

Influence of Household Socio-Economic, Demographic, and Cultural Factors on Women's Access to Maternal Healthcare in Malindi Sub County, Kilifi County, Kenya

Kalu Kahindi Emmanuel¹
Antony Odek²
David Gichuhi³

¹kahutuhu@gmail.com

²aodek@spu.ac.ke

³dgichuhi@spu.ac.ke

^{1,2,3}St. Paul's University, Kenya

ABSTRACT

Globally, maternal healthcare access remains a critical concern due to significant disparities, particularly in developing countries where access rates are notably lower. The Sustainable Development Goals underscore the importance of prioritizing maternal health, urging nations to improve access to maternal healthcare services. However, various factors hinder full access to such services. This study investigated the influence of social and economic factors on household access to maternal healthcare in Malindi Sub County, Kilifi County. Specifically, it examined the impact of income levels, literacy rates, parental age, and religious beliefs. The study, grounded in the Behavioral Model of Healthcare Service Utilization, Maternal Morbidity Measurement (MMM), and the Three Delay Theory, employed a descriptive survey design approach. A sample size of 382 respondents was determined using the Krejcie and Morgan's (1970) formula from a population of 73,547 households. Stratified sampling was employed to divide the sub-county into five strata based on wards, selecting households with mothers accessing maternal health services using purposive sampling. Additionally, twenty respondents were purposively chosen for key informant interviews. Because the dependent variable in the questionnaire was binary (access to maternal healthcare was either yes or no), the study used binomial logistic regression modeling to ascertain the influence of income levels, literacy levels, parental age and religious beliefs on the access to maternal healthcare. Income levels, with a coefficient of 2.236 (p -value = 0.007), literacy levels, with a coefficient of 1.981 (p -value = 0.002), and religious beliefs, with a coefficient of 1.004 (p -value = 0.037), were identified as significant factors positively influencing access to maternal healthcare. Conversely, parental age demonstrated a significant negative impact on access, with a coefficient of -1.262 (p -value = 0.004). The study concludes that socioeconomic status, education, and religious beliefs significantly influence maternal healthcare access, with a particular concern regarding diminished access as parental age increases. Consequently, this research emphasizes the critical need for targeted interventions to alleviate these disparities, recommending economic empowerment for women with lower income levels, health literacy education initiatives for vulnerable populations, and a multimodal approach to address cultural barriers and support both younger and older mothers in accessing healthcare services.

Keywords: Access to Healthcare, Income Levels, Literacy Rates, Maternal Healthcare, Religious Beliefs Socio-Economic Factors

1. INTRODUCTION

Maternal healthcare, encompassing the health and well-being of women during pregnancy, childbirth, and the postpartum period, is a crucial component of public health that significantly impacts a nation's overall development. Ensuring the safety and health of mothers not only upholds a fundamental human right but also supports broader societal progress by promoting the well-being of future generations. Despite global efforts to reduce maternal mortality rates, disparities in access to maternal healthcare services remain a critical challenge, particularly in low-income and developing regions where socio-economic, demographic, and cultural factors play a pivotal role in determining healthcare access (World Health Organization [WHO], 2020).

Globally, maternal mortality remains an urgent public health issue, with approximately 295,000 women losing their lives in 2017 due to complications related to pregnancy and childbirth, the majority of which occurred in developing countries (WHO, 2020). Although substantial progress has been made, with maternal deaths decreasing by 35% between 2000 and 2017, the reduction is not uniform, and significant disparities persist (WHO, 2019). In high-income nations, advanced healthcare systems, comprehensive maternal health policies, and higher income levels have contributed to significant reductions in maternal mortality rates. In contrast, developing countries, particularly those in sub-Saharan Africa and South Asia, continue to grapple with high maternal mortality rates, often exacerbated by limited healthcare infrastructure, socio-economic inequality, and cultural barriers that hinder women from accessing necessary healthcare services (World Bank, 2021). Across the globe, there have been notable strides in reducing

maternal mortality, but the progress remains uneven. In countries such as Norway and Japan, maternal deaths have reached remarkably low levels, largely attributed to well-established healthcare systems that prioritize maternal and child health (Hogan et al., 2010). In contrast, countries like Nigeria and Ethiopia continue to struggle with high maternal mortality rates. In Nigeria, for instance, approximately 20% of global maternal deaths occur, due to factors such as poverty, inadequate healthcare infrastructure, and cultural beliefs that often deter women from seeking timely medical care (Kassebaum et al., 2014). Ethiopia also faces similar challenges, where access to maternal healthcare is constrained by geographical barriers and income disparities, particularly in rural areas where healthcare services are scarce (Shiferaw et al., 2016).

In South Africa, while the country has made commendable progress in reducing maternal deaths through investments in healthcare and improved maternal health services, disparities remain, particularly in rural and underserved regions. These areas often experience a lack of healthcare personnel and facilities, which limits women's ability to access skilled birth attendants and essential antenatal services (World Bank, 2021). Ghana presents a similar scenario, where maternal healthcare outcomes have improved nationally, but rural women continue to face barriers such as low income, limited access to healthcare, and cultural beliefs that promote home births over facility-based deliveries (Ganle et al., 2016).

In Uganda, where 75% of the population resides in rural areas, the distance to healthcare facilities and the high cost of services are major barriers to maternal healthcare access (Kabakyenga et al., 2017). Tanzania faces similar challenges, where low literacy rates, poverty, and the limited availability of healthcare resources have resulted in persistently high maternal mortality rates (Mrisho et al., 2016). Rwanda, however, stands out as a success story in the region. Through government-led initiatives such as community-based health insurance schemes and efforts to expand access to antenatal care, Rwanda has significantly reduced maternal mortality rates in recent years (National Institute of Statistics of Rwanda [NISR], 2020). Despite these gains, regional disparities remain, particularly in rural areas, where women still face challenges in accessing comprehensive maternal healthcare services. In Kenya, maternal mortality rates remain high, particularly in rural and coastal regions such as Malindi Sub-County, where only 35% of pregnant women access maternal care services at healthcare facilities (Chorongo, 2016). Factors such as low income, literacy levels, and deep-rooted cultural beliefs play a significant role in determining whether women seek professional healthcare during pregnancy and childbirth.

Income levels are a crucial determinant of maternal healthcare access. Research indicates that women from higher-income households are significantly more likely to afford maternal healthcare services, including antenatal care and skilled birth attendance, compared to their lower-income counterparts (Houweling et al., 2016). Financial constraints often prevent women from seeking timely care, particularly in rural areas where the cost of services, transportation, and medical supplies can be prohibitive. In regions like Malindi, where poverty levels are high, this financial burden is a significant barrier to accessing quality maternal care, contributing to the persistently high maternal mortality and morbidity rates (Chorongo, 2016).

Literacy levels also play a vital role in maternal healthcare access. Women with higher levels of education are more likely to understand the importance of maternal health services and actively seek out healthcare providers for prenatal, delivery, and postnatal care (Adamu & Salihu, 2015). In contrast, women with limited or no formal education are often unaware of the healthcare services available to them or may be influenced by cultural beliefs that favor home births and traditional birth attendants over skilled healthcare providers. In Malindi, where literacy rates are relatively low, many women rely on traditional practices that can increase the risk of complications during childbirth (Chorongo, 2016).

The age of the mother is another critical factor influencing maternal healthcare access. Younger mothers, particularly adolescents, are often at a disadvantage due to their lack of knowledge, financial independence, and the stigma associated with teenage pregnancy (Finlay et al., 2016). According to Finlay et al., (2016), adolescent mothers are less likely to seek healthcare services compared to older, more experienced women, who are generally more aware of the risks associated with pregnancy and childbirth. However, older mothers also face heightened health risks during pregnancy, particularly if they have pre-existing conditions or have experienced multiple pregnancies, underscoring the importance of healthcare access for women of all ages.

Access to maternal healthcare services, the primary dependent variable in this study, refers to a woman's ability to utilize essential healthcare services such as antenatal care, skilled birth attendance, and postnatal care. Access to these services is influenced by multiple socio-economic, demographic, and cultural factors. In rural areas like Malindi Sub-County, access remains low, with many women facing barriers such as financial constraints, illiteracy, and cultural beliefs that discourage the use of formal healthcare services (Chorongo, 2016). As a result, many women in these regions are either unable or unwilling to seek maternal healthcare, leading to poor maternal and child health outcomes. Maternal healthcare is intricately linked to a nation's development, as it affects the health and survival of both mothers and their children. Addressing the socio-economic, demographic, and cultural barriers that

limit access to maternal healthcare is critical for reducing maternal mortality rates and improving overall public health outcomes. This study seeks to explore the influence of income levels, literacy, and mother's age on access to maternal healthcare in Malindi Sub-County, with the aim of providing evidence-based recommendations to inform policy interventions.

1.1 Statement of the problem

Ideally, maternal healthcare should be universally accessible, ensuring that all women, regardless of their socio-economic status, geographic location, or cultural background, receive comprehensive care throughout pregnancy, childbirth, and the postpartum period. Achieving this ideal would significantly reduce maternal and infant mortality rates, aligning with national development goals such as Kenya's Vision 2030 and global targets like the Sustainable Development Goals (SDGs). Specifically, SDG 3 aims to ensure healthy lives and promote well-being for all ages, with a focus on reducing maternal mortality rates to below 70 per 100,000 live births by 2030 (United Nations, 2015).

In practice, however, many regions in Kenya, particularly rural and underserved areas such as Malindi Sub-County, face significant barriers to accessing maternal healthcare. Despite policy efforts and investments in the healthcare sector, disparities persist, driven by various socio-economic and cultural factors. For example, while Kenya's National Maternal Mortality Ratio (MMR) stands at 362 deaths per 100,000 live births (Kenya Health Information, 2014), Malindi Sub-County reports a distressingly high MMR of 428 per 100,000 live births (Waiswa et al., 2020). This discrepancy highlights severe challenges in accessing maternal healthcare services in the region.

This study aims to address several key issues. First, it will specify the socio-economic factors (such as poverty, income levels, and employment status) and cultural beliefs such as traditional practices and religious views being investigated. Understanding these factors is crucial for evaluating their influence on maternal healthcare access in Malindi Sub-County. Second, while existing literature identifies high maternal mortality ratios, it often lacks a detailed examination of how socio-economic and cultural factors contribute to these challenges. Studies by Kota et al. (2023) and Kilemi (2023) highlight general barriers but do not provide a thorough analysis specific to Malindi Sub-County. Third, the research seeks to fill gaps identified in current research by providing a detailed analysis of how particular socio-economic factors and cultural beliefs affect maternal healthcare access in the region, including the impacts of income, education levels, and specific cultural practices. Finally, the study will include a comparative analysis to contextualize Malindi Sub-County's situation with other regions and similar studies, aiming to understand the unique challenges faced in this area. By addressing these issues, the research intends to uncover the underlying barriers that prevent women from accessing essential maternal healthcare services and to propose targeted interventions. This approach aims to contribute to reducing maternal mortality rates and improving healthcare equity, aligning with both national and global health objectives.

1.2 Research Objectives

Specifically, the study sought to;

- i. Establish the influence of income levels on the access to maternal healthcare in Malindi Sub County
- ii. Determine the influence of literacy levels on the access to maternal healthcare in Malindi Sub County
- iii. Examine the influence of mother's age on the access to maternal healthcare in Malindi Sub County
- iv. Analyze the influence of religious beliefs on the access to maternal healthcare in Malindi Sub County

11. LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Behavioral Model

The Behavioral Model, introduced by Andersen in 1968, explores how various factors such as income, education, gender, employment, and age affect individuals' use of healthcare services, including maternal care. This model posits that these factors significantly influence healthcare utilization patterns. Prosser (2007) expands on this by incorporating a cultural perspective, suggesting that mothers' healthcare needs are profoundly shaped by predisposing variables like socio-economic status and cultural norms. According to Andersen (1968), healthcare utilization can be understood through three primary categories: predisposing factors, enabling resources, and need-based characteristics.

Predisposing factors include beliefs, social structures, and demographic variables that influence an individual's likelihood of seeking healthcare. Individuals with strong predisposing traits are more likely to recognize and utilize medical services effectively. Enabling resources are the tangible supports that facilitate access to healthcare, such as family support and financial resources. For example, a well-resourced family or a financially stable household often has better access to healthcare services. Need-based characteristics reflect the perceived necessity of seeking medical

care, which varies based on individual health needs and conditions. This model is particularly useful for examining how household-level factors such as income, education, parental age, and religious beliefs impact maternal healthcare access. It highlights how these socio-economic factors shape a household's ability to utilize maternity services effectively.

However, the Behavioral Model has limitations, especially in explaining disparities between different socio-economic groups. While it provides a broad framework for understanding healthcare utilization, it may not fully account for why certain socioeconomic groups experience more significant barriers to maternal care, even when predisposing, enabling, and need-based factors are similar. The model also falls short in addressing specific contextual and environmental factors that influence healthcare access, particularly in rural or underserved areas. This suggests a need for supplementary theories or models that better capture these disparities and contextual influences.

2.1.2 The Maternal Morbidity Measurement Model

According to Filipi (2018), the model reflects six fundamental principles; the first principle is that of employing a woman-centered approach. Here, health problems that inhibit mothers from doing their usual activities may have a substantial direct or indirect impact on their lives and those around them. Secondly, the model reasons that maternal morbidity is cyclical since pregnancy can occur more than once; this behooves the health providers to ensure that postnatal care eliminates any form of recurring birth complication in the next birth. Thirdly, it is predicated on the idea that the results of mother morbidity can last for a long time beyond the six weeks of the postpartum period. Therefore, according to this model, mothers ought to seek postnatal services from healthcare centers to counter any adverse effects. From this perspective, therefore, the model treats maternal healthcare as not only a social and economic problem, but also as a clinical and biological issue. Lastly, the model takes cognizance of the context and environment which influence maternal uptake.

However, this model is not holistic in the sense that it does not treat the issue of maternal health from a medical angle. At the same time, it examines the issue from an individual's perspective based on social and economic status. Accordingly, this model assumes that decisions on the health of mothers need to factor in not only the context that the mother operates; but also, social and economic situation the mother finds herself in. It will therefore inform this study in postulating how social and economic factors directly affect accessibility to maternal healthcare. However, the model also does not examine the issue from a household perspective. Households form a focal point of understanding health decisions and as such, understanding the issue from this perspective is a critical pillar in comprehensively explaining maternal health decisions.

The MMM Model, as outlined by Filipi (2018), provides a holistic perspective on maternal health by focusing on both medical and social dimensions. It emphasizes the long-term impacts of maternal morbidity and the importance of postnatal care, highlighting how health issues can affect women beyond the immediate postpartum period. The model's focus on the direct and indirect impacts of health problems on women and their families aligns with a practical and empathetic approach to maternal healthcare. While the MMM Model addresses medical and individual aspects of maternal health, it may not fully consider household-level factors that play a crucial role in health decisions. This focus can limit its effectiveness in understanding how family dynamics and household support impact healthcare access. The model does not explore the role of household factors in depth, which is critical for a complete understanding of maternal health decisions.

2.1.3 The Three Delay Theory

This theory was propounded by Barnes-Josiah (1998) who used it to recognize the variables impacting women's prompt use of healthcare as an interceding component to maternal mortality. The Three Delay Model expresses that to have a viable maternal health care result the three rule factors should be thought of. These include patients' timely decision to seek care which, much of the time, is influenced by socio-economic and behavior characteristics; delay in distinguishing and reaching health care, which has the probability to build hazard women health outcome, and deferral in receiving appropriate care which brings about a patient encountering critical outcomes that could influence any future choice in seeking health care services benefits later on. This model was important as it helped in supply-side and demand - side for health and the side for supply.

Therefore, the theory was used to argue that in Malindi Sub County, access to maternal healthcare was a threefold affair that entails the influence of social and economic factors, timely decision making and individual behavioral characteristics. This theory therefore was holistic in that it factors in the entire context of households as well as health-specific circumstances which dictate mother's uptake of maternal health. The Three Delay Theory provides a comprehensive approach to understanding factors that influence maternal healthcare outcomes. It considers delays in decision-making, accessing healthcare, and receiving appropriate care, making it useful for analyzing how various delays impact maternal health. This theory is effective in examining the interplay of socio-economic and

behavioral factors that affect maternal healthcare utilization, offering a broad perspective on the barriers to accessing care. The theory may not fully capture specific contextual factors relevant to different regions or settings, such as those in Malindi Sub County. It may lack the specificity needed to address local challenges and barriers. While the theory focuses on delays in care, it may not fully address the underlying socio-economic and cultural factors that contribute to these delays.

2.2 Empirical Review

Income significantly influences access to maternal healthcare, with low-income individuals and communities facing substantial barriers due to the concentration of facilities in urban areas and the high costs associated with care (Menonnen et al., 2019). In Sub-Saharan Africa, poverty exacerbates these barriers, leading to higher maternal mortality rates compared to developed regions (Amwonya et al., 2022). Financial constraints, including transportation and treatment costs, prevent many women from accessing necessary care, perpetuating inequities and contributing to preventable maternal deaths (Hamal et al., 2022). While income is a crucial factor, addressing broader systemic issues and structural barriers is essential for improving access to maternal healthcare. Research highlights the need for localized studies to address specific socio-economic challenges in regions like Malindi, Kenya, and to develop targeted interventions that consider both economic and contextual factors impacting healthcare access (Chorongo, 2016; Ochako et al., 2018; Njenga et al., 2022).

Research consistently indicates that higher levels of maternal education are associated with increased use of maternal health services, due to enhanced health awareness and information-seeking behavior (Furuta, 2016). For instance, Nawabi et al. (2021) observed that literacy during pregnancy affects maternal health behavior, although their findings may not fully apply to regions like Malindi Sub-County due to differing socio-economic and cultural contexts. Similarly, studies in Ethiopia (Kiross et al., 2019) and Uganda (Amwonya et al., 2022), underscore the importance of education in improving maternal healthcare access. However, these studies often have limitations in generalizability to specific contexts such as Malindi. For example, research by Chorongo (2016) and McMaughan et al., (2020) may be outdated due to changes in literacy rates and healthcare infrastructure. To address these gaps, the current study aims to provide up-to-date, region-specific insights into how literacy affects maternal healthcare access in Malindi, thereby contributing to more effective, contextually relevant health interventions and policies.

Research on the impact of maternal age on healthcare access reveals significant variations influenced by socio-economic and cultural factors. Younger mothers often face challenges related to lower education and economic status, which can hinder their ability to access adequate healthcare (Adedokun, 2023). On the other hand, older mothers may encounter difficulties due to increased health risks and a tendency to rely on traditional practices rather than seeking modern medical care (Bain et al., 2023). In Kenya, for instance, older women in rural areas struggle with low health literacy and a preference for traditional birth attendants, impacting their access to healthcare (Caulfield et al., 2016). Similar trends are observed in semi-rural settings like Malindi Sub-County, where traditional and modern healthcare services coexist. Research indicates that understanding these age-related disparities requires a localized approach to address the unique challenges faced by different age groups in accessing maternal healthcare (Wambiya et al., 2021).

Religious beliefs significantly influence access to maternal healthcare, shaping both personal and societal attitudes towards health practices. Koeing (2015) emphasizes that religion impacts daily behaviors and health management, with different faiths providing distinct guidelines on health and wellness. For instance, Yadav (2020) found that in India, religious convictions heavily influence maternal healthcare access, with some traditions restricting female interactions with male health providers. Similarly, Lyon et al., (2020) noted that in Turkey, Muslim women often prefer care from Muslim medical professionals. In Kenya, studies such as those by Wanjiru and Njeru (2021) and Mutale et al., (2021) highlight that traditional religious practices sometimes override modern healthcare recommendations, affecting women's access to necessary services. Research by Oluoch-Aridi et al., (2020) further reveals that religious beliefs can both positively and negatively impact healthcare utilization, depending on the context. This study aims to explore how religious beliefs interact with other socio-cultural factors to shape maternal healthcare access in Malindi Sub-County, addressing gaps in existing research and providing a nuanced understanding of these dynamics (Pastwa-Wojciechowska et al., 2021).

III. METHODOLOGY

3.1 Research Design

The study employed a descriptive survey design, utilizing both questionnaires and interviews to thoroughly investigate the impact of social and economic factors on access to maternal healthcare (Dawadi et al., 2021). This methodological strategy was chosen to effectively gather data from extensive populations where other methods might

be inadequate. By integrating quantitative and qualitative data, the research provided a comprehensive view of the subject, capturing not only statistical patterns but also deeper insights into participants' perspectives and experiences. Questionnaires allowed for structured data collection and statistical analysis, while interviews offered a deeper exploration of the socio-economic factors influencing maternal healthcare. This approach was deemed effective for capturing a holistic understanding of the issue, facilitating a detailed analysis of the factors affecting access to maternal healthcare.

3.2 Study Site

The study was conducted in Malindi Sub County, located in Kilifi County on Kenya's coast. This sub-county borders Kilifi North to the south and Magarini to the north, and includes the wards of Ganda, Jilore, Kakuyuni, Malindi Town, and Shella. With a population of 163,351 and 73,547 households, Malindi has an average household size of 4.4 (KNBS, 2019). The sub-county was chosen due to its notably low maternal healthcare utilization. Only 35% of mothers access these services, compared to the WHO's recommended 80%. This underutilization is alarming given the global maternal death rate of 44%. Malindi's selection for the study is driven by the need to investigate the socioeconomic factors contributing to this gap, providing a critical public health perspective. Its distinct socio-economic and demographic characteristics, combined with its geographical position, make it an ideal location to explore healthcare access disparities and evaluate the effectiveness of local healthcare policies and interventions.

3.3 Target Population and Sampling Techniques

The study targeted households in Malindi Sub County, Kilifi County, with a focus on those with mothers seeking maternity services from local health facilities. The total household count in Malindi is 73,547 (KNBS, 2019). A sample of 382 households was determined using Krejcie and Morgan's formula, with distribution across five wards based on household numbers. Stratified sampling was employed to divide households into wards, followed by simple random sampling to select respondents. Additionally, 20 key informants, including four Community Health Workers (CHWs) from each ward, were chosen through purposive sampling to provide detailed insights into maternal healthcare access. This methodology combined quantitative and qualitative approaches to offer a comprehensive understanding of the socio-economic factors influencing maternal healthcare in the region.

3.4 Data Analysis and Presentation

Data analysis for the study involved both quantitative and qualitative approaches. Quantitative data from questionnaires were analyzed using SPSS version 25.0, which included descriptive statistics like frequencies and percentages, as well as inferential techniques such as correlation analysis and binomial logistic regression. This approach assessed the impact of variables like income, literacy, parental age, and religious beliefs on access to maternal healthcare, with binomial regression being appropriate due to the binary nature of the dependent variable (access: yes or no). Qualitative data from interviews were analyzed through narrative analysis, focusing on themes and personal experiences shared by respondents. This involved examining direct quotes to enhance the authenticity of the findings and provide a deeper understanding of participants' perspectives. The combination of quantitative and qualitative methods allowed for a comprehensive analysis of the factors affecting maternal healthcare access.

IV. FINDINGS & DISCUSSION

4.1 Demographic Attributes of the Respondents

The study explored various demographic attributes of the respondents, including age, marital status, education level, household size, and occupation, to understand how these factors might influence maternal healthcare access in Malindi Sub County. The age distribution revealed that 67.1% of respondents were over 30 years old, with the majority of maternal healthcare seekers being older women. However, it is important to note that reproductive health decisions are influenced by more than age, such as socioeconomic status, education, and healthcare access. Regarding marital status, 60% of the respondents were married, reflecting evidence that married women often have better access to maternal health services due to spousal support, while single or divorced women may face more challenges.

Educational attainment varied among respondents, with 44.9% having secondary education and 36.0% having completed primary education, showing a significant relationship between education and maternal healthcare awareness. Households mostly consisted of four to five members (52%), consistent with national census data. In terms of occupation, 45.2% of respondents were engaged in informal employment, while 23.7% held formal jobs, and 21.2% were unemployed. These findings align with the rural economic structure of Malindi Sub County, where informal employment, particularly in agriculture, is more prevalent compared to urban areas where formal employment is more common.

4.2 Descriptive Statistics

4.2.1 Income Levels and household's Access to Maternal Healthcare

To establish the effects of income levels on household's access to maternal healthcare, descriptive statistics were performed by the researcher using means, standard deviations, frequencies, and percentages as guidance. The results are reported in table 1.

Table 1

Influence of Income Levels on Households' Access to Maternal Healthcare

Statements	SA (%)	A (%)	UD (%)	D (%)	SD%
Generally, those who are poor are more likely not to visit health centers in comparison with those who come from higher income households	20	60.9	0.3	17.5	1.2
Parents income levels determine access to maternal health	38.8	60.3	0	0.6	0.3
Rich people tend to be more informed about the importance of maternal health services compared to the poor.	58.8	12	0	29.2	0
Maternal health access has nothing to do with income levels instead. It is related to other factors which are not economic in nature.	1.2	16	0	9.2	73.5

Table 1 above illustrates that the data reveals that 80.9% of respondents agreed that poorer individuals are less likely to visit health centers compared to those from higher income households. Additionally, 99.1% of respondents believed that parental income levels determine access to maternal health. Furthermore, 70.8% agreed that wealthy individuals tend to be more informed about the significance of maternal healthcare, while 82.7% disagreed with the notion that maternal health access is unrelated to income, suggesting it is influenced by non-economic factors. Many women struggle with the costs of maternal healthcare for instance, Gulema and Berhane (2017) found that financial constraints often lead to delays in seeking maternal care, as women anticipate high costs associated with healthcare services. This concern about costs is a significant barrier that affects both the timeliness and quality of care received. It is essential to recognize that while income levels significantly impact access to healthcare, they do not act in isolation. The relationship between income and health outcomes is mediated by other factors such as healthcare access and cultural barriers. Studies have shown that higher income improves access to healthcare services, but other determinants, such as the availability of services and cultural attitudes towards healthcare, also play crucial roles. For instance, Smith et al., (2019) highlight that education and awareness, alongside income, is critical in determining health outcomes.

The findings underscore the need for policy interventions aimed at improving access to maternal healthcare for low-income households. The significant correlation between income and healthcare access highlights the importance of economic empowerment in enhancing maternal health. Policy measures such as subsidized healthcare programs and improved healthcare infrastructure in rural areas could help bridge the gap between high and low-income households. Cultural and social barriers also play a crucial role in maternal healthcare access. For instance, cultural beliefs and practices may influence healthcare utilization, and these barriers need to be addressed alongside economic constraints. Research by Hamal et al. (2022) and Lyon et al., (2020) supports the view that economic status affects healthcare utilization, but they also point to the importance of addressing structural and intermediary factors. The disparity between rural and urban healthcare access is evident, with rural areas often facing greater challenges. The World Health Organization (2021) reports that rural mothers are less likely to receive care from qualified health personnel compared to their urban counterparts. This inequality underscores the need for targeted interventions to improve healthcare access in underserved areas. Thus, while income levels are a significant determinant of maternal healthcare access, a comprehensive approach that includes economic support, improved healthcare services, and cultural sensitivity is essential for addressing the broader issues affecting maternal health outcomes. Implementing these measures can help achieve more equitable access to maternal healthcare and improve health outcomes across different socioeconomic groups.

4.2.2 Education Levels and Household Access to Maternal Healthcare

As part of the current study's objectives, effects of education levels on household access to maternal healthcare were determined. The findings are summarized in Table 2.

Table 2*Descriptive Statistics on Education Levels*

Statements	SA (%)	A (%)	UD (%)	D (%)	SD (%)
Parental education levels directly affect their choice to visit health center for maternal services	34.2	60.6	0.6	2.5	2.2
Parents with high level of education are more likely to uptake maternal services from hospitals compared to illiterate parents	14.8	75.4	2.5	5.2	2.2
The level of household engagement with maternal healthcare programs increases with increasing level of education	32	52	2.8	7.1	6.2
Maternal healthcare uptake is more likely to be higher in areas where most parents generally have knowledge about the benefits	65.2	5.5	0.6	6.5	22
Mothers with high level of education are more likely to uptake maternal services compared to those who parents/caregivers have no formal education	63.4	16	1.5	9.2	9.8

Table 2 reveals that 94.6% of the respondents agreed that parental education levels directly affect their choice to visit health centers for maternal services, while 90.2% agreed that parents with higher levels of education are more likely to use hospital-based maternal services compared to illiterate parents. Moreover, 84% of respondents agreed that household engagement with maternal healthcare programs increases with higher education levels. Around 70.7% supported the statement that maternal healthcare uptake is likely to be higher in areas where parents are generally knowledgeable about the benefits of such services. In addition, 63.4% strongly agreed that mothers with higher levels of education are more likely to use maternal services compared to those whose parents or caregivers have no formal education. These findings suggest that education levels significantly influence access to maternal healthcare. Respondents' narratives further illustrated the role of household education in maternal healthcare, as seen in the following quotes:

"Educated parents take matters of maternal health seriously."

"More educated parents understand why they should seek care because they know the risks of maternal health issues."

"Most people with low education levels are struggling financially. Therefore, they hardly have expenditure for medical services. They rely on subsidies from the government."

"Parents with low education don't see the importance of accessing maternal health services. They prefer using herbal medicine instead of going to hospitals."

While these quotes support the general consensus that education influences healthcare decisions, they reflect a mix of views. The quotes should not be taken as fully representative but rather as insights into how education impacts decision-making for some individuals. The findings suggest that education plays a vital role in promoting maternal health, as educated individuals are better informed about healthcare services and more likely to seek out such services. Previous studies align with this perspective. For instance, Furuta (2016) and Kiross et al., (2019) found that higher education levels increase autonomy in decision-making, which in turn enhances access to maternal healthcare. According to Kangbal et al. (2020), educated women tend to prioritize maternal healthcare more due to their understanding of health risks, similar to the findings in this study.

In most cases higher education correlates with increased employment opportunities and consequently better access to healthcare but sometimes education does improve employment prospects (Paul & Chouhan, 2020). Other factors, such as regional disparities, availability of healthcare services, and cultural practices, also play crucial roles in healthcare access. In fact, Kiross et al., (2019) found that the relationship between education and maternal healthcare access was mediated by factors like healthcare quality and geographic location. Therefore, a more nuanced interpretation of education's role in maternal health is necessary.

Furthermore, the findings in this study provide valuable policy insights. For example, enhancing educational opportunities for women, particularly in rural areas, could improve maternal health outcomes by increasing health literacy and promoting the use of maternal healthcare services. This aligns with studies like those of Yadav (2020), which emphasized the importance of education in addressing maternal health inequalities in rural India. Policies aimed at integrating maternal health education into broader educational curricula may also be instrumental in reducing maternal mortality and improving health outcomes across different socio-economic strata. Thus, while education is undeniably an important determinant of maternal healthcare access, its impact should be considered alongside other socio-economic, cultural, and structural factors. The findings suggest that improving maternal healthcare access requires a holistic approach, combining education with targeted healthcare policies that address both financial barriers and regional inequalities.

4.2.3 Parental Age and Households' access to Maternal Services

Table 3

Parental Age and Households Access to Maternal Services

Statements	SA (%)	A (%)	UD (%)	D (%)	SD (%)
The older a mother is, the less she prefers going to hospital for maternal healthcare	56.9	26.5	2.5	3.1	11.1
Young mothers prefer giving birth in hospitals than at home	64.6	18.8	1.5	5.2	9.8
There is a general trust in traditional birth attenders	6.2	16.0	9.2	0.0	68.6

The findings in Table 3 illustrate a notable association between parental age and household access to maternal healthcare services. A significant proportion (83.4%) of respondents agreed that older mothers tend to avoid hospital-based maternal healthcare. However, this trend may not solely be due to age, as socio-economic status, education, and cultural beliefs are likely to play a role as well. For instance, older women may feel more experienced and less reliant on formal healthcare, or they may face other constraints like lower income or lack of access to healthcare facilities. While 83.4% of respondents indicated that older mothers are less likely to seek hospital-based care, other respondents noted that some older women might delay pregnancy due to career reasons, thus accessing maternal healthcare services later in life. This points out to a more nuanced relationship between age, socio-economic status, and maternal healthcare access. The interplay of these factors suggests that while older mothers might avoid hospitals for childbirth, this is not a universal trend, and the reasons for such decisions are varied.

Qualitative data from respondents further corroborates the descriptive findings. When asked whether parental age influences decisions to attend maternal healthcare services, many respondents emphasized the role of experience, suggesting that younger women often lack knowledge and experience in handling maternal health, whereas older women might rely more on their accumulated childbirth experience. One respondent remarked:

"A young mother needs an elderly mother for guidance or instructions. She may not be able to follow medical instructions as compared to older women."

This sentiment reflects the belief that young mothers may struggle with medical guidance, further complicating their access to maternal healthcare services. However, another perspective suggested that fear of societal reprimand might deter young mothers from seeking formal healthcare services, especially for teenage mothers:

"Maybe for teenage mothers who fear as they are still in school and do not wish to be known or found to be pregnant. Also, aged women who fear going for maternal healthcare as their age is advanced hence, they shy away."

These insights reveal that both young and older women face unique barriers to accessing maternal healthcare, which may stem from fear, social stigma, or overconfidence in traditional methods. The nuanced nature of these findings underlines the importance of age-specific maternal healthcare interventions. The data also revealed that 68.6% of respondents strongly disapproved of traditional birth attendants (TBAs), indicating a general lack of trust in traditional practices. This might be due to increased awareness of the risks associated with non-professional maternal care, as well as the proliferation of government-sponsored healthcare programs. These programs have helped educate communities on the benefits of modern maternal healthcare services, thus eroding trust in TBAs. Despite this, traditional practices may still persist in areas where formal healthcare is inaccessible, or cultural norms hold sway. Further research is needed to explore the continued influence of traditional practices on maternal health, particularly in rural areas.

The current findings are consistent with studies conducted in various regions, which also show that parental age influences maternal healthcare decisions. For example, Lyon et al., (2020) found that younger women were more likely to access healthcare services than older women, who tended to rely on traditional methods. This was partly attributed to younger women having higher literacy levels and more exposure to formal healthcare systems. Similarly, a study by Bain et al., (2023) revealed that older women, particularly those over 40, were less likely to use maternal health services compared to younger women, often citing previous childbirth experience as a reason. In contrast, the study by Adedokun et al., (2023) found that older women placed more trust in traditional remedies and midwives rather than in hospitals, further confirming that age can play a critical role in shaping maternal healthcare preferences. These regional differences underscore the importance of considering local cultural and economic factors when designing maternal healthcare policies.

The findings of this study have several policy implications. Maternal healthcare interventions should be tailored to address the unique needs of both younger and older mothers. For younger mothers, targeted interventions could focus on education and awareness, helping them understand the importance of maternal healthcare and alleviating fears of stigma. For older mothers, interventions should aim at overcoming over-reliance on traditional

methods, ensuring that they have access to modern maternal healthcare services. Additionally, policies that focus on socio-economic and educational empowerment are essential. As noted, education plays a critical role in maternal healthcare access, and older women from lower socio-economic backgrounds may require additional support to overcome barriers related to income or literacy. By addressing these broader socio-economic factors, maternal healthcare services can become more inclusive and accessible across all age groups. While the findings suggest that parental age affects access to maternal healthcare, it is essential to clarify that this relationship may not be strictly causal. Other factors, such as education, income, and cultural beliefs, may also mediate this relationship. Thus, the study suggests a correlation rather than a direct causal link between age and maternal healthcare access. Future research should aim to disentangle these complex interactions to better understand how different factors contribute to maternal healthcare utilization.

4.2.4 Religious Beliefs and Household's Access to Maternal Health Services

Table 4 shows that 73.5% of the respondents strongly disagreed with the statement that religion does not play any role in influencing parents' decision to uptake maternal health services. This implies that religion does play an important role in access to maternal health. In the study, 72.3% of the study participants strongly disapproved of the statement that parents follow religious beliefs when it comes to maternal health. On the other hand, there was a strong agreement that some religious beliefs negatively affect mother's parents' decision not to attend maternal services.

Table 4

Descriptive Statistics on Religious Beliefs

Statements	SA (%)	A (%)	UD (%)	D (%)	SD (%)
Some religious beliefs negatively affect mother's parents' decision not to attend maternal services	37.5	33.8	3.1	1.2	24.3
Parents follow religious beliefs when it comes to maternal health	2.2	18.5	2.5	4.6	72.3
Religion does not play any role in influencing parents' decision to uptake maternal health services	1.2	16.0	0.0	9.2	73.5

In terms of the qualitative data, the study revealed that some of the respondents cited some of the religions that discouraged their members from accessing and using modern healthcare. One of the respondents had this to say:

"Most religions rebuked modern family planning. Parents are made to believe that it is sin to seek for and use family planning."

The above findings clearly reveal that religion has some influence on access and use of maternal healthcare. This is because religion is central to life, especially in the context of Africa. For instance, religious beliefs may encourage some women to ignore crucial maternal health care services. In the current study, one of the respondents revealed that most religions rebuked modern family planning. The respondent added that parents were convinced that it was sin to seek for and use family planning. The current study is congruent with some of the previous studies on the issue of religion and maternal health. For instance, Yadav (2020) on the study about changing patterns in inequalities in maternal healthcare in India concluded that religious values and beliefs still play an important role in enhancing or limiting access to healthcare. Mochache et al. (2020) in their study entitled "religious, socio-cultural norms and gender stereotypes influence uptake and utilization of maternal health services among the Digo community in Kwale" found that religious norms were important influences on access and utilization of maternal health services. Similar support can also be found by Kiross et al., (2019) observed that Muslim expectant women preferred to be attended by Muslim medical officers and the vice versa. In one of the recent studies by World Health Organization (2020) on the place of religion in enhancing Universal Access to maternal Healthcare, it was also established that religion plays several roles in enhancing access to healthcare. In the current study, the detrimental aspect of religion is well illustrated when one of the respondents disclosed that it discouraged family planning. The current study generally reveals that religion is an important aspect of individuals and community at large. The issue of religious beliefs and religiosity are deeply entrenched in individuals' choices of maternal healthcare services and by extension determine their choices on maternal healthcare programs.

4.3 Inferential Studies

4.3.1 Correlation Analysis

To scrutinize the kind of the association between predictor variables and response variable, Pearson Correlation was applied so as a diagnostic test to check if the predictor variables were highly correlated among themselves and also to ascertain the direction, strength and the statistical significance of the correlation with the response variable. Table 5 below summarizes the relationship.



Table 5
Pearson Correlation Analysis

		Access to maternal healthcare	Income levels	Literacy levels	Parental age	Religious beliefs
Access to maternal healthcare	Pearson Correlation	1.00				
	Sig. (2-tailed)					
	N	325				
Income levels	Pearson Correlation	.761	1.00			
	Sig. (2-tailed)	.011	325			
	N	325				
Literacy levels	Pearson Correlation	.791	.0141	1.00		
	Sig. (2-tailed)	.013	.0534			
	N	325	325	325		
Parental age	Pearson Correlation	-.713	.189	.345	1.00	
	Sig. (2-tailed)	.003	.055	.057		
	N	325	325	325	325	
Religious beliefs	Pearson Correlation	.313	.047	.091	.121	1.00
	Sig. (2-tailed)	.023	.078	.084	.067	
	N	325	325	325	325	325

The findings in Table 5 indicate that all the four independent variables of income levels, literacy levels, parental age and religious beliefs had a positive correlation with access to maternal healthcare. Literacy levels had the strongest correlation with $r=0.791$, followed by income levels with $r=0.761$, parental age with $r=-.713$ and lastly religious beliefs had a correlation of $r=0.313$.

4.3.2 Binomial Logistic Linear Regression

In this study the dependent variable which is access to maternal healthcare had two nominal categories of (yes and no). The binomial logistic analysis was used to fit the model as presented below in Table 6

Table 6
Model Parameter Estimates on the Link between Socioeconomic factors and Access to Maternal Healthcare

	B	df	Sig.	Exp(B)
Income levels	1.981	1	0.002	7.249
Literacy levels	2.236	1	0.007	9.355
Parental age	-1.262	1	0.004	0.2831
Religious beliefs	1.004	1	0.037	2.729
Constant	1.056	1	0.001	2.875

Table 5 shows that People with higher income are much more likely to access maternal healthcare. In fact, they are 7.249 times more likely to do so. This suggests that financial stability makes it easier for families to afford healthcare services. Those with higher literacy levels are more aware of the importance of maternal healthcare and are around 9.355 times more likely to seek it. Being educated may help them understand the need for proper medical care during pregnancy and childbirth. As parents get older, their likelihood of accessing maternal healthcare decreases. The study found that older parents are less likely to seek this care, possibly due to financial challenges or traditional beliefs. People with strong religious beliefs are 2.729 more likely to use maternal healthcare services. Religious communities might play a role in encouraging pregnant women to seek medical help and offering support. The constant term, with a coefficient of 1.056 and a p-value of 0.001 ($p < 0.05$), suggests that other factors not covered in the model also play a significant role in influencing access to maternal healthcare. These additional factors are 2.875 times more likely to have a positive impact on healthcare access.

V. CONCLUSIONS & RECOMMENDATIONS

5.1 Conclusions

This study shows that a family's financial situation greatly impacts access to maternal healthcare. Families with more money tend to know more about the importance of maternal healthcare, while those with less money often struggle to access services. Many respondents disagreed with the idea that income doesn't affect access, highlighting how important economic factors are. Economic empowerment, such as free or subsidized services like the Linda Mama program, was suggested to improve access to maternal healthcare. Financial challenges, especially during pregnancy, often result in women not attending necessary medical appointments, which negatively affects their health. Education also plays a big role in healthcare decisions. The study found that parents with more education are more likely to use hospital-based maternity care. The higher the level of education, the more likely families are to participate in maternal healthcare programs. This suggests that educating women and parents about the benefits of healthcare improves their use of these services. Women with higher education levels were more likely to seek maternal healthcare, making education a key factor in improving maternal health outcomes.

Parental age also affects access to maternal healthcare, with younger mothers more likely to seek care at hospitals than older women. However, the study shows that other factors, aside from age, may influence this behavior. Traditional birth attendants are not widely trusted, and young mothers prefer giving birth in hospitals. Young mothers face challenges like lack of experience and fear of social judgment, which may prevent them from accessing maternal healthcare. Religious beliefs also have an impact. Many respondents indicated that some religious beliefs discourage the use of modern healthcare services, including maternal care and family planning. These beliefs can negatively affect parents' decisions about seeking maternal healthcare. Statistical analysis confirmed that both parental age and religious beliefs significantly influence access to maternal healthcare, highlighting the importance of considering cultural and religious factors in healthcare decisions.

5.2 Recommendations

To improve access to maternal healthcare, implement targeted economic empowerment initiatives, such as expanding programs like Linda Mama. These programs should reduce financial barriers by providing free or affordable healthcare services. It is important to involve stakeholders and ensure ongoing monitoring to assess their effectiveness and sustainability.

Develop focused educational programs that increase health literacy, particularly in underserved communities. These programs should promote the importance of maternal healthcare and involve partnerships with schools and local organizations. Feedback and assessments should be conducted regularly to enhance the reach and impact of these initiatives.

Offer customized support for both younger and older mothers, addressing the unique challenges they face. This includes addressing age-related barriers and societal pressures. Integrating traditional practices with modern healthcare approaches will help improve maternal health outcomes, and these efforts should be reviewed regularly to ensure their effectiveness.

Work closely with traditional birth attendants by providing them with training and integrating their role into hospital-based maternal care systems. This combination will help ensure women receive well-rounded healthcare, with ongoing assessments to refine the approach and address any gaps.

Provide healthcare workers with training on cultural and religious sensitivity to ensure that healthcare services are not hindered by religious beliefs. Involving religious leaders in maternal healthcare awareness campaigns will help foster acceptance. Continuous evaluation is necessary to ensure the success and adaptability of these efforts within the healthcare system.

REFERENCES

- Adamu, Y. M., & Salihu, H. M. (2015). Barriers to the use of antenatal and obstetric care services in northern Nigeria. *Journal of Obstetrics and Gynaecology*, 15(6), 613-620.
- Adedokun, S. T., & Yaya, S. (2023). Factors influencing mothers' health care seeking behaviour for their children: Evidence from 31 countries in sub-Saharan Africa. *BMC Health Services Research*, 23(1), Article 224.
- Amwonya, N., Mwangi, A., & Omondi, P. (2022). Socioeconomic determinants of maternal healthcare utilization in Sub-Saharan Africa. *African Journal of Reproductive Health*, 26(3), 45-57.
- Andersen, R. (1968). *A behavioral model of families' use of health services*. Center for Health Administration Studies, University of Chicago.

- Bain, L. E., Aboagye, R. G., Dowou, R. K., Kongnyuy, E. J., Memiah, P., & Amu, H. (2023). Prevalence and determinants of maternal healthcare utilisation among young women in sub-Saharan Africa: Cross-sectional analyses of demographic and health survey data. *BMC Health Services Research*, 23(1), Article 424.
- Barnes-Josiah, D. (1998). The three delays as a framework for examining maternal mortality in developing countries. *Tropical Doctor*, 28(2), 71-73.
- Caulfield, T., Onyo, P., Byrne, A., & Nduba, J. (2016). Factors influencing place of delivery for pastoralist women in Kenya: A qualitative study. *BMC Women's Health*, 16(1), 57.
- Chorongo, D. (2016). The role of socio-economic factors in maternal health utilization in rural Kenya: A case study of Malindi Sub-County. *Journal of Public Health in Africa*, 7(2), 24-29.
- Dawadi, S., Shrestha, S., & Giri, R. A. (2021). Mixed-methods research: A discussion on its types, challenges, and criticisms. *Journal of Practical Studies in Education*, 2, 25-36.
- Filipi, V. (2018). *The maternal morbidity measurement model: An integrative approach to maternal healthcare*. Maternal Health Research Center.
- Finlay, J. E., Özaltın, E., & Canning, D. (2016). The association of maternal age with maternal and infant health outcomes in developing countries: Evidence from the Demographic and Health Surveys, 2003–2007. *American Journal of Public Health*, 101(9), 1733–1740.
- Furuta, M. (2016). The relationship between education and maternal health service utilization in Sub-Saharan Africa. *Global Health Action*, 9(1), 328-338.
- Ganle, J. K., Parker, M., Fitzpatrick, R., & Otupiri, E. (2016). Addressing health system barriers to access to maternal healthcare services: The perspectives of women, healthcare providers and policymakers in Ghana. *Journal of Public Health Policy*, 37(3), 355–368.
- Gulema, T., & Berhane, Y. (2017). Financial constraints and maternal healthcare seeking behavior in Ethiopia. *BMC Health Services Research*, 17(1), Article 160.
- Hamal, M., Das, M., & Chhetri, P. (2022). Financial barriers to maternal health services: A cross-sectional study in low-resource settings. *International Journal of Reproductive Health*, 20(3), 112-120.
- Hogan, M. C., Foreman, K. J., Naghavi, M., Ahn, S. Y., Wang, M., Makela, S. M., Lopez, A. D., Lozano, R., & Murray, C. J. (2010). Maternal mortality for 181 countries, 1980-2008: a systematic analysis of progress towards Millennium Development Goal 5. *Lancet (London, England)*, 375(9726), 1609–1623. [https://doi.org/10.1016/S0140-6736\(10\)60518-1](https://doi.org/10.1016/S0140-6736(10)60518-1)
- Houweling, T. A., Romans, C., Campbell, O. M., & Knut, A. E. (2016). Huge poor–rich inequalities in maternity care: An international comparative study of maternity and child care in developing countries. *Bulletin of the World Health Organization*, 85(10), 733–820.
- Kabakyenga, J., Astound, G., & Tibenderana, P. (2017). Barriers to the use of skilled birth attendants in rural Uganda: A qualitative study. *BMC Health Services Research*, 17(1), 1-10.
- Kangbal, T., Muthuswamy, P., & Thangavel, K. (2020). Educated women's health-seeking behavior during pregnancy: A qualitative study. *International Journal of Health Sciences*, 14(2), 57-64.
- Kassebaum, N. J., Bertozzi-Villa, A., Coggeshall, M. S., Shackelford, K. A., Steiner, C., Heuton, K. R., Gonzalez-Medina, D., Barber, R., Huynh, C., Dicker, D., Templin, T., Wolock, T. M., Ozgoren, A. A., Abd-Allah, F., Abera, S. F., Abubakar, I., Achoki, T., Adelekan, A., Ademi, Z., Adou, A. K., ... Lozano, R. (2014). Global, regional, and national levels and causes of maternal mortality during 1990-2013: A systematic analysis for the Global Burden of Disease Study 2013. *Lancet (London, England)*, 384(9947), 980–1004. [https://doi.org/10.1016/S0140-6736\(14\)60696-6](https://doi.org/10.1016/S0140-6736(14)60696-6)
- Kenya Health Information. (2014). *Kenya demographic and health survey*. Ministry of Health, Kenya.
- Kenya National Bureau of Statistics (KNBS). (2019). *2019 Kenya population and housing census: Volume I – Population by county and sub-county*.
- Kiross, G. T., Chojenta, C., Barker, D., Tiruye, T. Y., & Loxton, D. (2019). The effect of maternal education on infant mortality in Ethiopia: A systematic review and meta-analysis. *PLOS ONE*, 14(7).
- Kilemi, M. (2023). The role of cultural beliefs on maternal healthcare-seeking behavior among women in Kilifi County. *Journal of Public Health*, 23(4), 55-68.
- Kota, L., Mtana, A., & Kyara, R. (2023). Socio-economic determinants of maternal health services utilization in rural Tanzania. *Global Health Research and Policy*, 6(1), 22-30.
- Koeing, G. H. (2015). Religion and health: A review and meta-analysis. *Journal of Religion and Health*, 52(4), 1037-1048.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), 607-610.

- Lyon, M. E., D'Angelo, L. J., Cheng, Y. I., Dallas, R. H., Garvie, P. A., Wang, J., & Adolescent Palliative Care Consortium. (2020). The influence of religious beliefs and practices on health care decision-making among HIV positive adolescents. *AIDS Care*, 32(7), 896–900.
- McMaughan, D. J., Oloruntopa, O., & Smith, M. L. (2020). Socioeconomic status and access to healthcare: Interrelated drivers for healthy aging. *International Journal of Environmental Research and Public Health*, 17(1), 127.
- Menonnen, A., Wabwire, S., & Kabiru, J. (2019). Urban-rural disparities in maternal healthcare access: A Sub-Saharan Africa perspective. *International Journal of Health Services*, 49(4), 809–826.
- Mochache, R., Ndung'u, S., & Ndung'u, J. (2020). Religious, socio-cultural norms and gender stereotypes influence uptake and utilization of maternal health services among the Digo community in Kwale, Kenya. *Journal of Health, Population and Nutrition*, 39(1), 20.
- Mrisho, M., Armstrong, C., Obasi, A., & Killewo, J. (2016). The impact of maternal health services on maternal and neonatal mortality: A systematic review. *BMC Health Services Research*, 16(1), 1–13.
- Mutale, W., Matenga, T. F. L., Wagner, R. G., & Clemens, E. (2021). Integrating traditional healers into the health care system: Challenges and opportunities in South Africa. *Medical Journal of Zambia*, 47(4), 305–312.
- National Institute of Statistics of Rwanda [NISR]. (2020). *Rwanda demographic and health survey 2020*. NISR.
- Nawabi, M., Wamae, N., & Gatimu, K. (2021). Literacy levels and their impact on maternal healthcare utilization in rural Kenya. *Journal of Health Communication*, 18(5), 480–492.
- Njenga, R., Mwangi, A., & Ochieng, P. (2022). The impact of economic status on maternal healthcare access in rural Kenya. *African Journal of Reproductive Health*, 26(2), 45–55.
- Ochako, R., Fotso, J. C., Ikamari, L., & Khasakhala, A. (2018). Utilization of maternal health services among young women in Kenya: Insights from the Kenya Demographic Health Survey 2008–2009. *BMC Pregnancy and Childbirth*, 18(2), 107.
- Oluoch-Aridi, J., Chelagat, T., Nyikuri, M. M., Onyango, J., Guzman, D., Makanga, C., Miller-Graff, L., & Dowd, R. (2020). COVID-19 effect on access to maternal health services in Kenya. *Frontiers in Global Women's Health*, 1, Article 599267.
- Pastwa-Wojciechowska, B., Grzegorzewska, I., & Wojciechowska, M. (2021). The role of religious values and beliefs in shaping mental health and disorders. *Religions*, 12(10), Article 840.
- Paul, S., & Chouhan, R. (2020). The impact of education on employment and health outcomes: A review of literature. *International Journal of Health Sciences*, 14(2), 50–56.
- Prosser, H. (2007). Cultural differences in health care: The influence of cultural and socio-economic factors on the use of health services. *Journal of Social and Cultural Health*, 12(3), 201–219.
- Shiferaw, S., Yalew, A. W., & Tessema, F. (2016). Factors influencing the utilization of maternal healthcare services in rural Ethiopia: A community-based cross-sectional study. *BMC Pregnancy and Childbirth*, 16(1), 1–11.
- Smith, M., Johnson, R., & Anderson, L. (2019). Socioeconomic determinants of health outcomes in low-income populations. *International Journal of Health Services*, 49(3), 439–455.
- United Nations. (2015). *Transforming our world: The 2030 agenda for sustainable development*.
- Waiswa, P., Kilemi, M., & Chorong, M. (2020). Regional disparities in maternal healthcare in coastal Kenya: The case of Malindi Sub-County. *African Journal of Reproductive Health*, 24(4), 95–102.
- Wambiya, E. O. A., Otieno, P. O., Mutua, M. K., Donfouet, H. P. P., & Mohamed, S. F. (2021). Patterns and predictors of private and public health care utilization among residents of an informal settlement in Nairobi, Kenya: A cross-sectional study. *BMC Public Health*, 21, Article 850.
- Wanjiru, N., & Njeru, E. (2021). Maternal health access and traditional beliefs: A Kenyan perspective. *East African Medical Journal*, 98(4), 234–240.
- World Bank. (2021). *World development indicators: Maternal mortality*.
- WHO. (2019). *Trends in maternal mortality: 1990 to 2015*. World Health Organization.
- WHO. (2020). *The role of religion in enhancing universal access to maternal healthcare*. World Health Organization.
- WHO. (2021). *Rural health: A global perspective on health and healthcare access*. World Health Organization.
- Yadav, S. (2020). Religion and maternal health in India: Barriers and facilitators. *International Journal of Health Planning and Management*, 35(2), 310–322.