

IMPROVING MATERNAL OUTCOMES THROUGH MATERNAL HEALTH LITERACY IN NIGERIA

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ABSTRACT

Background: Maternal health literacy plays a pivotal role in shaping health outcomes during pregnancy.

Objective: This article aims to investigate the relationship between maternal health literacy and pregnancy outcomes in Nigeria, highlighting the imperative for enhanced maternal health literacy and increased awareness among healthcare providers.

Methods: A comprehensive literature review was conducted from 2015-2023 to capture only the variables identified in the seminar objective to elucidate the association between maternal health literacy and pregnancy outcomes. Data for this review paper were from published studies relevant to Nigeria and electronic databases of Medline, Scopus, PubMed, CINAHL, and Google Scholar were searched using the keywords. Literature was retrieved and screened for eligibility.

Keywords: Improving maternal health, Health literacy, Maternal health literacy, Maternal outcome, Pregnancy outcome, Feto-maternal outcome

Introduction

The Concept of Maternal Health Literacy

Maternal health literacy (MHL) stands at the intersection of healthcare access, knowledge acquisition, and effective decision-making for women navigating the intricacies of pregnancy and childbirth. Defined as proficiency in understanding and utilizing health-related information specific to obstetrics and gynecology, MHL encompasses cognitive and social abilities crucial for women to manage their health and that of their offspring (Tavananezhad et al., 2022). The concept, elucidated by Mobley et al. (2014) and Tuvalanezhad et al. (2022), emphasizes the role of cognitive and social aptitudes in empowering women to assimilate and implement information effectively, thereby promoting positive feto-maternal health (Mobley et al., 2014). Ensuring maternal health and successful pregnancy hinges on the possession of adequate information and skills related to maternal health. From recognizing risk factors to adopting a nutritious diet during gestation, maternal health literacy plays a pivotal role in promoting positive health behaviors and outcomes (Bello et al., 2022; Mate et al., 2021). Prenatal education programs that prioritize evidence-based information on pregnancy, childbirth, and infant care offer avenues for women to acquire diverse knowledge on pain management techniques, obstetric interventions, and contraceptive methods (Mate et al., 2021; Lasis et al., 2016).

However, despite the recognized benefits of comprehensive maternal health literacy, a significant percentage of pregnant women in Nigeria face barriers to engaging in health-related activities due to limited literacy skills, numeracy abilities, and difficulties comprehending medical instructions (Meldgaard et al., 2022; Solhi et al., 2019) This impediment not only affects access to healthcare information but also exacerbates disparities in maternal and child health outcomes, as evidenced by the prevalence of inadequate MHL, estimated between 10% and 45.5% in 2021 (Bello et al., 2022; Azugbene, 2017). The consequences of inadequate maternal health literacy extend beyond pregnancy and childbirth, impacting maternal and child

health behaviors, access to healthcare information, and postpartum care (Lori et al., 2017; Cheng & Chen, 2023). Recognizing the urgency of addressing this issue, researchers are increasingly focusing on strategies to improve MHL in Nigeria, aiming to achieve better maternal and child health outcomes (Phommachanh et al., 2021; Jiregna et al., 2024). In light of the significance of maternal health literacy in shaping maternal and child health outcomes, this paper aims to explore the current landscape of MHL in Nigeria and propose interventions to enhance maternal health literacy.

Inclusion and Exclusion Criteria

Inclusion Criteria

Literature Reviews from 2015 to 2023 published in the English language were included in the study. The literature review included in the study were studies that analyzed MHL in low-resourced countries.

Exclusion Criteria

Literature reviews that were published before 2015 and not published in the English language were excluded from the study.

Prevalence of Maternal Health Literacy Outcome

Inadequate maternal health literacy is a significant challenge affecting maternal and child health outcomes globally, particularly in low-income and underserved populations. Despite efforts to improve healthcare access and education, maternal mortality rates remain alarmingly high in many regions, including Nigeria. This narrative article aims to explore the prevalence and implications of inadequate maternal health literacy on pregnancy outcomes in Nigeria, highlighting the urgent need for targeted interventions to address this issue.

Prevalence of Inadequate Maternal Health Literacy:

In Nigeria, maternal mortality rates continue to pose a significant public health concern, with 1 in 13 pregnancies resulting in maternal death (UNICEF, 2018; Anastasi, 2023). Tamma et al. (2023) highlighted that the lack of knowledge on maternal health contributes to complications such as gestational hypertension, vesicovaginal fistula, and postpartum hemorrhage, leading to adverse pregnancy outcomes, including fetal-maternal mortality and morbidity. This underscores the critical role of maternal health literacy in promoting safe pregnancies and reducing maternal mortality rates.

Impact of maternal health literacy on Maternal and Child Health:

Despite global initiatives such as the Millennium Development Goals (MDGs) and efforts to improve maternal healthcare in Sub-Saharan African countries, including Nigeria, maternal mortality rates remain disproportionately high (Mekonnen et al., 2019; WHO, 2024). Nigeria, in particular, faces challenges with maternal mortality, with approximately 59,000 women dying each year due to pregnancy-related complications (Olonade et al., 2019). Research indicates that enhancing maternal health literacy during antenatal care could potentially prevent a significant number of these deaths (Ope, 2020; Lori et al., 2021). The alarming rate of

maternal death in Nigeria highlights the urgent need to address gaps in maternal health literacy and improve access to essential healthcare information.

Role of Health Literacy Education:

Studies have shown that women with adequate health literacy are more likely to engage in health-promoting behaviors during pregnancy (Solhi et al., 2019). Health literacy education has been associated with improvements in maternal nutrition, physical activity, prenatal care, early antenatal registration, utilization, and adherence to nutritional supplements (Teweldemedhin et al., 2021). Additionally, antenatal self-care initiatives have demonstrated positive impacts on maternal health outcomes, emphasizing the importance of enhancing maternal health literacy as a fundamental aspect of prenatal care (Kenward, 2021; Afaya et al., 2020).

Implications for Healthcare Delivery:

Addressing the impact of inadequate maternal health literacy requires a multifaceted approach, including the provision of comprehensive and culturally appropriate health education materials for pregnant women. Effective communication strategies, both oral and written, are essential to ensure that women receive critical information on pregnancy, childbirth, and postpartum care (Valero-Chlleron et al., 2021; Shahd et al., 2022; Trezona et al., 2017, Bremer et al., 2021). Counseling services before and after childbirth play a crucial role in supporting women and addressing their health literacy needs (Slomian et al., 2017; Lopez-Gonzalez & Kopparapu, 2024; Adams et al., 2023).

Inadequate maternal health literacy remains a significant challenge impacting maternal and child health outcomes in Nigeria. Addressing this issue requires collaborative efforts from healthcare providers, policymakers, and communities to improve access to healthcare information and enhance maternal health literacy. By prioritizing maternal health education and empowering women with the knowledge and skills to make informed decisions, Nigeria can take significant strides toward reducing maternal mortality rates and improving overall maternal and child health outcomes.

Importance of maternal health literacy

Maternal health literacy plays a vital role in ensuring the well-being of mothers and children, spanning from pregnancy to postpartum care and beyond. This narrative article delves into the importance of maternal health literacy in promoting maternal and child health, emphasizing its significance in identifying risk factors, promoting proper nutrition, and enhancing access to essential healthcare services.

Identifying Risk Factors and Taking Action: Maternal health literacy empowers women to recognize and respond to risk factors associated with pregnancy and childbirth (Elmusharaf et al., 2015). From understanding warning signs of complications to seeking timely medical assistance, maternal health literacy enables mothers to make informed decisions that safeguard their health and that of their children. Equipping women with the knowledge to identify and address potential risks, maternal health literacy plays a pivotal role in preventing adverse maternal and child health outcomes (WHO, 2024). Maternal health literacy is instrumental in promoting effective pregnancy, labour, and postpartum care, and which are essential

components of maternal and child health. Women who possess adequate health literacy are better equipped to navigate the complexities of pregnancy, access prenatal care services, and adhere to recommended health behaviors. Moreover, maternal health literacy facilitates understanding of proper nutrition, illness detection, and preventive strategies during pregnancy and postpartum periods, leading to improved maternal and child health outcomes.

Influencing Future Generations' Health: Maternal and fetal health not only impacts the immediate well-being of mothers and children but also has far-reaching implications for future generations' health (Brags et al., 2012). Healthy pregnancies and positive birth outcomes contribute to healthier children and families, thereby fostering healthier communities and societies. Furthermore, maternal health literacy serves as a predictor of future public health issues, providing insights into the health needs of families, communities, and healthcare systems. By prioritizing maternal health literacy, we can lay the foundation for improved health outcomes across generations. Maternal health literacy is indispensable for promoting maternity and child health, encompassing the ability to identify risk factors, access essential healthcare services, and make informed decisions throughout the maternal and child health continuum. As we strive to improve maternal and child health outcomes, investing in maternal health literacy emerges as a fundamental strategy for empowering women, enhancing healthcare access, and building healthier communities for generations to come.

MHL in Nigeria and other African countries

Maternal health literacy (MHL) plays a critical role in ensuring healthy pregnancies and positive pregnancy outcomes worldwide. However, in both developed and developing countries, including Nigeria and other African nations, challenges related to inadequate MHL persist, posing significant barriers to maternal and child health. This narrative article explores the state of MHL in Nigeria and other African countries, highlighting key findings from recent studies and identifying strategies to address these challenges.

Influence of MHL on Pregnancy Outcomes: Recent studies conducted in Nigeria have underscored the significant influence of maternal health literacy on pregnancy outcomes. Mojinyinola's research in Ibadan, Oyo State, revealed a notable association between maternal health literacy and healthy pregnancy outcomes among women attending public hospitals (Mojinyinola, 2011). Similarly, Bello et al. (2022) emphasized the relationship between inadequate MHL and poor pregnancy outcomes, with more than one-third of study participants exhibiting inadequate maternal health literacy. These findings underscore the importance of addressing MHL as a determinant of maternal and child health outcomes in Nigeria.

Preventive Potential in Antenatal Care: Studies conducted in other African countries further highlight the preventive potential of adequate maternal health literacy, particularly in the context of antenatal care. Handebo et al.'s research in Ethiopia concluded that maternal deaths could be prevented through adequate MHL and utilization of antenatal services (Handebo et al., 2019). This highlights the critical role of MHL in promoting access to essential healthcare services and preventing adverse maternal outcomes in resource-limited settings.

Barriers to Maternal Health Literacy: Despite its importance, MHL faces various barriers in low-income countries, including economic factors, cultural beliefs, poor family support, and inadequate quality of care (Dahab & Sakellariou, 2020). Dahab and Sakellariou's findings underscore the need to address these barriers comprehensively to improve maternal health literacy and promote better maternal and child health outcomes. Similarly, studies conducted

in Laos revealed significant challenges in MHL, with a majority of mothers experiencing difficulties in accessing, understanding, appraising, and applying health information (Phommachanh et al., 2021).

Addressing Challenges and Promoting Better Outcomes: To address the challenges of inadequate maternal health literacy in Nigeria and other African countries, multifaceted approaches are needed. These include targeted health education programs, community-based interventions, and improvements in the quality and accessibility of healthcare services. Additionally, addressing socio-economic disparities and cultural beliefs is essential to creating an enabling environment for promoting maternal health literacy and empowering women to make informed decisions about their health and that of their children. Maternal health literacy is a crucial determinant of maternal and child health outcomes in Nigeria and other African countries. While challenges related to inadequate MHL persist, targeted interventions and comprehensive strategies can help address these barriers and promote better maternal and child health outcomes. By prioritizing maternal health literacy and investing in empowering women with essential health knowledge, we can contribute to improving maternal and child health outcomes and advancing overall healthcare equity in Nigeria and beyond.

Challenges for Maternal Literacy During Pregnancy

Maternal literacy during pregnancy is integral to promoting maternal and child health outcomes, yet numerous challenges persist globally. This narrative article explores the multifaceted challenges faced by pregnant women in attaining adequate maternal literacy and the implications for maternal and child health.

Health Literacy and Pregnancy: The acquisition, comprehension, and application of health information are pivotal during pregnancy, influencing various aspects of maternal and child health. Poor maternal health literacy encompasses a lack of reading and comprehension skills, insufficient knowledge of newborn care, and limited understanding of pregnancy complications and preventive measures (Nawab et al., 2021; Gaupsiene et al., 2023). Activities such as healthy food preparation, postnatal care knowledge, and self-regulation during pregnancy are hindered by inadequate health literacy (Nankumbi, 2018; Beraki et al., 2020).

Impact on Maternal and Child Health: Studies indicate that limited health literacy among pregnant women can have profound implications for maternal and child health outcomes. Nawabi et al. observed that women with limited health literacy were less likely to initiate breastfeeding immediately after childbirth and faced challenges in comprehending health-related literature on postpartum care (Nawabi et al., 2021; Poon et al., 2021; Ruderman et al., 2021). This highlights the critical role of maternal literacy in promoting essential healthcare practices and preventive measures during pregnancy and beyond.

Determinants of Health Literacy: Various determinants influence individuals' health literacy levels, including socioeconomic status, educational attainment, racial/ethnic background, age, and disability status (Svendsen et al., 2020; Braveman & Gottlieb, 2014). Addressing these determinants is essential for mitigating disparities in maternal health literacy and ensuring equitable access to healthcare information and services for pregnant women.

Communication Challenges: Communication of health information poses significant challenges, as it requires tailoring information to diverse literacy levels and ensuring

comprehension among all patients. Health professionals must effectively communicate health information in a manner that is accessible and understandable to patients of varying literacy levels (Alderwick et al., 2021; Murugesu et al., 2022). Failure to do so can impede patients' understanding of their health conditions and treatment options, compromising their ability to make informed decisions about their care.

Maternal literacy during pregnancy is vital for promoting optimal maternal and child health outcomes. However, numerous challenges, including limited health literacy, communication barriers, and disparities in determinants of health literacy, persist globally. Addressing these challenges requires a concerted effort from healthcare providers, policymakers, and communities to improve access to healthcare information, enhance communication strategies, and address social determinants of health. By prioritizing maternal literacy during pregnancy, we can empower women to make informed decisions about their health and enhance maternal and child health outcomes (Sahoo et al., 2021).

Timeline for educational efforts during pregnancy

S/N	TRIMESTER	ANTENATAL SERVICES
Week 1 to Week 12	First trimester	Antenatal services every month
Week 13 to Week 24	Second trimester	Antenatal services on a 3-weekly basis.
Week 25 to Week 36	Third trimester	Antenatal services on a 2weekly basis
Week 36 to Week 40	Third trimester	Antenatal services every week

Impact of maternal health information on pregnancy

Maternal mortality remains a significant public health challenge, particularly in low- and middle-income countries, where the majority of fatalities occur. Improving maternal health literacy (MHL) and promoting maternal health information during pregnancy play crucial roles in reducing maternal mortality rates and ensuring positive pregnancy outcomes. This narrative article delves into the impact of maternal health information on pregnancy and the imperative of enhancing MHL to address maternal mortality.

Maternal Mortality: Maternal mortality is a global concern, and defined as the ratio of maternal deaths per 100,000 live births, disproportionately affects women in low- and middle-income countries, highlighting the urgent need for interventions to improve maternal health (Filippi et al., 2016; WHO, 2024). Nigeria, despite global efforts to reduce maternal mortality rates, has not met the UN's fifth Millennium Development Goal of reducing maternal mortality by 75% by 2015 (WHO, 2018; WHO, 2019; Omer et al., 2021; Meh et al., 2019). Enhancing maternal health education and promoting informed health decisions during pregnancy and childbirth are critical strategies for lowering maternal mortality rates (WHO, 2023).

Promoting Maternal Health Literacy: Promoting maternal health literacy is paramount in encouraging pregnant women to adopt health-promoting behaviors and utilize maternal health services effectively (Braveman & Gottlieb, 2014). Despite the global decline in maternal mortality rates, Nigeria continues to struggle with high maternal mortality rates, emphasizing

the urgent need to enhance MHL (Meh et al., 2019; Olamijulo et al., 2019; WHO, 2023). Studies suggested that increasing the utilization of maternal healthcare services could significantly improve pregnancy outcomes and contribute to positive parenting (Awotunde et al., 2019). However, the lack of maternal health literacy complicates decision-making processes related to pregnancy, prenatal care, and maternal health services utilization, posing risks to both maternal and child health (Asogwa et al., 2022; Downe et al., 2019).

Addressing Literacy Gaps: Addressing literacy gaps among pregnant women is crucial for improving maternal and child health outcomes. Illiteracy rates among women in Nigeria highlight the need for education and health promotion initiatives targeting pregnant women and new mothers (Imo et al., 2022). Education empowers women to access health information, evaluate care options, and make informed decisions about their health and that of their children (Nuamah et al., 2019). Training healthcare staff to support pregnant women in enhancing their maternal health literacy is essential for improving pregnancy outcomes and reducing maternal and newborn morbidity and mortality (Amwonya et al., 2022; Weitzman, 2017). The impact of maternal health information on pregnancy cannot be overstated, as it plays a pivotal role in reducing maternal mortality rates and ensuring positive pregnancy outcomes. Empowering pregnant women with comprehensive health information, promoting maternal health literacy, and addressing literacy gaps are essential strategies for improving maternal and child health outcomes in Nigeria and beyond. By prioritizing maternal health education and enhancing MHL, we can work towards achieving the goal of reducing maternal mortality rates and ensuring a healthier future for mothers and children.

Strategies to Raise Maternal Health Awareness

Maternal health awareness plays a pivotal role in ensuring positive pregnancy outcomes and reducing maternal mortality rates. This narrative article explores effective strategies to raise maternal health awareness, leveraging mobile technology, simple communication methods, antenatal education, and targeted information dissemination.

Leveraging Mobile Technology: Mobile technology offers a versatile platform for disseminating maternal health information to a wide audience. Mobile applications can serve as effective tools for creating health learning and training materials, providing accessible and interactive resources for pregnant women (Karamolahi et al., 2021; Dias & Victor, 2022). These applications can deliver educational content in a user-friendly format, incorporating simple language and visual aids to enhance comprehension (Hafner et al., 2022; Shroder et al., 2019). By leveraging the flexibility and computing power of mobile devices, maternal health awareness can be raised among pregnant women, empowering them to make informed decisions about their pregnancy and childbirth.

Simple Communication and Visual Aids: Effective communication is essential for raising maternal health awareness, particularly among pregnant women with varying literacy levels. Utilizing simple language and clear messaging ensures that health information is easily understood and retained (Avignon et al., 2023; Mia et al., 2017). Incorporating pictures and drawings further enhances comprehension and retention, as visual aids are more memorable and engaging (Hafner et al., 2022; Shroder et al., 2019). By employing simple communication techniques and visual aids, maternal health information can be effectively conveyed to pregnant women, empowering them to take proactive steps to safeguard their health and that of their unborn child.

Antenatal Education: Antenatal education plays a crucial role in equipping pregnant women with the knowledge and skills necessary to navigate pregnancy, childbirth, and postpartum care. Antenatal classes focus on addressing the realities of pregnancy, childbirth, and parenting, providing expectant mothers with comprehensive information to make informed decisions (Avignon et al., 2023; Mia et al., 2017). These classes cover a range of topics, including prenatal care, labor and delivery, newborn care, and breastfeeding, empowering women to actively participate in their maternity care journey (Grenier et al., 2019; Afulani et al., 2019). By providing tailored antenatal education, maternal health awareness can be raised, fostering positive pregnancy experiences and outcomes.

Targeted Information Dissemination: Targeted information dissemination ensures that pregnant women receive relevant and timely maternal health information. Research has shown that pregnant women often lack an understanding of the signs and symptoms of pregnancy complications, highlighting the need for accurate and accessible information (Mulugeta et al., 2020; Kamineni et al., 2017). By disseminating targeted information on warning signs such as genital bleeding, convulsions, blurred vision, and severe abdominal pain, pregnant women can recognize potential complications and seek timely medical assistance (Bolanko et al., 2021). Through targeted information dissemination, maternal health awareness can be raised, empowering pregnant women to advocate for their health and well-being. Raising maternal health awareness is essential for promoting positive pregnancy outcomes and reducing maternal mortality rates. By leveraging mobile technology, employing simple communication methods, providing antenatal education, and disseminating targeted information, maternal health awareness can be effectively raised among pregnant women. Empowering expectant mothers with comprehensive knowledge and skills equips them to make informed decisions and take proactive steps to ensure a healthy pregnancy and childbirth.

Conclusion

Improving maternal outcomes through maternal health literacy (MHL) in Nigeria is paramount for reducing the high rates of maternal and infant mortality and morbidity. Enhancing maternal health awareness empowers women to engage effectively with healthcare providers, make informed decisions, and advocate for their health and that of their unborn child. The establishment of the Maternal Health Literacy Institute, dedicated to providing skills and training to midwives, emerges as a critical recommendation from this study. This institute would equip midwives with the tools to assess maternal health literacy levels and provide tailored support to mothers with low health literacy, thereby improving health outcomes. Additionally, leveraging various communication channels such as billboards, radio, and television programs can help disseminate maternal health information widely and enhance MHL among pregnant women. Furthermore, health organizations should develop policies that clarify the role of midwives in promoting maternal health awareness and advocate for health literacy as a core component of maternal healthcare policy in the country. By implementing these recommendations, Nigeria can take significant strides towards improving maternal outcomes and ensuring the well-being of mothers and infants across the nation.

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Conflict of interest

There exists an absence of conflict of interest.

Authors' Contribution/Role

Author 'O.A.' was involved in the study conception, literature review, and drafting of the paper, revising it critically for intellectual content; Author C.B contributed to the critical reviewing of the literature and effective corrections; Author L.O contributed to the final approval of the submitted version and as well contributed to the correction of the manuscript draft. All authors agree to be accountable for all aspects of the work

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