Withers M, Kharazmi N, Lim E. Traditional beliefs and practises in pregnancy, childbirth and postpartum: A review of the evidence from Asian countries. Midwifery. 2018; 56:158-70.

232. Sychareun V, Hansana V, Somphet V, Xayavong S, Phengsavanh A, Popenoe R. Reasons rural Laotians choose home deliveries over delivery at health facilities: A qualitative study. BMC Pregnancy Childbirth. 2012; 12(1): 86.

233. Titaley CR, Hunter CL, Dibley MJ, Heywood P. Why do some women still prefer traditional birth attendants and home delivery? a qualitative study on delivery care services in West Java Province, Indonesia. BMC Pregnancy Childbirth. 2010; 10(1): 43.

234. Story WT, Burgard SA, Lori JR, Taleb F, Ali NA, Hoque DE. Husbands involvement in delivery care utilization in rural Bangladesh: A qualitative study. BMC Pregnancy Childbirth. 2012; 12(1):28.

235. Sarker BK, Rahman M, Rahman T, Hossain J, Reichenbach L, Mitra DK. Reasons for preference of home delivery with traditional birth attendants (TBAs) in Rural Bangladesh: A qualitative exploration. PLoS ONE. 2016; 11(1): e0146161.

236. United Nations Sustainable Development Goals. Goal 3: Ensure healthy lives and promote well-being for all at all age [Internet] (Accessed 2018Oct24]. Available from https://www.un.org/sustainabledevelopment/health/.

237. Ayoade M. The location of public maternal healthcare facilities and maternal mortality in Ibadan Metropolis, Nigeria. IJoSS. 2016; 4: 1-18.

238. Yaya S, Okonofua F, Ntoimo L, Kadio B, Deuboue R, Imongan W, et al. Increasing women's access to skilled pregnancy care to reduce maternal and perinatal mortality in rural Edo State, Nigeria: A randomized controlled trial. Glob Health Res Policy. 2018; 3:12.

239. Logan C. Traditional leaders in modern Africa: Can democracy and the chief co-exist? [Internet]. Afrobarometer. 2008 (Accessed 2018Nov3). Available from http://afrobarometer.org/sites/default/files/publications/Working paper/AfropaperNo93.pdf.

240. Thuita FM. Engaging grandmothers and men in infant and young child feeding and maternal nutrition [Internet]. Washington, DC: United States Agency for International Development, Infant & Young Child Nutrition Project; 2010. Available from http://iycn.wpengine.netdna-cdn.com/files/IYCN_Kenya-Engaging-Grandmothers-and-Men-Formative-Assessment_0511.pdf.

241. Tindana PO, Kass N, Akweongo P. The informed consent process in a rural African setting: A Case Study of the Kassena-Nankana District of Northern Ghana. IRB Ethics Hum Res. 2006; 28(3): 1-6.

242. Ngom P, Debpuur C, Akweongo P, Adongo P, Binka FN. Gate-keeping and women's health seeking behaviour in Navrongo, Northern Ghana. Afr J Reprod Health. 2003; 7(1): 17-26.

243. Aubel J. The roles and influence of grandmothers and men [Internet]. Washington DC: Infant and Young Child Nutrition Project; 2011. Available from http://iycn.wpengine.netdna-cdn.com/files/IYCN-GM-and-Men-Lit-Review-060311.pdf.

244 Matinga PU. Saving Newborn Lives Formative Study [Internet]. Lilongwe, Malawi: Save the Children; 2002.

245. Niang CI. Formative Research on Peri/Neonatal Health in the Kébémere Health District, Senegal [Internet]. Dakar, Senegal: Basic Support for Institutionalizing Child Survival; 2003.

246. Fawole OI, Adeoye IA. Women's status within the household as a determinant of maternal healthcare use in Nigeria. Afr Health Sci. 2015; 15: 217-25.

247. Sussan AO, Olujide AA, & Ebere LO. Predictors of maternal health as perceived by pregnant women in Eti-Osa, Lagos State, Nigeria. JEP. 2014; 5(18): 125-31.

248. Lucas AO, Gilles IM. A New Short Textbook of Preventive Medicine for the Tropics. 3rd Ed. Bath Press (Great Britain); 1990.

249. Black RE, Laxminarayan R, Temmerman M, Walker N. Reproductive, maternal, newborn, and child health. 3rd ed. Vol. 2. Washington, DC: World Bank; 2016.

250. Panter-Brick C, Clarke S, Lomas H, Pinder M, Lindsay S. Culturally compelling strategies for behaviour change: a social ecology model and case study in malaria preventions. Soc Sci Med. 2006; 62: 2810–25.

251 United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects: The 2017 Revision [Internet]. New York: United Nations; 2017. Available from https://www.un.org/development/desa/publications/world-population-prospects-the-2017-revision.html.

252. The World Bank. Rural population (% of total population). Rural population (% of total population) | Data [Internet]. The World Bank Group. 2018 [cited 2018Nov29]. Available from https://data.worldbank.org/indicator/SP.RUR.TOTL.ZS?locations=NG.

253. Edo State Government. Edo People [Internet]. Edo State Government. [cited 2018Nov16]. Available from http://www.edostate.gov.ng/edo-people/.

254. State Central Office of Research and Statistics. The Edo State Statistical Year Book, 2013 [Internet]. Abuja: Ministry of Budget, Planning and Economic Development; 2013. Available from nigerianstat.gov.ng/download/213.

255. Green D. How Change Happens. 1st ed. New York: Oxford University Press; 2016.

256. Hunter Multicultural Community Drug Action Team, Drug and Alcohol Multicultural Education Centre. Confident communities: A guide to working together with African communities to reduce alcohol-related harms [Internet]. Sydney: Drug and Alcohol Multicultural Education Centre; 2015. Available from https://www.damec.org.au/index.php/resources/damec-publications/sector-and-workforce-development/confident-communities-a-guide-to-working-together-with-african-communities-to-reduce-alcohol-related-harms.

257. Francis JJ, Johnston M, Robertson C, Glidewell L, Entwistle V, Eccles MP, et al. What is an adequate sample size? Operationalizing data saturation for theory-based interview studies. Psychol Heal. 2010;25: 1229-45.

258. Gueye M, Diouf D, Chaava T, Tiomkin D. Community capacity enhancement strategy note: the answer lies within [Internet]. New York: United Nations Development Programme; 2005. Available from https://www.undp.org/content/dam/aplaws/publication/en/publications/hiv-aids/community-capacity-enhancement-strategy-note/15.pdf.

259. Adeleye OA, Aldoory L, Parakoyi DB. Using local culture and gender roles to improve male involvement in maternal health in Southern Nigeria. J Health Commun. 2011;16: 1122-35.

260. Knifton L. Understanding and addressing the stigma of mental illness with ethnic minority communities. Health Sociol Rev. 2012; 21(3):287-98.

261. Moulton PL, Miller ME, Offutt SM, Gibbens BP. Identifying rural health care needs using community conversations. J Rural Health. 2007; 23(1): 92-6.

262. Kotze M, Seedat M, Suffla S, Kramer S. Community conversations as community engagement: Hosts' reflections. S Afr J Psychol. 2013; 43(4): 1-12.

263. Megwa ER. Community radio stations as community technology centers: An evaluation of the development impact of technological hybridization on stakeholder communities in South Africa. J Radio Stud. 2007; 14: 49-66.

264. Filep B. Interview and translation strategies: Coping with multilingual settings and data. Soc Geogr. 2009; 4: 59-70.

265. Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol. 2006; 3(2): 77-101.

266. Thorne S, Kirkham SR, O'Flynn-Magee K. The analytic challenge in interpretive description. Int J Qual Methods. 2004; 3(1): Article 1.

267. Shenton A. Strategies for Ensuring Trustworthiness in Qualitative Research Projects. Educ Inform. 2004; 22(2): 63-75.

268. Billups F. The quest for rigor in qualitative studies: Strategies for institutional researchers. The NERA Researcher. 2014; 52(1): 1-5.

269. Abdulkarim M, Kawuwa MB, Kullima A. Community perception of maternal mortality in Northeastern Nigeria. Afr J Reprod Health. 2008; 12(3): 27-34.

270. Okonofua FE, Ntoimo LFC, Ogu RN. Women's perceptions of reasons for maternal deaths: Implications for policies and programs for preventing maternal deaths in low-income countries. Health Care Women Int. 2018; 39(1): 95-109.

271. Okonofua F, Hammed A, Nzeribe E, Saidu B, Abass T, Adeboye G, et al. Perceptions of policymakers in Nigeria toward unsafe abortion and maternal mortality. Int Perspect Sex Reprod Health. 2009; 35(4):194-202.

272. Adika DM, Chutiyami M, Dathini H, Adamu H. Maternal mortality in Ghana: An exploration of partners' perception about factors that contributed to their wife's death. Int J Community Med Public Health. 2017; 4(11): 4018-24.

273. Lowe M, Chen DR, Huang SL. Social and cultural factors affecting maternal health in rural Gambia: an exploratory qualitative study. PLoS One. 2016; 11(9): e0163653.

274. Muoghalu CO. Socio-economic and cultural factors in maternal mortality in Nigeria. Gender and behaviour. 2010; 8(2): 3226-39.

275. Lawoyin TO, Lawoyin OO, Adewole DA. Men's perception of maternal mortality in Nigeria. J Public Health Policy. 2007; 28(3): 299-318.

276. United Nations Development Programme. Discussion Paper: A social Determinants Approach to Maternal Health [Internet]. New York: United Nations Development Programme; 2011. Available from http://www.undp.org/content/undp/en/home/librarypage/democratic-governance/a-social-determinants-approach-to-maternal-health.html.

277. Igberase GO, Isah EC, Igbekoyi OF. Awareness and perception of maternal mortality among women in a semi-urban community in the Niger Delta of Nigeria. Ann Afr Med. 2009; 8(4): 261-5.

278. Adam VY, Awunor NS. Perceptions and factors affecting utilization of health services in a rural community in southern Nigeria. Br J Med Med Res. 2014; 13(2): 117-24.

279. Taiwo AO, Yekinni T, Thomas K. Perceptions of use of maternal healthcare services in rural communities of Osun state. J Agric Ext Rural Dev. 2018; 11: 6-10.

280. Moronkola OA, Omonu JB, Iyayi DA, Tiamiyu MA. Perceived determinants of the utilization of maternal health-care services by rural women in Kogi State, Nigeria. Tropical Doctor. 2007; 37(2): 94-6.

281. Adekunle LV. Problems and progress of obstetric care in Nigeria: Home or hospital delivery? Views from a rural community. Trop J Obstet Gynaecol. 2002; 19: 82-3.

282. Vallely LM, Homiehombo P, Kelly AM, Vallely A, Homer CS, Whittaker A. Exploring women's perspectives of access to care during pregnancy and childbirth: A qualitative study from rural Papua New Guinea. Midwifery. 2013; 29(10):1222-9.

283. Gabrysch S, Cousens S, Cox J, Campbell OMR. Distance and quality of care strongly influence choice of delivery place in rural Zambia: a study linking national data in a Geographic Information System. J Epidemiol Community Health. 2011; 65: A42.

284. Okafor CB, Rizzuto RR. Women's and health-care providers' views of maternal practices and services in rural Nigeria. 1994; 25(6): 353–61.

285. Mbiza CR, Kazembe A, Simwaka A. Barriers to health-seeking practices during pregnancy among adolescents in rural Blantyre, Malawi. Afr J Midwifery Womens Health. 2014;8(2):59-65.

286. Azuogu VC, Azuogu BN, Nwonwu EU. Factors affecting utilization of skilled provider antenatal care in the rural communities of Ebonyi State, Nigeria. West African J Nursing. 2011;22(1):75-84.

287. Spangler SA, Bloom SS. Use of biomedical obstetric care in rural Tanzania: The role of social and material inequalities. Soc Sci Med. 2010; 71(4):760-8.

288. Turan JM, Hatcher AH, Medema-Wijnveen J, Onono M, Miller S, Bukusi EA, et al. The role of HIV-related stigma in utilization of skilled childbirth services in rural Kenya: A prospective mixed-methods study. PLoS Med. 2012; 9(8):e1001295.

289. Mazalale J, Kambala C, Brenner S, Chinkhumba J, Lohmann J, Mathanga DP, et al. Factors associated with delivery outside a health facility: Cross-sectional study in rural Malawi. Trop Med Int Health. 2015; 20(5):617-26.

290. Dimbuene ZT, Amo-Adjei J, Amugsi D, Mumah J, Izugbara CO, Beguy D. Women's education and utilization of maternal health services in Africa: A multi-country and socioeconomic status analysis. J Biosoc Sci. 2017; 50(6):725-48.

291. Bayou NB, Gacho YHM. Utilization of clean and safe delivery service package of health services extension program and associated factors in rural kebeles of Kafa Zone, Southwest Ethiopia. Ethiopian J Health Sci. 2013;23(2):79-89.

292. Geleto A, Chojenta C, Musa A, Loxton D. Barriers to access and utilization of emergency obstetric care at health facilities in sub-Saharan Africa: A systematic review of literature. Syst Rev. 2018; 7:183.

293. Osaro BO, Tobin-West CI, Mezie-Okoye MM. Knowledge of modern contraceptives and their use among rural women of childbearing age in Rivers State Nigeria. Ann Trop Med Public Health. 2017; 10(4):1043-8.

294. Ugo O, Eze-Akoju E, Modupe O, Nicole S, Ekezie W, Ohiri K. Improving quality of care in primary health-care facilities in rural Nigeria: Successes and Challenges. Health Serv Res Manag Epidemiol. 2016.

295. Sakeah E, McCloskey L, Bernstein J, Yeboah-Antwi K, Mills S, Doctor HV. Is there any role for community involvement in the community-based health planning and services skilled delivery program in rural Ghana? BMC Health Serv Res. 2014;14:340.

296. Hounton S, Byass P, Brahima B. Towards reduction of maternal and perinatal mortality in rural Burkina Faso: communities are not empty vessels. Glob Health Action. 2009; 2: 10.3402/gha.v2i0.1947.

297. Barros AJD, Ronsmans C, Axelson H, Loaiza E, Bertoldi AD, Fransa GVA, et al. Equity in maternal, newborn, and child health interventions in Countdown to 2015: A retrospective review of survey data from 54 countries. Lancet. 2012; 379 (9822): 1225-33.

298. Walt G. Can interest groups influence government policy? Health policy. An introduction to health policy and power. London: Zed Publications; 1994.

299. Chol C, Hunter C, Debru B, Haile B, Negin J, Cumming RG. Stakeholders' perspectives on facilitators of and barriers to the utilization of and access to maternal health services in Eritrea: A qualitative study. BMC Pregnancy Childbirth. 2018;18:35.

300. Ganle JK, Parker M, Fitzpatrick R, Otupiri E. A qualitative study of health system barriers to accessibility and utilization of maternal and newborn healthcare services in Ghana after user-fee abolition. BMC Pregnancy and Childbirth. 2014;14:425.

301. Idris SH, Sambo MN, Ibrahim MS. Barriers to utilization of maternal health services in semi-urban community in northern Nigeria: The client's perspective. Niger Med J. 2013; 54:27-32.

302. Yar'zever IS, Said IY. Knowledge and barriers in utilization of maternal health care services in Kano State, Northern Nigeia. EJBMSR. 2013; 1: 1-14.

303. Mboane R, Bhatta MP. Influence of a husband's healthcare decision making role on a woman's intention to use contraceptives among Mozambican women. Reprod Health. 2015; 12: 36.

304. Ganle JK, Obeng B, Segbefia AY, Mwinyuri V, Yeboah JY, Baatiema L. How intra-familial decision-making affects women's access to, and use of maternal healthcare services in Ghana: A qualitative study. BMC Pregnancy Childbirth. 2015; 15:173.

305. Kaiser JL, Fong RM, Hamer DH, Biemba G, Ngoma T, Tusing B, et al. How a woman's interpersonal relationships can delay care-seeking and access during the maternity period in rural Zambia: An intersection of the Social Ecological Model with the Three Delays Framework. Soc Sci Med. 2019; 220: 312-21.

306. Treacy L, Bolkan HA, Sagbakken. Distance, accessibility and costs. Decision-making during childbirth in rural Sierra Leone: A qualitative study. PLoS One. 2018; 13(2): e0188280.

307. John TW, Mkoka DA, Frumence G, Goicolea I. An account for barriers and strategies in fulfilling women's right to quality maternal health care: A qualitative study from rural Tanzania. BMC Pregnancy Childbirth. 2018; 18:352.

308. Ebuehi OM, Campbell PC. Attraction and retention of qualified health workers to rural areas in Nigeria: A case study of four LGAs in Ogun State, Nigeria. Rural Remote Health. 2011;11:1515.

309. Say L, Raine R. A systematic review of inequalities in the use of maternal health care in developing countries: examining the scale of the problem and the importance of context. Bull World Health Organ. 2007; 85(10):812-9.

310. Amponsah E, Moses I. Expectant mothers and the demand for institutional delivery: do household income and access to health information matter? Some insight from Ghana. Eur J Soc Sci. 2009;8(3):469-82.

311. Betjeman TJ, Soghoian SE, Foran MP. mHealth in sub-Saharan Africa. Int J Telemed Appl. 2013; 2013: 482324.

312. Colaci D, Chaudhri S, Vasan A. mHealth Interventions in Low-Income Countries to address maternal health: A systematic review. Ann Glob Health. 2016; 82(5): 922-35.

313. Oyeyemi SO, Wynn R. Giving cell phones to pregnant women and improving services may increase primary health facility utilization: A case-control study of a Nigerian project. Reprod Health. 2014; 11:8.

314. World Health Organization. Ghanaian health workers use mobile phones to collect real-time maternal health data [Internet]. World Health Organization. 2016 (cited on 2019Aug26). Available from https://www.who.int/news-room/feature-stories/detail/ghanaian-health-workers-use-mobile-phones-to-collect-real-time-maternal-health-data.

315. Mushamiri I, Luo C, Liams-Hauser C, Amor YB. Evaluation of the impact of a mobile health system on adherence to antenatal and postnatal care and prevention of mother-to-child transmission of HIV programs in Kenya. BMC Public Health. 2015; 15: 102.

316. Hackett K, Lafleur C, Nyella P, Ginsburg O, Lou W, Sellen D. Impact of smartphone-assisted prenatal home visits on women's use of facility delivery: Results from a cluster-randomized trial in rural Tanzania. PLoS One. 2018; 13(6): e0199400.

317. Global System for Mobile Communications Association. The mobile economy sub-Saharan Africa 2015 [Internet]. London: GSMA; 2015. Available from https://www.gsma.com/mobileeconomy/archive/GSMA_ME_SubSaharanAfrica_2015.pdf.

318. Forenbacher I, Husnjak S, Cvitic I, Jovovic I. Determinants of mobile phone ownership in Nigeria. Telecommun Policy. 2019; 43(7): 101812.

319. Mahmud N, Rodriguez J, Nesbit J. A text message-based intervention to bridge the healthcare communication gap in the rural developing world. Technol Health Care. 2010; 18(2): 137-44.

320. Sambira J. Africa's mobile youth drive change. Cell phones reshape youth cultures [Internet]. Africa Renewal. 2013 [cited 2019July20]. Available from https://www.un.org/africarenewal/magazine/may-2013/africa%E2%80%99s-mobile-youth-drive-change.

321. Fogliati P, Straneo M, Mangi S, Azzimonti G, Kisika F, Putoto G. A new use for an old tool: maternity waiting homes to improve equity in rural childbirth care. Results from a cross-sectional hospital and community survey in Tanzania. Health Policy Plan. 2017; 32(10): 1354-60.

322. Dadi TL, Bekele BB, Kasaye HK, Nigussie T. Role of maternity waiting homes in the reduction of maternal death and stillbirth in developing countries and its contribution for maternal death reduction in Ethiopia: A systematic review and meta-analysis. BMC Health Serv Res. 2018; 18: 748.

323. Aregbeshola B. Health care in Nigeria: Challenges and recommendations [Internet]. Socialprotection.org. 2019 [cited 2019Aug28]. Available from https://socialprotection.org/discover/blog/health-care-nigeria-challenges-and-recommendations.

324. Bhutta AZ, Lassi ZS, Pariyo G, Huicho L. Global Experience of Community Health Workers for Delivery of Health-Related Millennium Development Goals: A Systematic Review, Country Case Studies, and Recommendations for Integration into National Health Systems [Internet]. Geneva: World Health Organization; 2010. Available from http://chwcentral.org/sites/default/files/Global%20Experience%20of%20Community%20Health%20Workers%20for%20Delivery%20of%20Health%20Related%20Millennium%20Development%20Goals.pdf.

325. Eckermann L. Finding a 'safe' place on the risk continuum: A case study of childbirth in Lao PDR. Health Sociol Rev. 2006; 15(4): 374-86.

326. Gunguwo H, Zachariah R, Bissell K, Ndebele W, Moyo J, Mutasa-Apollo T. A 'one-stop shop' approach in antenatal care: Does this improve antiretroviral treatment uptake in Zimbabwe? Public Health Action. 2013;3(4):282-5.

## PAPER 2 ETHICS APPROVAL FORMS

**National Health Research Ethics Committee of Nigeria (NHREC)**

Promoting Highest Ethical and Scientific Standards for Health Research in Nigeria

Federal Ministry of Health

**NHREC Protocol Number NHREC/01/01/2007-10/04/2017**
**NHREC Approval Number NHREC/01/01/2007-18/04/2017**
**Date: 18 April, 2017**

**Re: Increasing Women's Access to Skilled Pregnancy Care to Reduce Maternal and Perinatal Mortality in Nigeria**


Name of Principal Investigator: Professor Friday Ebhodaghe Okonofua
Address of Principal Investigator: Department of Obstetrics and Gynecology
College of Medical Sciences, University of Benin,
Benin City, Edo State
Phone: 0802 3347 828;


Date of receipt of valid application: 10/03/2017
Date when final determination of research was made: 18/04/2017

**Notice of Expedited Committee Review and Approval**

This is to inform you that the research described in the submitted protocol, the consent forms, advertisements and other participant information materials have been reviewed and *given expedited committee approval by the National Health Research Ethics Committee.*

This approval dates from 18/04/2017 to 17/04/2018. If there is delay in starting the research, please inform the HREC so that the dates of approval can be adjusted accordingly. Note that no participant accrual or activity related to this research may be conducted outside of these dates. *All informed consent forms used in this study must carry the HREC assigned number and duration of HREC approval of the study.* In multiyear research, endeavour to submit your annual report to the HREC early in order to obtain renewal of your approval and avoid disruption of your research.

*The National Code for Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations and with the tenets of the Code including ensuring that all adverse events are reported promptly to the HREC. No changes are permitted in the research without prior approval by the HREC except in circumstances outlined in the Code. The HREC reserves the right to conduct compliance visit your research site without previous notification.*

Professor Zubairu Iliyasu MBBS (UniMaid), MPH (Glasg.), PhD (Shef.), FWACP, FMCPH
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Université d'Ottawa
Bureau d'éthique et d'intégrité de la recherche

University of Ottawa
Office of Research Ethics and Integrity

## CERTIFICAT D'APPROBATION ÉTHIQUE | CERTIFICATE OF ETHICS APPROVAL

| | |
|---|---|
| **Numéro du dossier / Ethics File Number** | H-03-19-3566 |
| **Titre du projet / Project Title** | A qualitative study of community elders' perceptions about maternal death and under-utilization of formal care in rural Nigeria |
| **Type de projet / Project Type** | Thèse de maîtrise / Master's thesis |
| **Statut du projet / Project Status** | Approuvé / Approved |
| **Date d'approbation (jj/mm/aaaa) / Approval Date (dd/mm/yyyy)** | 18/03/2019 |
| **Date d'expiration (jj/mm/aaaa) / Expiry Date (dd/mm/yyyy)** | 17/03/2020 |

### Équipe de recherche / Research Team

| Chercheur / Researcher | Affiliation | Role |
|---|---|---|
| Arone FANTAYE | École interdisciplinaire des sciences de la santé / Interdisciplinary School of Health Sciences | Chercheur Principal / Principal Investigator |
| Sanni YAYA | École de développement international et mondialisation / School of International Development and Global Studies | Superviseur / Supervisor |

**Conditions spéciales ou commentaires / Special conditions or comments**

Université d'Ottawa
Bureau d'éthique et d'intégrité de la recherche

University of Ottawa
Office of Research Ethics and Integrity

Le Comité d'éthique de la recherche (CÉR) de l'Université d'Ottawa, opérant conformément à l'*Énoncé de politique des Trois conseils* (2014) et toutes autres lois et tous règlements applicables, a examiné et approuvé la demande d'éthique du projet de recherche ci-nommé.

L'approbation est valide pour la durée indiquée plus haut et est sujette aux conditions énumérées dans la section intitulée "Conditions Spéciales ou Commentaires". Le formulaire « Renouvellement ou Fermeture de Projet » doit être complété quatre semaines avant la date d'échéance indiquée ci-haut afin de demander un renouvellement de cette approbation éthique ou afin de fermer le dossier.

Toutes modifications apportées au projet doivent être approuvées par le CÉR avant leur mise en place, sauf si le participant doit être retiré en raison d'un danger immédiat ou s'il s'agit d'un changement ayant trait à des éléments administratifs ou logistiques du projet. Les chercheurs doivent aviser le CÉR dans les plus brefs délais de tout changement pouvant augmenter le niveau de risque aux participants ou pouvant affecter considérablement le déroulement du projet, rapporter tout évènement imprévu ou indésirable et soumettre toute nouvelle information pouvant nuire à la conduite du projet ou à la sécurité des participants.

The University of Ottawa Research Ethics Board, which operates in accordance with the *Tri-Council Policy Statement* (2014) and other applicable laws and regulations, has examined and approved the ethics application for the above-named research project.

Ethics approval is valid for the period indicated above and is subject to the conditions listed in the section entitled "Special Conditions or Comments". The "Renewal/Project Closure" form must be completedfour weeks before the above-referenced expiry date to request a renewal of this ethics approval or closure of the file.

Any changes made to the project must be approved by the REB before being implemented, except when necessary to remove participants from immediate endangerment or when the modification(s) only pertain to administrative or logistical components of the project. Investigators must also promptly alert the REB of any changes that increase the risk to participant(s), any changes that considerably affect the conduct of the project, all unanticipated and harmful events that occur, and new information that may negatively affect the conduct of the project or the safety of the participant(s).

Kim THOMPSON
Responsable d'éthique en recherche / Protocol Officer
Pour/For **Daniel LAGAREC** Président(e) du/ Chair of the **Comité d'éthique de la recherche en sciences sociales et humanités** / **Social Sciences and Humanities Research Ethics Board**

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## APPENDICES

**Appendix 3.1** Systematic Review of Preferences for Maternal Care Sources – Search Strategy

Database: Embase Date of Search: February 3, 2019

| Search Step | Search Terms | Records Retrieved |
|---|---|---|
| **1** | Maternal health service/ | **1245** |
| **2** | Nurse midwifery/ or exp antenatal care/ or exp postnatal care/ or exp prenatal care/ or exp prepregnancy care/ | **294391** |
| **3** | Birth/ | **17702** |
| **4** | ((obstetric* or maternal or prenatal* or postnatal* or birth* or postpartum or neonatal or midwife* or midwives) adj3 (care or service*)).ti,ab,kw. | **56586** |
| **5** | Family planning/ | **23915** |
| **6** | (family planning adj3 service*).ti,ab,kw. | **3051** |
| **7** | 1 or 2 or 3 or 4 or 5 | **364501** |
| **8** | Rural area/ | **47994** |
| **9** | Rural health/ | **584** |
| **10** | exp rural health care/ | **41295** |
| **11** | Rural population/ | **52192** |
| **12** | rural.ti,ab,kw. | **120058** |
| **13** | ((remote* or isolated or secluded or inaccessible) adj3 (area? or region? or territor* or sector? or localit* or dwelling or service* or hospital*)).ti,ab,kw. | **15857** |
| **14** | 8 or 9 or 10 or 11 or 12 or 13 | **187413** |

| | | |
|---|---|---|
| **15** | exp Africa/ | **235451** |
| **16** | (Algeria or Angola or Benin or Botswana or Burkina Faso or Burundi or Cameroon or Cape Verde or Central African Republic or Chad or Congo or Ivory Coast or Djibouti or Egypt or Eritrea or Ethiopia or Gabon or Gambia or Ghana or Guinea or Kenya or Lesotho or Liberia or Libya or Madagascar or Malawi).ti,ab,kw. | **192350** |
| **17** | (Mali or Mauritania or Mauritius or Morocco or Mozambique or Namibia or Niger or Nigeria or Reunion or Rwanda or Senegal or Seychelles or Sierra Leone or Somalia or South Africa or Sudan or Swaziland or Tanzania or Togo or Tunisia or Uganda or Zambia or Zimbabwe).ti,ab,kw. | **126278** |
| **18** | Africa*.ti,ab,kw. | **205562** |
| **19** | 15 or 16 or 17 or 18 | **659543** |
| **20** | 7 and 14 and 19 | **2114** |
| **21** | limit 20 to (english language and yr="2001-Current") | **1518** |
| **22** | (“abstract” or “books” or "book review" or “chapter” or “conference abstract” or “conference paper” or "conference review" or “editorial” or “erratum” or “letter” or “note” or “patent” or “reports” or "review").pt | **3819992** |
| **23** | 21 not 22 | **1005** |

**Appendix 3.2** Description of Included Studies (expanded)

| **Study** | **Aim (s)** | **Study Setting** | **Sample Characteristics** | **Data Collection Methods** | **Main Preferences** |
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| Adinew et al. 2018 | To explore why some women still give birth at home even after receiving clinical ANC | Ethiopia | 68 women who had received clinical ANC service for their most recent childbirth, but no recent facility-based childbirth; 40 women had received some formal education; 45 women were multiparous | • In-depth interviews<br>• Focus group discussions | Traditional childbirth care at or near home |
| Adinew & Assefa, 2017 | To explore why some women who had previous experience of facility-based delivery gave birth at home for their most recent child | Ethiopia | 88 women who gave birth to at least one of their previous children in the health facility within 5 years of data collection but gave birth to their most recent child (within 12 months of data collection) at home; 72 women had some formal education; all were multiparous | • Focus group discussions<br>• Key informant interviews | Traditional childbirth care at or near home |
| Ahmed et al. 2018 | To understand the sociocultural determinants of assisted childbirth by nomadic women. | Mali | 26 women (18-40 years) who gave birth 3 months preceding data collection were included in the study; all 26 women were married; none had any formal education; *all 26 women were Muslim; 24 women were multiparous | Semi structured interviews | • Traditional childbirth care at or near home<br>• Formal childbirth care in a health facility |
| Allou 2018 | To determine the factors that influence women's patronization and preference of TBAs and their services in the Tolon district | Ghana | 360 women who had sought the services of traditional birth attendants within 5 years of data collection; 165 women with some formal education; majority were multiparous | Open-ended questionnaires (interviews) | Traditional childbirth care at or near home |
| Al-Mujtaba et al. 2016 | To evaluate for and compare and contrast faith-related barriers | Nigeria | 57 pregnant ANC attendees, HIV positive women, and young women of childbearing | Focus group discussions | Formal antenatal and childbirth care in a health facility |

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| | ANC and PMTCT services utilization among Muslim and Christian women | | age; 54 married women; 52 women with some formal education; 39 Christian women and 18 Muslim women; most were multiparous | | |
| Bazzano et al. 2008 | To examine the social costs of skilled attendance at birth to women | Ghana | • 14 older mothers/grandmothers<br>• 45 mothers<br>• 28 case histories from women who had recently given birth | • In-depth interviews<br>• Semi-structured interviews<br>• Focus group discussions | Traditional childbirth care at home |
| Bedford et al. 2012 | To identify reasons why women who access health facilities and utilise maternal newborn and child health services at other times, do not deliver at health facilities | Ethiopia | • 30 mothers who had recently delivered (primiparous, multiparous, and grand-multiparous) within 7 months of the study; 14 delivered in a health facility, 14 at home, 1 at a health post, 1 on the roadside<br>• 16 pregnant women (primiparous, multiparous, and grand-multiparous) | Semi-structured interviews | • Traditional childbirth care for normal childbirth at or near home<br>• Formal childbirth care in a health facility, especially during complicated childbirth |
| Caulfield et al. 2016 | To investigate the sociodemographic factors and cultural beliefs and practices that influence place of delivery for pastoralist women in Laikipia and Samburu | Kenya | Women who had delivered within 2 years of data collection with a traditional birth attendant, skilled birth attendant, or neither | Focus group discussions | Traditional childbirth care at or near home |
| Chea et al. 2018 | To describe the prevalence and correlates of home delivery among HIV-infected women attending care at a rural public health | Kenya | 30 HIV-infected women (18-49 years); *majority were married (monogamous); *majority had some formal education; majority were Christian; 12 delivered | Focus group discussions | Formal childbirth care in a health facility |

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| | facility in Kilifi | | at home, 18 at a health facility | | |
| Cofie et al. 2015 | To explore how birth location preferences influenced women's pregnancy and labor experiences, and the resultant impact on their birth outcomes | Ghana | 20 mothers of childbearing age who experienced pregnancy, labor or postnatal complications and mothers whose newborns experienced complications | Semi-structured interviews | • Traditional childbirth care at or near home as a first line of care, but facility-based care when complications arise<br>• Formal childbirth and postnatal care in a health facility as a first line of care |
| Dahlberg et al. 2015 | To understand the individual, family and community factors that influence a woman's choice of place of childbirth in rural Busia | Kenya | • 4 HIV positive mothers and 9 HIV negative mothers of children under 2 years of age; 12 had given birth to their most recent baby in a healthcare facility<br>• Older women (aunts, mothers-in law and grandmothers) | • In depth interviews<br>• Focus group discussions | • Traditional childbirth care at home<br>• Formal antenatal and childbirth care in a health facility |
| De Allegri et al. 2015 | To explore why some women give birth at home while others give birth in a health facility | Burkina Faso | Women who had recently delivered in a health facility or at home | Open-ended questionnaires (interviews) | • Traditional childbirth care at home<br>• Formal childbirth and early postnatal care in a health facility |
| Dodzo & Mhloyi 2017 | To explore reasons why community deliveries are getting more attractive and being preferred by women | Zimbabwe | 108 women of reproductive age (14-49 years); 86 were married; 97 had some formal education | Focus group discussions | Traditional childbirth and postnatal care at or near home |
| Engmann et al. 2013 | To explore the beliefs and experiences of pregnant women seeking antenatal care in rural Ghana and to | Ghana | 85 women who were 27 or more weeks pregnant (18-41 years); 75 women were married; 78 women had some formal education; 75 women | Semi-structured interviews | Formal childbirth care in a health facility |

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| | understand the barriers to skilled birth attendants and health facility delivery | | were Christian and 10 were Muslims | | |
| Ganle 2015 | To explore maternity healthcare needs and care experiences of Muslim women and the barriers to accessing and using maternal health services | Ghana | 94 women (15-45 years) who were pregnant at the time of data collection or who had given birth between January 2011 and May 2012; 64 were married; 37 had some formal education; all 94 women were Muslim | • Focus group discussions<br>• Individual interviews | • Traditional antenatal and childbirth care at or near home<br>• Formal antenatal and childbirth care in a health facility |
| Ibrhim et al. 2018 | To explore why women in the pastoralist region of Afar still prefer to give birth at home despite the remarkable improvements made in the accessibility of health facilities | Ethiopia | • 60 women who had children less than 24 months of age; majority were married; majority of the women had no formal education; all women were Muslim; 47 women gave birth at home with a TBA, 13 at a health facility<br>• 48 grandmothers; majority of the grandmothers were married; majority of the grandmothers were uneducated; all grandmothers were Muslim | Focus group discussions | Traditional childbirth care at or near home |
| Igboanugo & Martin 2011 | To identify pregnant women's perceptions of conventional maternity service provision in the Niger Delta regions | Nigeria | 8 pregnant women (24-35 years) who recently accessed maternity services; 2 primigravidas and 6 multigravidas | Semi-structured interviews | • Traditional antenatal and childbirth care at or near home<br>• Formal antenatal and childbirth care in a health facility |
| Jacobs et al. 2018 | To explain why one ANC visit with a skilled provider seemed more common than four | Zambia | 38 mothers (18-45 years) of children below 12 months old; 36 women were married; about one- | Focus group discussions | • Traditional antenatal care in early months and formal antenatal care in |

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| | ANC visits among women in the poorest rural districts | | third had some formal education; all mothers were multiparous | | the later months<br>• Formal antenatal care in a health facility |
| Kea et al. 2018 | To identify factors influencing the use of maternal health services at the primary health care unit level in Sidama zone | Ethiopia | 18 women who had given birth in the previous 2 years or were pregnant at the time of data collection; *all women were married; most women were Christian | • Focus group discussions<br>• In-depth interviews | • Traditional antenatal care in the early months, followed by skilled antenatal care in the later months<br>• Traditional childbirth care at or near home |
| King et al. 2015 | To explore the barriers and facilitators to accessing skilled birth attendance in Afar Region | Ethiopia | 33 women (17-49 years); 30 women were married; all women were Muslim; most women were multiparous | Semi-structured interviews | • Traditional childbirth care at or near home<br>• Formal childbirth care in a health facility |
| Kumbani et al. 2013 | To explore the reasons why women delivered at home without skilled attendance despite receiving antenatal care at a health centre and their perceptions of perinatal care | Malawi | 12 mothers (20-32 years) who delivered outside a health facility within 3 months of the study; all were married; 11 had some formal education; 11 were multiparous | In-depth interviews | Formal childbirth care in a health facility |
| Kwagala 2013 | To examine what factors influence choice of place of delivery among the Sabiny | Uganda | • *2 young women (15-24 years); *both were married; *both had some formal education; *both were Christian<br>• *3 middle-aged women (25-35 years); all were married; *all had some formal education; *all were Christian<br>• *3 older women (over 36 years); * all were married; *all | • Focus group discussions<br>• In depth interviews | • Traditional childbirth and postnatal care at or near home<br>• Formal childbirth and postnatal care in a health facility |

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| | | | had some formal education; *all were Christian | | |
| Kyomuhendo 2003 | To enhance the understanding of why, when faced with complications of pregnancy or delivery, women still choose high risk options leading to severe morbidity and potentially death | Uganda | Women over 15 years of age; most were married | Focus group discussions | Traditional childbirth and postnatal care at or near home |
| Magoma et al. 2010 | To gain an understanding of the socio-cultural and health systems factors that influence women's decisions to seek antenatal, skilled delivery and immediate post-partum care | Tanzania | 66 women seeking antenatal care, childbirth care and postnatal care at a health unit | • Focus group discussions<br>• Key informant interviews | • Traditional antenatal, childbirth and postnatal care at or near home. Preference for traditional childbirth care for normal births<br>• Formal antenatal and childbirth care in a health facility |
| Mason et al. 2015 | To explore why some women access antenatal or delivery care in formal health facilities in the western Kenya context whilst many do not. | Kenya | • 18 adolescents (15-18 years)<br>• 29 women of childbearing age (15-49 years)<br>• 17 recently or currently pregnant women<br>• 9 mothers of child born with an abnormality | Focus group discussions | • Traditional childbirth care at or near home<br>• Formal childbirth and postnatal care in a health facility |
| Mathole et al. 2004 | • To explore the contexts as well as the social and cultural factors that influence ANC utilisation and how women and health care | Zimbabwe | 44 women (19-46 years) | • Focus group discussions<br>• Interviews | • Formal antenatal care in a health facility<br>• Early traditional antenatal care and later formal antenatal care |

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| | providers reason around pregnancy and the care of pregnancy<br>• To describe the perspectives and experiences of women in their use of antenatal care and in their reasoning on specific antenatal care routines | | | | |
| Moyer et al. 2014 | To explore the impact of social factors on place of delivery, particularly on the impact of community and familial social structures and the role of cultural practices surrounding childbirth | Ghana | • 35 women with newborn infants<br>• 81 grandmothers who had at least one grandchild within the past year of data collection | • In-depth interviews<br>• Focus group discussions | • Traditional childbirth care at home<br>• Formal childbirth care in a health facility |
| Myer & Harrison 2003 | To investigate factors affecting the utilisation of antenatal care services among pregnant women | South Africa | • 22 women (17-37 years) seeking antenatal care at a clinic; 14 women were married or in a committed relationship; majority of the women had formal education; 5 primigravidas<br>• 7 women who had syphilis | Semi-structured interviews | Formal antenatal and childbirth care in a health facility |
| Ndirima et al. 2018 | To understand women's perceptions of the quality of non-clinical aspects of care that they consider important during | Rwanda | 20 women (18-43 years) who had delivered in the district hospital within 10 weeks prior to the start of the study; 10 women were primiparous (3 caesarean sections); 10 | In-depth interviews | Formal antenatal and childbirth care in a health facility |

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| | childbirth | | women were multiparous (3 caesarean sections) | | |
| Okafor et al. 2014 | To determine the preferred choice of maternity healthcare and determinants for pregnant and delivery services among rural women | Nigeria | 25 women (20-42 years) who delivered a baby in the previous 2 years prior to the study; at least 13 women completed some formal education | Focus group discussions | • Traditional antenatal and childbirth care in any domestic setting. Preference for traditional antenatal care for a normal pregnancy and formal antenatal care if pregnancy becomes abnormal<br>• Formal childbirth and early postnatal care in a health facility |
| Osubor et al. 2006 | To assess maternal health services and health-seeking behavior | Nigeria | • Teenage girls (15-19 years); most were Christian<br>• Women of childbearing age (20-49 years) and of parity of not more than 4 children; most women had some formal education; most women were Christian<br>• Women in post-childbearing period (50 years and above); most women had some formal education; most women were Christian | Focus group discussions | • Traditional antenatal childbirth care in a traditional setting<br>• Formal childbirth care in a health facility |
| Pfeiffer & Mwaipopo 2013 | • To describe women's health-seeking behavior and experiences regarding their use of antenatal and postnatal care as well as | Tanzania | 100 women who delivered at a clinic or with the support of a TBA within 2 months prior to data collection; 49 women were married; 65 women had some formal education; 39 women | • In-depth interviews<br>• Focus group discussions | • Traditional childbirth care at or near home<br>• Traditional childbirth care in a private and confidential environment<br>• Formal |

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| | their rationale behind the choice of place and deliver<br>• To learn about the use of traditional practices and resources applied by traditional birth attendants and how these might be linked to the biomedical health system | | were multiparous | | childbirth care in a health facility |
| Riang'a et al. 2018 | To explore how Kalenjin women in rural Uasing Gishu County perceive antenatal care and how their perceptions impede or motivate earlier access and continuous use of antenatal care services | Kenya | 188 women (16-45 years); 102 women who had at least 1 visit to an ANC during the current pregnancy; 86 women who had given birth within 1 month of data collection; 160 women were married; all 188 women had some formal education; *all women were Christian; 72 women were primigravidas, 116 were multigravidas | Open-ended questionnaires (interviews) | • Traditional antenatal care at or near home<br>• Traditional antenatal care for normal pregnancies and formal antenatal care for abnormal pregnancies<br>• Traditional antenatal care in early gestation and formal antenatal care in later gestation<br>• Formal antenatal care in a health facility |
| Seljeskog et al. 2006 | To identify the individual, community and health facility level factors influencing women's choice of place of delivery | Malawi | 6 women of *childbearing age who had delivered recently; *all women were married; *All women had some formal education; 3 gave birth at home and 3 at a health facility | In depth interviews | • Traditional childbirth and postnatal care at or near home<br>• Formal childbirth care in a health facility |
| Serizawa et al. 2014 | To explore cultural perceptions of and behaviors related | Sudan | 6 women (16-40 years) of reproductive age who had given birth | Semi structured interviews | • Traditional antenatal, childbirth and |

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| | to safe motherhood among Sudanese village women | | within 2-3 years prior to the study; all women were married; none completed any formal education; 2 of the younger women (16-30 years) were primiparous and multiparous; 4 of the older women (30-40 years) were multiparous | | postnatal care at or near home<br>• Irregular skilled antenatal care attendance |
| Shiferaw et al. 2013 | To understand why women might continue to prefer homebirths even when facility-based delivery are available at minimal cost | Ethiopia | 8 mothers (15-49 years); most women were married; most women were multiparous | Focus group discussions | • Traditional childbirth and early postnatal care at or near home. Preference for traditional childbirth care especially when childbirth is abnormal<br>• Formal childbirth care in a health facility, especially for a complicated childbirth |
| Sialubanje et al. 2015 | To identify reasons motivating women to have homebirths and prefer the assistance of traditional birth attendants | Zambia | 100 women of reproductive age (15-45 years) who had given birth within 1 year of study; 70 women were married; 93 women had some formal education; 50 were multiparous | Focus group discussions | • Traditional childbirth care at or near home<br>• Formal childbirth care in a health facility |
| Sisay et al. 2014 | To explore beliefs and values surrounding neonatal mortality and stillbirth among several generations of rural Ethiopian women | Ethiopia | • 63 grandmothers who had given birth to at least 1 child, who in turn had given birth to at least 1 child; none had any formal education; majority of the women were Christian<br>• 74 women who had any child under 5 years; all women | Focus group discussions | • Traditional childbirth care at home for normal childbirth<br>• Formal childbirth care in a health facility, especially for a complicated childbirth |

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| | | | were married; majority of the women were Christian<br>• 70 younger women (adolescent girls over 15 years); none were married; all women had some formal education; majority were Christian | | |
| Thwala et al. 2012 | To explore and describe the values, beliefs, and experiences of rural Swazi women on childbearing in the postpartum period | Swaziland | 15 women (over 18 years) who had at least 1 child and whose last-born child was 2 years old or less; all women were married; most women had some formal education; *14 women were affiliated with tribal religions and 1 with Catholicism; all were multiparous | Unstructured interviews | • Traditional childbirth care at or near home<br>• Formal childbirth care in a health facility |
| Wilunda et al. 2014 | To identify perceived barriers to utilization of institutional delivery care services in Moroto and Napak districts in Karamoka | Uganda | 459 women who had delivered in the past 5 years | Participatory rural appraisal | Traditional childbirth care at or near home |

* Additional data retrieved from authors of included studies.

**Appendix 3.3** Quality Appraisal by Checklist Item

| Reporting Criteria | Study References |
|---|---|
| Clear statement of aims: | |
| • goal of the research | 96, 104, 119, 120, 128, 130, 133, 136, 139-141, 187-204, 206-215 |
| • why it was thought vital | 96, 104, 119, 120, 128, 130, 133, 136, 139-141, 187-215 |
| • relevance | 96, 104, 119, 120, 128, 130, 133, 136, 139-141, 187-215 |
| Appropriateness of qualitative methodology: | |
| • research seeks to interpret actions/ subjective experiences of participants | 96, 104, 119, 120, 128, 130, 133, 136, 139-141, 187-215 |
| • qualitative research is the right methodology for addressing | 96, 104, 119, 120, 128, 130, 133, 136, 139-141, 187-215 |

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| aim (s) | |
| **Appropriateness of research design for aims:** | |
| • researcher has justified research design | 104, 120, 128, 136, 140, 141, 188, 190, 193, 198, 200, 201, 203, 208, 209, 212 |
| **Appropriateness of recruitment strategy for aims:** | |
| • researcher has explained how participants were selected | 96, 104, 119, 120, 128, 130, 136, 139-141, 187-191, 194, 196, 197, 199-204, 206-210, 212-215 |
| • explained why selected participants were most appropriate to provide access to type of knowledge sought by the study | 96, 104, 120, 128, 130, 139, 140, 187, 188, 190, 192, 197, 200, 202-204, 206-210, 211, 212, 214, 215 |
| • discussions around recruitment | 119, 120, 128, 130, 136, 139, 140, 187, 189, 190, 196, 202-204, 206, 213, 214 |
| **If data collection addresses the research issue:** | |
| • setting for data collection justified | 96, 119, 120, 128, 130, 136, 139, 141, 187-199, 201-212, 214, 215 |
| • clear how data was collected | 96, 119, 120, 128, 130, 133, 136, 139-141, 187-208, 210-215 |
| • justified chosen methods | 96, 104, 120, 128, 136, 139, 188, 194-197, 198, 201-203, 204, 205, 207, 209, 212, 213 |
| • methods explicitly described | 96, 104, 119, 120, 128, 130, 136, 139-141, 187-190, 192, 194-205, 207, 208, 210-215 |
| • if methods modified, explained how and why | 140, 141, 196, 202, 213 |
| • form of data clear | 96, 104, 119, 120, 128, 130, 133, 136, 139-141, 187-194, 196-208, 210-215 |
| • discussed saturation of data | 104, 119, 120, 130, 136, 140, 141, 188, 194, 196-198, 200, 202, 204, 205, 207, 212 |
| **If the relationship between researcher(s) and participants is adequately considered:** | |
| • researcher(s) critically examined their own role, potential bias and influence | 96, 128, 136, 188, 193, 196, 197, 199, 200, 203, 207, 212, 214 |
| • how researcher(s) responded to events during the study and considered implications of changes in the research design | 141, 187, 196, 202, 213 |
| **If ethical issues were taken into consideration:** | |
| • sufficient details of how research was explained to participants to show that ethical standards were maintained | 96, 104, 119, 120, 128, 130, 136, 140, 141, 187-191, 193, 196-202, 204, 206-208, 211-213, 215 |
| • discussed issues raised by the study | 133, 193, 196-198, 201, 204, 213, 215 |
| • approval sought from the ethics committee | 96, 104, 119, 120, 128, 130, 133, 136, 139-141, 187-194, 196-209, 211-215 |
| **If data analysis was sufficiently rigorous:** | |
| • in depth description of the analysis process | 119, 120, 128, 130, 136, 140, 141, 188, 190-192, 194, 196-198, 201-203, 204-206, 208, 212-215 |
| • clear how categories/themes derived (thematic analysis) | 119, 128, 130, 136, 140, 141, 188, 190, 192-194, 196, 199, 200, 204, 205, 208, 212-215 |
| • researcher(s) explain how the data presented were selected from the original sample to demonstrate the analysis process | 119, 120, 128, 136, 140, 141, 192, 194, 196-201, 203, 204, 206, 208, 210, 212-215 |
| • sufficient data are presented to support the findings | 96, 119, 120, 128, 130, 136, 139-141, 187, 188, 191, 193-201, 203-208, 210-215 |
| • contradictory data is considered | 96, 119, 120, 128, 130, 136, 140, 187-191, 193, 194, 198, 201, 203-207, 210, 211, 213-215 |
| • researcher critically examined their own role, potential bias and influence during analysis and selection of data for presentation | 96, 128, 136, 139, 141, 188, 192, 196, 199, 201, 203, 204, 206, 207, 211-215 |
| **Clear statement of findings:** | |
| • findings are explicit | 96, 104, 119, 120, 128, 130, 133, 136, 139-141, 187-215 |
| • adequate discussion of the evidence both for and against the researcher's arguments | 104, 120, 130, 140, 141, 187-190, 193, 194, 198, 202-204, 208, 210, 212, 214, 215 |
| • researcher has discussed the credibility of their findings | 96, 120, 128, 136, 139-141, 187, 193, 196, 197, 199, 201-203, 212-215 |
| • findings are discussed in relation to the original research question | 96, 104, 119, 120, 128, 130, 133, 136, 139-141, 187-215 |
| **Value of the research:** | |
| • discusses study contribution to existing knowledge | 96, 104, 119, 120, 128, 130, 136, 139-141, 187-215 |
| • identify new areas where research is necessary | 96, 119, 120, 128, 130, 139-141, 188, 190-193, 198, 201, 203-205, 207, 210, 212 |
| • discussed whether or how the findings can be transferred to other populations or considered other ways for research use | 104, 119, 120, 128, 136, 140, 141, 187, 192, 193, 196-199, 201, 203, 205, 207, 208, 210, 212-214 |

**Appendix 3.4** Summary of Review Findings for Formal Maternal Care

| Review Findings (sub-themes and summaries) | Contributing Studies | Methodological Limitations | Adequacy | Coherence | Relevance | CERQual Assessment | Explanation of Confidence in the Evidence Assessment |
|---|---|---|---|---|---|---|---|
| **Attendant capacity and technical competence -** Greater training and technical abilities of HCPs in providing maternal care influenced preferences for formal care. | **24 Studies** – Okafor, Al-Mujtaba, Ndirima, Dahlberg, Seljeskog, Myer, Igboanugo, Magoma, Mason, King, Osubor, Bedford, Moyer, Shiferaw, Engmann, Cofie, Thwala, Pfeiffer, De Allegri, Kumbani, Chea, Kwagala, Ahmed, Jacobs | Major methodological concerns in 2/24 studies and moderate methodological concerns in 6/24 studies | Rich data from a range of contexts | No or very minor concerns. Findings across studies are consistent and coherent | Minor concerns about relevance as one study was predominantly rural (84%), with 16% of participants being peri-urban/urban (Al-mujtaba). | Moderate confidence | Finding graded as moderate due to moderate to major methodological limitations in 8 of the studies and minor concerns in relevance to the review question |
| **Availability of resources -** Contrary to traditional care, facility-based services were preferred because of the presence of necessary personnel, equipment and supplies for various maternal services (e.g. health status assessments) | **12 Studies** - Pfeiffer, Chea, Osubor, Shiferaw, Igboanugo, Okafor, Al-Mujtaba, Dahlberg, Jacobs, Riang'a, Magoma, Mathole | Major methodological concerns in 1 study, moderate methodological concerns in 4/12 studies | Rich data from a range of contexts. 1 study covered preferences in both quantitative and qualitative sections, but there were fewer preferences and contributing factors reported in the qualitative component (Osubor) | Minor concerns about coherence given that shorter waiting time in particular contributed to preferences for private maternal care compared to public maternal care in 2 studies (Osubor, Igboanugo). | No or very minor concerns about relevance. Findings in accord with context of review question | Moderate confidence | Finding graded as moderate due to moderate to major methodological limitations in 5 of the studies |
| **Attendant attitudes and behaviors -** Preferences for | **9 Studies** – Al-mujtaba, King, Ganle, Kumbani, | Major methodological concerns in 1/9 studies. Moderate | Rich data from a range of contexts | No or very minor concerns. Findings | Moderate concerns about relevance as | Low confidence | Finding graded as low due to moderate to |

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| facilities that employed caring, considerate and sympathetic HCPs, as well as welcoming reception staff. | Cofie, Chea, Seljeskog, Osubor, Igboanugo | methodological concerns in 3/9 studies | | across studies are consistent and coherent | two studies were only predominantly rural and included a few urban participants (Al-Mujtaba, Ganle) | | major methodological limitations in 4 of the studies and moderate concerns of relevance to the review question |
| **Previous experiences -** Positive previous experiences in health facilities and poor previous traditional care experiences in a domestic setting contributed to preferences for maternal care. | **8 Studies** – Ndirima, Cofie, Ibrhim, Chea, Kumbani, Igboanugo, Osubor, Riang'a | Moderate methodological concerns in 3/8 studies | Minor concerns over adequacy of data. Despite the range of contexts, data is not rich on this finding | Minor concerns about coherence given that a range of previous experiences contributed to women's preferences for formal maternal care | No or very minor concerns about relevance. Finding in accord with context of review question | Moderate confidence | Finding graded as moderate because of the range of contexts and relevance to the review question, but moderate methodological limitations in 3 studies and minor concerns over coherence |
| **Fear of complications and death -** Fear of infections, birth complications, and death under the guidance of unskilled attendants contributed to preferences for facility-based care. | **6 Studies** – Ganle, Ahmed, Dahlberg, Thwala, Sialubanje, Jacobs | Minor methodological concerns in 2/6 studies | Minor concerns over adequacy of data given the moderate number of studies but rich data | Minor concerns about coherence given that women held a variety of fears that contributed to their preference for formal care | Minor concerns about relevance given that 1 of the studies had a few urban participants (Ganle) | High confidence | Finding graded as high because of rich data, minor concerns over coherence, and minor concerns about relevance of the finding to the review question |
| **Comfort and privacy -** Preferences for facilities that provided the user greater control of their surroundings, including | **5 Studies** – Ndirima, Igboanugo, Osubor, King, Ganle | Moderate methodological concerns in 1/5 studies | Minor concerns over adequacy of data given the moderate number of studies but rich data. 1 study covered preferences for formal sources | Minor concerns about coherence given that comfort was pertaining to degree of privacy in most studies, | Minor concerns about relevance given that 1 of the studies had a few urban participants | Moderate confidence | Finding graded as moderate because of rich data, but moderate methodological concerns in 1 study and minor |

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| privacy desires. | | | in both quantitative and qualitative sections, but there were fewer preferences and contributing factors reported in the qualitative component (Osubor) | but to other conditions including care-taker gender and experience in other studies | (Ganle) | | concerns over coherence and relevance to the review question |
| **Information, knowledge and awareness -** Maternal health education (e.g nutritional advice during ANC) at health facilities and increased knowledge and awareness of the significance of skilled maternal care contributed to preferences for formal maternal care. | **8 Studies** – Bedford, Moyer, Al-Mujtaba, Chea, Igboanugo, Magoma, Myer, Ndirima | Major methodological concerns in 1/8 studies and moderate methodological concerns in 1/8 studies. In 1 study, recordings were not used and full transcriptions with translations were not produced (Bedford) | Minor concerns about adequacy of data as the 8 studies together provided moderately rich data | No or very minor concerns. Findings across studies are consistent and coherent | Minor concerns about relevance given that one study was predominantly rural (84%), with 16% of participants being peri-urban/urban (Al-mujtaba). | Moderate confidence | Finding graded as moderate because of moderate to major methodological limitations in 2 studies, as well as minor concerns about relevance |
| **Costs and affordability -** Preferences for health facilities that provided cheaper services. | **2 Studies** – Okafor, Igboanugo | Moderate methodological concerns in 1/2 studies | Moderate concerns over adequacy of data due to the thin data from only 2 studies | Serious concerns in coherence given that there were no clear patterns in the finding. Some women preferred public health facilities for being more affordable while others preferred private health facilities for being more affordable | No or very minor concerns about relevance. Findings in accord with context of review question | Very low confidence | Finding graded as very low because of moderate methodological concerns in 1 study, small range of contexts, thin data, and serious concerns over coherence |
| **Social pressure -** Preferences for facility- | **3 Studies** - Bedford, Chea, | Moderate methodological concerns in 1/3 | Moderate concerns over adequacy of | No or very minor concerns. | No or very minor concerns | Low confidence | Finding graded as low because |

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| based services because it empowered women to visit a facility on their own accord and enabled women to avoid social pressures and stigma experienced during homebirths. | Magoma | studies. In 1 study, recordings were not used and full transcriptions with translations were not produced (Bedford) | data as data was retrieved from only 3 studies, despite moderately rich data. | Findings across studies are consistent and coherent | about relevance. Findings in accord with context of review question | | of the moderate methodological concerns in 1 study, small range of contexts, and moderate quantity of data |
| **Cultural norms -** Shift in cultural norms towards facility deliveries contributed to preferences for formal care. | **4 Studies** - Moyer, Engmann, Cofie, Kwagala | Major methodological concerns in 1/4 studies | Minor concerns about adequacy of data as the 4 studies together provided moderately rich data | No or very minor concerns. Findings across studies are consistent and coherent | No or very minor concerns about relevance. Finding in accord with context of review question | Moderate confidence | Finding graded as moderate because of the coherence of the finding and relevance of the finding to the review question, but major methodological limitations in 1 study and small range of contexts |
| **Religious beliefs and obligations -** Preferences for health facilities that provided religiously sensitive maternal care and respected religious obligations and needs. | **3 Studies** – Dahlberg, Ganle, Kwagala | Moderate methodological concerns in 1/3 studies | Major concerns over adequacy of data given the thin data from only 3 studies | No or very minor concerns. Findings across studies are consistent and coherent | Minor concerns about relevance given that 1 of the studies had a few urban participants (Ganle) | Very low confidence | Finding graded as very low because of moderate methodological concerns in 1 study, thin data, small range of contexts, and minor concerns in relevance to the review question |

**Appendix 3.5** Summary of Review Findings for Traditional Maternal Care

| Review Findings (sub-themes and summaries) | Contributing Studies | Methodological Limitations | Adequacy | Coherence | Relevance | CERQual Assessment | Explanation of Confidence in the Evidence Assessment |
|---|---|---|---|---|---|---|---|
| **Quality of care -** Traditional childbirth care preferred because of the poor quality of facility-based maternal care. | **3 studies-** King, Shiferaw, Caulfield | 1/3 studies with major methodological limitations | Substantial concerns over adequacy of data due to thin data from only 3 studies. Little elaboration in these studies on the finding | Moderate concerns about coherence given that poor quality of care is defined and interpreted in multiple ways by studies and participants | No or very minor concerns about relevance. Finding in accord with context of review question | Low confidence | Finding graded as low because of small range of contexts, thin quantity of data, and major methodological limitations in 1 of the studies |
| **Attendant capacity and competence -** TBAs and other CBAs were preferred for being most competent and compassionate when providing maternal care. They were also believed to have greater experience and skills in detecting, curing and managing complications. | **13 studies-** Sialubanje, Okafor, Kwagala, Ibrhim, Serizawa, Osubor, Caulfield, Wilunda, Magoma, Shiferaw, Thwala, Riang'a, Igboanugo | 2/13 studies with major methodological limitations, 2/13 studies with moderate methodological limitations | Rich data from a range of contexts | Minor concerns about coherence given that women considered different elements of worker capacity and competence when expressing their preferences for traditional care-takers | No or very minor concerns about relevance. Finding in accord with context of review question | Moderate confidence | Finding graded as moderate because 4 of the studies had moderate to major methodological limitations |
| **Availability of resources -** Equipment, supply, and drug shortages, as well as long waiting times in facilities contributed to preferences for traditional births. | **3 studies**- Ibrhim, Bedford, Seljeskog | 1/3 studies with major methodological limitations, 1/3 studies with moderate methodological limitations. In 1 study, recordings were not used and full transcriptions with translations were not | Substantial concerns over adequacy of data due to thin data from only 3 studies. Only 1 study contributes to a finding on facility supply and equipment shortages | No or very minor concerns. Findings across studies are consistent and coherent | No or very minor concerns about relevance. Finding in accord with context of review question | Low confidence | Finding graded as low because of the small range of studies, thin quantity of data, and moderate to major methodological limitations in 2 of the 3 studies |

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| | | produced (Bedford) | (Ibrhim) | | | | |
| **Attendant attitudes and behavior -** TBAs and other CBA were preferred for being more affectionate, sensitive, hospitable, and positive than HCPs. | **15 studies -** Dahlberg, Kyomuhendo, Thwala, Igboanugo, King, Osubor, Bazzano, Cofie, Caulfield, Sialubanje, Allou, Adinew 2017, Ibrhim, Dodzo, Kwagala | 2/15 studies with major methodological limitations, 3/15 studies with moderate methodological limitations | Rich data from a range of contexts | No or very minor concerns. Findings across studies are consistent and coherent | Minor concerns about relevance given that 1 of the studies had a few urban participants (Allou) | Moderate confidence | Finding graded as moderate because of the moderate to major methodological limitations in 5 of the 15 studies |
| **Previous experiences -** Traditional births were preferred because of positive previous experiences with traditional births. | **6 studies -** Serizawa, Dodzo, Cofie, Pfeiffer, Sialubanje, Shiferaw | 1/6 studies with major methodological limitations, 1/6 studies with moderate methodological limitations | Minor concerns over adequacy of data. Despite the moderate range of contexts, data is not rich | No or very minor concerns. Findings across studies are consistent and coherent | No or very minor concerns about relevance. Finding in accord with context of review question | Moderate confidence | Finding graded as moderate because of the moderate to major methodological limitations in 2 of the 6 studies and thin quantity of data |
| **Trust -** Greater trust in CBAs, traditional childbirth care and PNC practises, or self-care, over HCPs and health facilities contributed to preferences for traditional maternal care. | **11 studies -** Adinew 2017, Serizawa, Shiferaw, Wilunda, Pfeiffer, Kwagala, Caulfield, Kyomuhendo, Seljeskog, Engmann, Bedford | 3/11 studies with major methodological limitations, 2/11 studies with moderate methodological limitations. | Rich data from a range of contexts | Minor concerns about coherence given that some women trusted traditional care-takers and others trusted their own abilities for self-care. Parity and age also contributed to expressed preferences, given that older women and multiparous women often trusted their own | No or very minor concerns about relevance. Finding in accord with context of review question | Moderate confidence | Finding graded as moderate because of the range of contexts, rich data, and relevance to the review question, but moderate to major methodological limitations in 5 of the studies |

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| | | | | abilities to recognize and manage issues | | | |
| **Fear of medical interventions -** Fear of facility-based services and related consequences of receiving facility-based care contributed to preferences for traditional maternal care. | **8 studies-** Magoma, Seljeskog, Osubor, Bazzano, Adinew 2018, De Allegri, Sisay, Moyer | 3/8 studies with major methodological limitations, 1/8 studies with moderate methodological limitations | Rich data from a range of contexts | Minor concerns about coherence given that specific sources of fear relating to health facility settings varied from fears of operations, to fears of being turned away. In one study, women were afraid of delivering on their way to a facility (De allegri) | No or very minor concerns about relevance. Finding in accord with context of review question | Low confidence | Finding graded as low because 4 of the studies had moderate to major methodological limitations and minor concerns in coherence |
| **Comforting environment -** Domestic settings were preferred for being more familiar, whereas health facilities were seen as foreign environments. CBAs helped to provide this desired environment by taking consideration of user comfort (e.g. birthing position), while HCPs were judged to be less accommodating. | **17 studies-** Serizawa, Thwala, Sisay, Kyomuhendo, Pfeiffer, Shiferaw, Magoma, Osubor, Adinew 2018, Adinew 2017, Caulfield, Kea, Kwagala, Allou, Wilunda, Bedford, Sialubanje | 2/17 studies with major methodological limitations, 4/17 studies with moderate methodological limitations | Rich data from a range of contexts | Minor concerns about coherence given that women's desires of a comfortable environment provided in traditional care settings varied | Minor concerns about relevance given that 1 of the studies had a few urban participants (Allou) | Moderate confidence | Finding graded as moderate because of the range of contexts, rich data, but moderate to major methodological limitations in 6 of the studies and minor concerns in coherence and relevance |
| **Privacy -** The lack of privacy in | **10 studies-** King, Ganle, | 3/10 studies with moderate | Rich data from a range | No or very minor | Minor concerns | High | Finding graded as high because |

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| health facilities (e.g. exposure of private parts to strangers) contributed to preferences for traditional births. In domestic settings, women possessed greater privacy. | Pfeiffer, Dodzo, Adinew 2018, Ibrhim, Caulfield, Kwagala, Ndirima, Kea | methodological limitations | of contexts | concerns. Findings across studies are consistent and coherent | about relevance given that 1 of the studies had a few urban participants (Ganle) | confidence | of the range of contexts, rich data, and strong coherence |
| **Knowledge and awareness -** Lack of knowledge and awareness about maternal health, as well as misconceptions regarding the perceived insignificance of formal care for a normal birth and puerperium, shaped some women's preferences for traditional care. | **15 studies** - Magoma, Bedford, Bazzano, Ibrhim, Allou, Ahmed, Dahlberg, Dodzo, Cofie, Seljeskog, Shiferaw, Sisay, Mason, Caulfild, Kwagala | 1/15 studies with major methodological limitations, 4/15 studies with moderate methodological limitations | Rich data from a range of contexts | No or very minor concerns. Findings across studies are consistent and coherent | Minor concerns about relevance given that 1 of the studies had a few urban participants (Allou) | Moderate confidence | Finding graded as moderate because of the range of contexts, rich data, strong coherence, but moderate to major concerns in 5 of the studies and minor concerns in relevance to the review question |
| **Shorter distance and convenience -** Traditional births were favored for being closer and more convenient than institutional births. | **11 studies -** Dahlberg, Magoma, Serizawa, Cofie, Dodzo , Pfeiffer, Ibrhim, Sialubanje, Mason, Caulfield, Wilunda | 2/11 studies with moderate methodological limitations | Rich data from a range of contexts | Minor concerns over coherence given that some women may be expressing physical barriers to preferences (that could really be for formal care) rather than reasons/factors of why they want to stay home | No or very minor concerns about relevance. Findings in accord with context of review question | High confidence | Finding graded as high because of the range of contexts, rich data, and relevance to the review question |
| **Transportation and** | **5 studies -** Ibrhim, | 1/5 studies with major | Minor concerns over | Minor concerns | No or very minor | Low | Finding graded as low because |

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| **topographical difficulties -** Lack of transportation options, poor roads, poor terrains and poor conditions contributed to preferences for traditional maternal care. | Magoma, Mason, Seljeskog, Cofie | methodological limitations, 1/5 studies with moderate methodological limitations | adequacy of data. Despite the moderate range of contexts, data is not rich | over coherence given that some women may be expressing physical barriers to preferences (that could really be for formal care) rather than reasons/factors of why they want to stay home | concerns about relevance. Findings in accord with context of review question | confidence | of the moderate range of contexts, thin quantity of data, and 2 studies with moderate to major methodological limitations |
| **Costs and affordability -** Preferences for traditional births because of cheaper costs (services, transportation, emergencies) and longer repayment time frames than in health facilities. | **12 studies -** Dahlberg, Magoma, Okafor, Seljeskog, Igboanugo, King, Cofie, Dodzo, Bazzano, Adinew 2018, Ibrhim, Wilunda | 1/12 studies with major methodological limitations, 2/12 studies with moderate methodological limitations | Rich data from a range of contexts | Minor concerns over coherence given that some women may be expressing financial barriers to preferences (that could really be for formal care) rather than reasons/factors of why they want to stay home | No or very minor concerns about relevance. Findings in accord with context of review question | High confidence | Finding graded as high because of the range of contexts, rich data, coherence of the finding, and relevance of the finding to the review question |
| **Social constraints -** Domestic chores and responsibilities, as well as social permissiveness of CBAs in terms of family accommodations during maternal care contributed to preferences to stay away from | **11 studies -** Magoma, Seljeskog, Dodzo, Bazzano, Wilunda, Bedford, Sisay, Thwala, Shiferaw Caulfield, Kwagala | 2/11 studies with major methodological limitations, 2/11 studies with moderate methodological limitations | Rich data from a range of contexts | Moderate concerns over coherence given that some women may be expressing social barriers to preferences (that could really be for formal care) | No or very minor concerns about relevance. Findings in accord with context of review question | Moderate confidence | Finding graded as moderate because of the range of contexts, rich data, and relevance to the review question, but with moderate to major methodological limitations in 4 of the studies, as well as |

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| facility-based care. | | | | rather than reasons/factors of why they want to stay home. Sub-factors related to social constraints that contributed to women's desire for traditional care varied | | | moderate concerns about coherence in the finding |
| **Social status -** Preferences for traditional care were also affected by the enhanced social status that comes with traditional care and diminished social status that comes with facility-based care. | **6 studies -** Kyomuhendo, Bedford, Bazzano, Kwagala, Caulfield, Sialubanje | 2/6 studies with major methodological limitations, 1/6 studies with moderate methodological limitations. In 1 study, recordings were not used and full transcriptions with translations were not produced (Bedford) | Moderate concerns over adequacy of data given the relatively small range of contexts and the heavy contribution to this finding from 2 of the lower-quality studies (Kyomuhendo , Bazzano) | Minor concerns over coherence given that some women may be expressing social barriers to preferences (that could really be for formal care) rather than reasons/factors of why they want to stay home | No or very minor concerns about relevance. Findings in accord with context of review question | Low confidence | Finding graded as low due to moderate to major methodological limitations in 2 of the studies, small range of studies, and strong contribution to the finding from 2 of the lower quality studies |
| **Cultural norms-** Traditional births were favored because they spanned generations and were considered to be the 'normal' type of birth. | **15 studies -** Magoma, King, Kyomuhendo, Bedford, Dahlberg, Bazzano,Cofie, De Allegri, Thwala, Shiferaw, Sisay, Adinew 2018, Caulfield, Kwagala, Ahmed | 1/15 studies with major methodological limitations, 2/15 studies with moderate methodological limitations | Rich data from a range of contexts | No or very minor concerns. Finding across studies are consistent and coherent | No or very minor concerns about relevance. Findings in accord with context of review question | High confidence | Finding graded as high despite methodological limitations in 3 of the 15 studies due to the range of contexts, rich data, coherence of data, and relevance to the review question |
| **Cultural beliefs and obligations -** CBAs provided culturally | **10 studies-** Dodzo, Caulfield, Adinew 2017, | 3/10 studies with major methodological limitations, 2/10 | Rich data from a range of contexts | Minor concerns over coherence | No or very minor concerns about | Moderate confidence | Finding graded as moderate because 5 studies had |

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| sensitive care and enabled cultural practises during childbirth and postpartum (e.g. burying placenta). | Okafor, Seljeskog, Serizawa, Moyer, Shiferaw, Kwagala, Kyomuhendo | studies with moderate methodological limitations | | given that cultural beliefs and practises varied significantly during both childbirth and post-childbirth | relevance. Findings in accord with context of review question | | moderate to major methodological limitations. Range of contexts, rich data, minor concerns about coherence, and relevance of finding to review question also contributed to the grade |
| **Religious beliefs and obligations** - CBAs favorably provided more religiously sensitive care than HCPs. Belief that only God can manage complications also contributed to preferences for traditional care. | **4 studies -** Dodzo, Magoma, Dahlberg, Ganle | 2/4 studies with minor methodological limitations | Moderate concerns over adequacy of data due to the small range of contexts, and the moderate quantity of data from only 4 studies | Moderate concerns over coherence given a lack of descriptions of the affect religion (e.g. Islam) had on women's preferences . Also, variations in findings with 2 studies focussing on religiously sensitive care and the 2 others focussing on religious intervention for complicatio ns | Moderate concerns about relevance given that some of the underlying data pertaining to religious influence on preferences is of partial relevance. 1 of the studies had a few urban participants (Ganle) | Low confidence | Finding graded as low because of the small range of contexts, moderate quantity of data, limitations in coherence, and moderate issues with consistency of the finding in relation to the review question |

**Appendix 3.6** Review Findings for Traditional and Formal Maternal Care

| Review Findings (sub-theme and summary) | Contributing Studies | Methodological Limitations | Adequacy of Data | Coherence | Relevance | CERQual Assessment | Explanation of Confidence in the Evidence Assessment |
|---|---|---|---|---|---|---|---|
| **Necessity of skilled care –** Preferences for | **16 studies -** Dahlberg, Magoma, | 4/16 studies with major methodological | Rich data from a range | No or very minor concerns. | No or very minor concerns | Moderate confidence | Finding graded as moderate because of 8 |

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| traditional antenatal, childbirth and postnatal care as a first line of care for 'normal' situations transitioned into preferences for facility-based care throughout the continuum of maternity as a secondary resort (treatment center) during the onset of complications. | Bedford, Mason, Cofie, Shiferaw, Sisay, Caulfield, Ibrhim, Kwagala, Seljeskog, Ahmed, Thwala, Myer, Okafor, Riang'a | limitations, 4/16 studies with moderate methodological limitations | of contexts | Finding across studies is consistent and coherent | about relevance. Finding in accord with context of review question | | studies with moderate to major methodological limitations, the large range of contexts, the richness of the data, and the relative consistency of the finding in relation to the review question |
| **Previous experiences -** Successful previous pregnancies and resultant beliefs to adequately self-manage contributed to preferences for early traditional ANC and late or irregular formal ANC visits. | **2 studies -** Mathole, Serizawa | No methodological concerns | Major concerns over adequacy as data was retrieved from only 3 studies with thin data. | No or very minor concerns. Finding across studies is consistent and coherent | No or very minor concerns about relevance. Finding in accord with context of review question | Moderate confidence | Finding graded as moderate because of major concerns over adequacy, despite confidence in the methodological strength, coherence and relevance |
| **Fear of poor fortunes -** Fear of bad luck and witchcraft from revealing pregnancy in the early months contributed to preferences for public concealment and thereby early traditional ANC outside of a facility, followed by late initiation of formal ANC. | **2 studies -** Mathole, Jacobs | Minor methodological concerns in 1/2 studies | Moderate concerns over adequacy of data as data was retrieved from only 3 studies, despite moderately rich data. | No or very minor concerns. Finding across studies is consistent and coherent | No or very minor concerns about relevance. Finding in accord with context of review question | Moderate confidence | Finding graded as moderate because of moderate concerns over adequacy, despite confidence in the methodological strength, moderately rich data, coherence, and relevance |

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| **Poor physical and financial access -** Longer distances, difficult transportation and topography, and high costs of facility-based ANC contributed to preferences for early traditional ANC and late initiation of formal ANC. | **1 study -** Mathole | No methodological concerns | Major concerns over adequacy of data given that the relatively thin data was retrieved from only 1 study | Major concerns over coherency given that the finding is not found across multiple studies, and thereby cannot be judged to be consistent. | No or very minor concerns about relevance. Finding in accord with context of review question | Very low confidence | Finding graded as very low because of the major concerns over both adequacy and coherence of the finding |
| **Social concealment -** Concerns about shame that could result from unsuccessful pregnancies, poor physical appearance, and old age contributed to preferences for early traditional ANC at home and late initiation of formal ANC in a clinic. Hiding pregnancy from relatives and the public eye also contributed to preferences for later initiation of formal ANC | **3 studies -** Mathole, Kea, Riang'a | No methodological concerns | Moderate concerns over adequacy of data as data was retrieved from only 3 studies, despite moderately rich data. | Minor concerns about coherence given that women concealed their pregnancies for a wide variety of reasons, ranging from not wanting their parents to find out about the pregnancy to not wanting to be seen in ripped up clothes | No or very minor concerns about relevance. Finding in accord with context of review question | Moderate confidence | Finding graded as moderate due to moderate concerns over adequacy and minor concerns about coherence |
| **Cultural beliefs and practices -** Cultural beliefs and traditions about concealing pregnancies in the early months contributed to preferences for | **1 study -** Kea | No methodological concerns | Major concerns over adequacy of data given that the relatively thin data was retrieved from only 1 study | Major concerns over coherency given that the finding is not found across multiple studies, and thereby cannot be judged to be | No or very minor concerns about relevance. Finding in accord with context of review question | Very low confidence | Finding graded as very low because of the major concerns over both adequacy and coherence of the finding |

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| early traditional ANC and late initiation of formal ANC. | | | | consistent. | | | |