THE IMPACT OF FEMALE GENITAL MUTILATION ON THE INCIDENCE AND BURDEN OF OBSTETRIC FISTULA IN NIGERIA: A MIXED-METHODS SECONDARY DATA ANALYSIS AND EVIDENCE SYNTHESIS.

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Abstract

Female genital mutilation (FGM) remains a major public health and human rights concern, affecting the health of millions of women and girls worldwide. Nigeria continues to bear a high burden of FGM and obstetric fistula, yet evidence on their relationship remains fragmented.This study examined the relationship between female genital mutilation and the incidence and burden of obstetric fistula in Nigeria through a synthesis of available evidence.A secondary data analysis and qualitative evidence synthesis were conducted using nationally representative datasets, including the 2018 Nigeria Demographic and Health Survey and the 2021 Multiple Indicator Cluster Survey, together with reports from the World Health Organization, the United Nations Children's Fund, the United Nations Population Fund, and peer-reviewed studies published between 2000 and 2025. Evidence was critically appraised and synthesised using descriptive, comparative, and thematic approaches.The evidence revealed marked regional and socio-economic disparities in FGM prevalence across Nigeria. FGM was consistently associated with prolonged and obstructed labour, severe perineal trauma, postpartum haemorrhage, and adverse neonatal outcomes. Although obstetric fistula is primarily caused by prolonged obstructed labour, severe forms of FGM may increase susceptibility by contributing to childbirth-related injuries. Women living with obstetric fistula experience substantial physical, psychological, social, and economic burdens, compounded by inadequate access to emergency obstetric and specialised fistula care.Eliminating FGM should be integrated into broader maternal health strategies to reduce preventable obstetric complications and obstetric fistula in Nigeria. Strengthening legislation, community engagement, public health education, and access to quality emergency obstetric care is essential.

Keywords: Female genital mutilation; maternal health; Nigeria; obstetric fistula; secondary data analysis.

Introduction

Female genital mutilation (FGM) is internationally recognised as a harmful traditional practice, a form of gender-based violence, and a violation of the human rights of women and girls. The World Health Organization (WHO) defines FGM as all procedures involving the partial or total removal of the external female genitalia or other injury to the female genital organs for non-medical reasons (World Health Organization [WHO], 2024). The practice is sustained by deeply rooted sociocultural norms relating to marriageability, social acceptance, and control of female sexuality, despite having no recognised health benefits and no basis in the teachings of major religions (WHO, 2016, 2024; United Nations Children's Fund [UNICEF], 2024; United Nations Population Fund [UNFPA] & UNICEF, 2022).

FGM remains a major global public health challenge. UNICEF estimates that more than 230 million women and girls alive today have undergone FGM across over 30 countries in Africa, the Middle East, and Asia (UNICEF, 2024). Although prevalence has declined among younger generations in several countries, progress remains insufficient to achieve Sustainable Development Goal (SDG) Target 5.3, which calls for the elimination of all harmful practices by 2030 (United Nations, 2015; UNICEF, 2024). Population mobility has also expanded the relevance of FGM beyond traditionally practising countries, increasing the need for health systems worldwide to recognise and manage its consequences (WHO, 2018).

FGM is associated with a wide range of immediate and long-term health complications, including haemorrhage, infection, chronic gynaecological disorders, sexual dysfunction, psychological distress, and adverse obstetric outcomes (WHO, 2016; Berg & Underland, 2013). Evidence from the WHO multicountry study further demonstrates increased risks of prolonged labour, caesarean delivery, postpartum haemorrhage, obstetric trauma, and adverse neonatal outcomes among women who have undergone FGM, with risks increasing according to the severity of genital cutting (Banks et al., 2006; WHO Study Group on Female Genital Mutilation and Obstetric Outcome, 2006). These findings underscore the importance of FGM as both a reproductive health concern and a determinant of maternal and newborn morbidity.

Recognising these health and human rights implications, international agencies advocate integrated strategies combining legislation, community engagement, women's empowerment, education, and strengthened health systems to accelerate the abandonment of FGM and

improve the health and wellbeing of women and girls (Office of the United Nations High Commissioner for Human Rights et al., 2008; WHO, 2016; UNFPA & UNICEF, 2022).

Africa bears the greatest burden of female genital mutilation (FGM), with the practice remaining prevalent across more than 30 countries despite sustained prevention efforts (UNICEF, 2024; World Health Organization [WHO], 2024). Although prevalence varies considerably by country and population group, several countries in East, North, and West Africa continue to report high rates, while others have experienced gradual declines following legal reforms, community engagement, and expanded access to girls' education (UNICEF, 2024; United Nations Population Fund [UNFPA] & UNICEF, 2022). Nevertheless, population growth and persistent sociocultural norms continue to place millions of girls at risk, threatening progress towards the Sustainable Development Goal target of eliminating FGM by 2030 (United Nations, 2015).

Across the continent, FGM is sustained by complex social norms related to marriageability, family honour, ethnic identity, and perceived social acceptance. Decisions to perform FGM are often influenced by family members, traditional practitioners, and community expectations rather than by the girls themselves, making abandonment dependent on broader social and behavioural change rather than individual decision-making alone (Berg & Denison, 2013; Shell-Duncan &Hernlund, 2000; UNFPA & UNICEF, 2022).

Nigeria contributes substantially to the global burden because of its large population. According to the 2018 Nigeria Demographic and Health Survey, approximately one in five women aged 15–49 years has undergone FGM, while the 2021 Multiple Indicator Cluster Survey indicates a gradual decline in prevalence among younger generations (National Population Commission [NPC] & ICF, 2019; National Bureau of Statistics [NBS], UNICEF, & NPC, 2022). However, national estimates conceal pronounced regional disparities. Historically, prevalence has been highest in the South-East and South-West, particularly among the Igbo and Yoruba ethnic groups, while lower prevalence has generally been reported across much of Northern Nigeria, although important variations exist between states and communities (NPC & ICF, 2019; Okeke et al., 2012). Type I and Type II FGM remain the predominant forms practised in Nigeria (WHO, 2018).

Although Nigeria has strengthened its response through the Violence Against Persons (Prohibition) Act, 2015, and the National Policy and Plan of Action for the Elimination of FGM, implementation remains inconsistent across states because of entrenched cultural

beliefs, uneven enforcement, and health-system constraints (Federal Ministry of Health, 2022; WHO, 2024). Consequently, FGM remains an important public health challenge requiring sustained multisectoral interventions that combine legal enforcement, community engagement, education, and improved reproductive health services.

Female genital mutilation (FGM) has important implications for maternal and reproductive health, with complications that may persist throughout a woman's life. The severity of these complications depends on the type of FGM performed, the conditions under which it is carried out, and access to appropriate medical care. Immediate complications include severe pain, haemorrhage, infection, and genital tissue injury, while long-term consequences include chronic pelvic pain, sexual dysfunction, recurrent infections, menstrual disorders, infertility, and psychological distress (World Health Organization [WHO], 2016; Berg & Underland, 2013; WHO, 2024).

Evidence further indicates that FGM increases the risk of adverse obstetric outcomes. Genital scarring and reduced tissue elasticity may impair normal vaginal delivery, increasing the likelihood of prolonged labour, obstetric trauma, postpartum haemorrhage, and operative delivery, particularly among women with more extensive forms of cutting (Banks et al., 2006; WHO Study Group on Female Genital Mutilation and Obstetric Outcome, 2006; WHO, 2018). Systematic reviews have consistently reported poorer maternal and neonatal outcomes among women living with FGM, although the magnitude of risk varies according to FGM type and the availability of skilled obstetric care (Berg & Underland, 2013; Reisel & Creighton, 2015).

The relationship between FGM and obstetric fistula, however, remains less certain. Obstetric fistula is primarily caused by prolonged obstructed labour in settings where timely emergency obstetric care is unavailable (Wall, 2006; United Nations Population Fund [UNFPA], 2023). While severe forms of FGM may increase susceptibility to obstructed labour through genital scarring and anatomical narrowing, current evidence suggests that FGM contributes indirectly rather than acting as an independent cause of obstetric fistula. Instead, the condition results from the interaction of FGM with delayed access to skilled maternity care, adolescent pregnancy, socioeconomic disadvantage, and broader health-system weaknesses (Adler et al., 2013; Wall, 2006; WHO, 2018). This uncertainty underscores the need to synthesise the available evidence on the relationship between FGM and obstetric fistula within the Nigerian context.

Knowledge Gap

Existing evidence has substantially improved understanding of the prevalence, determinants, and health consequences of female genital mutilation (FGM) in Nigeria. National surveys have documented marked geographical and socioeconomic variations in FGM prevalence, while clinical studies have consistently linked the practice to adverse maternal and reproductive health outcomes (National Population Commission [NPC] & ICF, 2019; National Bureau of Statistics [NBS], UNICEF, & NPC, 2022; Berg & Underland, 2013; World Health Organization [WHO], 2016).

However, the relationship between FGM and obstetric fistula remains insufficiently understood. Although prolonged obstructed labour is recognised as the primary cause of obstetric fistula, the extent to which FGM contributes to fistula development directly or indirectly through childbirth complications remains inconclusive (Wall, 2006; Adler et al., 2013). In addition, most Nigerian studies have examined FGM and obstetric fistula as separate public health problems, with limited efforts to integrate epidemiological, clinical, sociocultural, and health-system evidence into a unified framework.

This fragmented evidence base highlights the need for a comprehensive synthesis that critically examines the relationship between FGM and obstetric fistula in Nigeria. By integrating findings from national surveys, international reports, and peer-reviewed studies, this review seeks to clarify the current state of evidence, identify areas of consensus and uncertainty, and provide evidence to inform maternal health policy, clinical practice, and future research.

Study Justification and Objective

Female genital mutilation (FGM) and obstetric fistula remain important contributors to poor maternal health in Nigeria, particularly among women living in underserved and socioeconomically disadvantaged communities (World Health Organization [WHO], 2024; United Nations Population Fund [UNFPA], 2023). Although both conditions have been widely studied, evidence regarding their relationship remains fragmented. A comprehensive synthesis of the available evidence is therefore needed to clarify the contribution of FGM to obstetric fistula, identify contextual factors influencing this relationship, and provide evidence to support maternal health policies, FGM elimination strategies, and future research in Nigeria (Federal Ministry of Health, 2022; WHO, 2016).

The objective of this study was to examine the relationship between female genital mutilation and obstetric fistula in Nigeria through a secondary evidence synthesis. Specifically, the study sought to: (i) examine the epidemiology and regional distribution of FGM in Nigeria; (ii) synthesise evidence on the maternal and reproductive health consequences of FGM; (iii) assess the evidence linking FGM with obstetric fistula; and (iv) identify sociocultural and health-system factors relevant to the prevention of FGM and obstetric fistula.

Theoretical Framework

This study is guided by the Social Ecological Model (SEM) and the Health Belief Model (HBM), two complementary theories widely applied in public health to explain health behaviours and outcomes. The SEM recognises that health behaviours are shaped by interacting influences operating at the individual, interpersonal, community, organisational, and policy levels (Bronfenbrenner, 1979; McLeroy et al., 1988). In contrast, the HBM explains health-related decision-making through individuals' perceptions of susceptibility, severity, benefits, barriers, cues to action, and self-efficacy (Rosenstock, 1966; Becker, 1974).

The integration of these frameworks provides a comprehensive perspective for examining the relationship between female genital mutilation (FGM) and obstetric fistula in Nigeria. While the SEM identifies the multilevel social and structural determinants that sustain FGM and influence maternal health, the HBM explains how individual beliefs shape healthcare-seeking behaviour and utilisation of maternal health services. Together, these frameworks support an integrated understanding of how behavioural, sociocultural, and health-system factors interact to influence maternal health outcomes.

Social Ecological Model

The Social Ecological Model (SEM) explains health behaviours as the product of interactions between individuals and the broader social, institutional, and policy environments in which they live (Bronfenbrenner, 1979; McLeroy et al., 1988). Rather than attributing health outcomes solely to individual behaviour, the model recognises that multiple levels of influence collectively shape health practices and access to healthcare.

In the context of female genital mutilation (FGM), the SEM provides a useful framework for understanding how the practice is sustained by factors operating at different ecological

levels. At the individual level, knowledge, education, and perceptions of health influence decision-making. Interpersonal influences include family members and caregivers who often determine whether girls undergo FGM. At the community level, cultural norms, social expectations, and traditional practices reinforce its continuation. Organisational influences relate to the availability and quality of health services, while the policy level encompasses legislation, national strategies, and international commitments aimed at eliminating FGM and improving maternal health (Federal Ministry of Health, 2022; United Nations, 2015; World Health Organization [WHO], 2024).

This study applies the SEM to examine how these interacting determinants contribute to the persistence of FGM and influence maternal health outcomes, including obstetric fistula. The model highlights that effective prevention requires coordinated interventions that address behavioural, community, health-system, and policy factors simultaneously, rather than focusing on individual behaviour alone.

Health Belief Model

The Health Belief Model (HBM) explains health behaviour through individuals' perceptions of health risks and the factors influencing behavioural change (Rosenstock, 1966; Becker, 1974). The model proposes that health-related actions are influenced by perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy (Glanz et al., 2015).

In the context of female genital mutilation (FGM), the HBM provides a behavioural perspective for understanding decisions to continue or abandon the practice and to utilise maternal healthcare services. Women's and families' perceptions of the health risks associated with FGM, including obstetric complications, their beliefs about the benefits of abandoning the practice, perceived social or cultural barriers, exposure to health education and community advocacy, and confidence in seeking skilled maternity care all influence health-related decision-making.

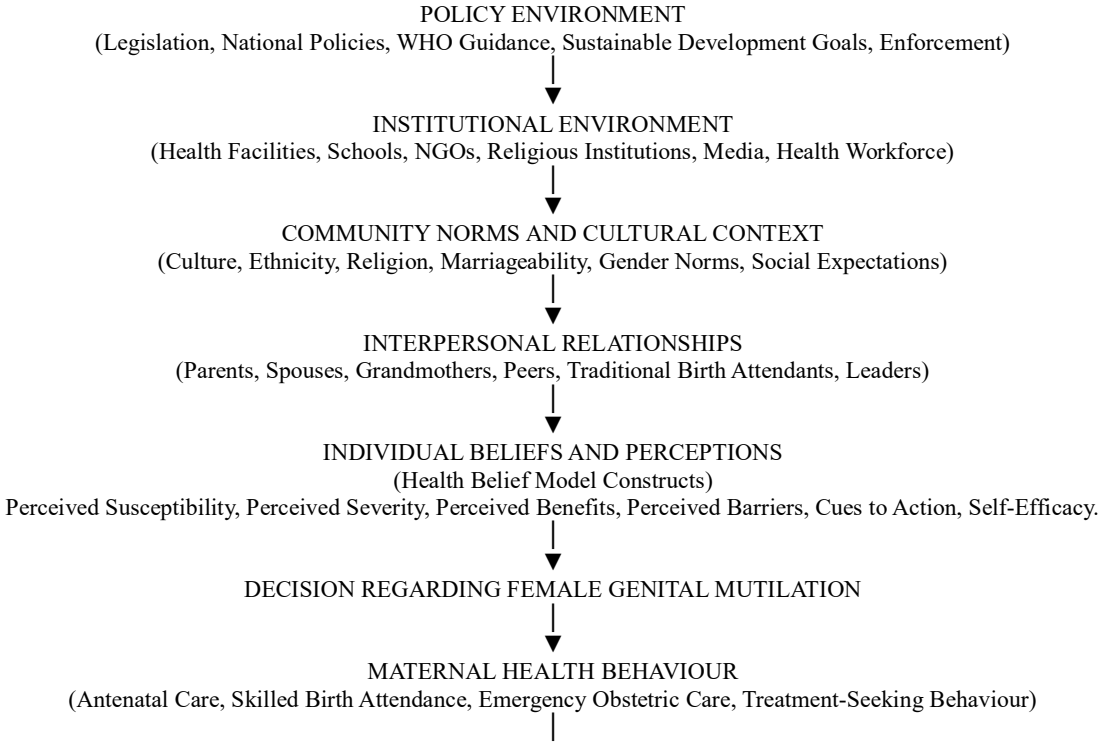
This study applies the HBM to explain how individual beliefs and perceptions shape responses to the risks associated with FGM and maternal health. When considered alongside the Social Ecological Model, the HBM complements the broader social and structural perspective by explaining the cognitive factors that influence behavioural change and healthcare utilisation among women at risk of adverse obstetric outcomes.

Integration of the Social Ecological Model and Health Belief Model

The integration of the Social Ecological Model (SEM) and the Health Belief Model (HBM) provides a comprehensive framework for understanding the relationship between female genital mutilation (FGM) and obstetric fistula in Nigeria. While the SEM explains how individual behaviour is shaped by interpersonal, community, organisational, and policy influences, the HBM complements this perspective by explaining how individual perceptions of risk, benefits, barriers, and self-efficacy influence health-related decisions (McLeroy et al., 1988; Glanz et al., 2015).

Applied together, the two models demonstrate that the persistence of FGM results from the interaction between sociocultural norms, institutional and policy environments, and individual beliefs. Likewise, women's decisions to seek skilled maternal healthcare are influenced not only by personal perceptions of obstetric risk but also by family support, community expectations, access to quality healthcare, and the broader health system. This integrated framework therefore provides a suitable basis for interpreting the multifactorial pathways linking FGM, maternal healthcare utilisation, and obstetric fistula in Nigeria.

Figure 1. Conceptual Pathway Linking Female Genital Mutilation and Obstetric Fistula through the Integrated Social Ecological Model and Health Belief Model.



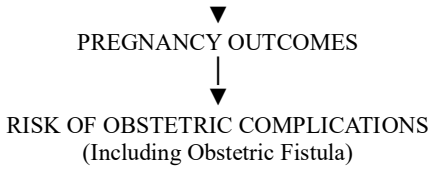


Figure 1.*Integrated conceptual framework illustrating how multilevel environmental influences described by the Social Ecological Model interact with individual cognitive processes explained by the Health Belief Model to shape decisions regarding female genital mutilation, maternal healthcare utilisation, pregnancy outcomes, and the risk of obstetric complications in Nigeria. Adapted from Bronfenbrenner (1979), McLeroy et al. (1988), Rosenstock (1966), Becker (1974), and Glanz et al. (2015).*

Relevance of the Theoretical Framework to the Present Study

The integrated application of the Social Ecological Model (SEM) and the Health Belief Model (HBM) provides an appropriate conceptual framework for examining the relationship between female genital mutilation (FGM) and obstetric fistula in Nigeria. The SEM situates FGM within the broader social, cultural, institutional, and policy contexts that sustain the practice and influence access to maternal healthcare, while the HBM explains how individual perceptions and beliefs shape health-related decisions and healthcare-seeking behaviours.

Together, these complementary frameworks guided the interpretation of evidence by recognising that the occurrence of obstetric fistula is influenced by both structural determinants and individual behavioural factors. They also informed the synthesis of epidemiological, clinical, sociocultural, and policy evidence, highlighting the need for integrated interventions that combine behavioural change, community engagement, strengthened maternal healthcare systems, and effective policy implementation to reduce the burden of FGM and obstetric fistula in Nigeria.

Methodology

This study employed a secondary evidence synthesis to examine the relationship between female genital mutilation (FGM) and obstetric fistula in Nigeria. A narrative and thematic synthesis approach was used to integrate evidence from national surveys, peer-reviewed studies, systematic reviews, and policy documents. This approach was considered appropriate because it enabled the synthesis of epidemiological, clinical, sociocultural, and health-system evidence relevant to the study objectives (Johnston, 2017; Popay et al., 2006).

Data were identified through a structured literature search, screened using predefined eligibility criteria, critically appraised, and synthesised to provide an integrated understanding of the relationship between FGM and obstetric fistula. As the study relied exclusively on publicly available secondary sources, no primary data were collected and no human participants were involved

Results

Overview of the Evidence Base

This review synthesised evidence from nationally representative surveys, international reports, peer-reviewed literature, systematic reviews, and Nigerian policy documents to examine the relationship between female genital mutilation (FGM) and obstetric fistula. The principal evidence sources included the 2018 Nigeria Demographic and Health Survey (NDHS), the 2021 Nigeria Multiple Indicator Cluster Survey (MICS), publications from the World Health Organization (WHO), UNICEF and UNFPA, and relevant clinical and epidemiological studies conducted in Nigeria and other sub-Saharan African countries.

The evidence consistently addressed three broad areas: the epidemiology and distribution of FGM in Nigeria, its maternal and reproductive health consequences, and the available evidence linking FGM with obstetric fistula within broader sociocultural and health-system contexts.

Table 1. Summary of the Evidence Included in the Review

Evidence source	Primary contribution
Nigeria Demographic and Health Survey (2018)	National prevalence and demographic distribution of FGM
Nigeria Multiple Indicator Cluster Survey (2021)	Recent prevalence estimates and population trends
WHO publications	Global epidemiology and clinical evidence on FGM
UNICEF and UNFPA reports	Global burden, programme evidence, and policy guidance
Systematic reviews and meta-analyses	Synthesised evidence on maternal and reproductive outcomes
Observational and clinical studies	Evidence on FGM-related obstetric complications and fistula
National policy documents	Legislative and institutional responses to FGM in Nigeria

National Distribution of Female Genital Mutilation in Nigeria

The reviewed evidence indicates that female genital mutilation (FGM) remains prevalent in Nigeria despite a gradual decline over recent decade. According to the 2018 Nigeria Demographic and Health Survey (NDHS), approximately 20% of women aged 15–49 years reported having undergone FGM (National Population Commission [NPC] & ICF, 2019). Findings from the 2021 Nigeria Multiple Indicator Cluster Survey (MICS) similarly suggest lower prevalence among younger generations, indicating a gradual decline in the practice (National Bureau of Statistics [NBS], UNICEF, & NPC, 2022).

Marked geographical disparities were evident across Nigeria's six geopolitical zones. The highest prevalence was reported in the South-East and South-West, whereas lower prevalence was generally observed in the North-West and North-East, although important variations exist between states and ethnic groups (NPC & ICF, 2019). National surveys also showed differences by age, education, household wealth, ethnicity, and place of residence, with prevalence generally higher among older women and populations where traditional practices remain deeply rooted (NPC & ICF, 2019; NBS et al., 2022).

Although Nigeria's national prevalence is lower than that of several African countries, its large population means that it contributes substantially to the global number of women and girls living with FGM (UNICEF, 2024; World Health Organization [WHO], 2024).

Table 2. National Distribution of Female Genital Mutilation in Nigeria

Indicator	**Key finding**	**Principal evidence source**
National prevalence among women aged 15–49 years	Approximately 20%	NDHS 2018
Temporal trend	Gradual decline, particularly among younger women	NDHS 2018; MICS 2021
Highest burden	South-East and South-West geopolitical zones	NDHS 2018
Lower reported prevalence	North-West and North-East (with state-level variation)	NDHS 2018
Demographic disparities	Variation by age, education, household wealth, ethnicity, and place of residence	NDHS 2018; MICS 2021
Global significance	Nigeria contributes substantially to the global number of women and girls living with FGM because of its large population	UNICEF 2024; WHO 2024

Figure 1. Regional distribution of female genital mutilation in Nigeria.

Maternal and Reproductive Health Consequences of Female Genital Mutilation

The reviewed evidence consistently shows that female genital mutilation (FGM) is associated with adverse maternal and reproductive health outcomes, with the severity of complications varying according to the type of FGM and access to skilled obstetric care (World Health Organization [WHO], 2016, 2018).

Immediate complications reported across the literature include severe pain, haemorrhage, genital injury, urinary retention, infection, and, in severe cases, sepsis or death. Long-term consequences include chronic pelvic pain, recurrent urinary tract infections, dysmenorrhoea, genital scarring, sexual dysfunction, and psychological disorders such as anxiety, depression, and post-traumatic stress symptoms (WHO, 2016; Berg et al., 2014).

The strongest evidence relates to adverse obstetric outcomes. Systematic reviews and multicountry studies consistently report higher risks of prolonged labour, obstructed labour, perineal tears, postpartum haemorrhage, instrumental delivery, and caesarean section among women who have undergone FGM compared with those who have not (WHO Study Group on Female Genital Mutilation and Obstetric Outcome, 2006; Berg & Underland, 2013). These complications are more pronounced among women with extensive genital scarring and in settings with limited access to comprehensive emergency obstetric care.

Table 3. Summary of Maternal and Reproductive Health Consequences of Female Genital Mutilation

Category	**Principal complications reported in the literature**
Immediate complications	Severe pain, haemorrhage, infection, urinary retention, genital injury, sepsis, death
Long-term gynaecological complications	Chronic pelvic pain, recurrent urinary tract infections, dysmenorrhoea, genital scarring, menstrual complications
Sexual and psychological consequences	Dyspareunia, sexual dysfunction, anxiety, depression, post-traumatic stress symptoms, reduced quality of life
Obstetric complications	Prolonged labour, obstructed labour, perineal tears, postpartum haemorrhage, instrumental delivery, caesarean section
Severe maternal outcomes	Increased susceptibility to childbirth injuries, including obstetric fistula, particularly where emergency obstetric care is limited

Evidence Linking Female Genital Mutilation and Obstetric Fistula

The reviewed evidence indicates that the relationship between female genital mutilation (FGM) and obstetric fistula is indirect and multifactorial. While prolonged obstructed labour remains the immediate cause of most obstetric fistula cases, FGM may increase susceptibility to labour complications by causing genital scarring, fibrosis, reduced tissue elasticity, and vaginal narrowing (WHO Study Group on Female Genital Mutilation and Obstetric Outcome, 2006; Berg & Underland, 2013).

Clinical studies consistently report higher risks of prolonged labour, obstructed labour, severe perineal trauma, postpartum haemorrhage, instrumental delivery, and caesarean section among women with Type II and Type III FGM than among women without FGM (WHO Study Group on Female Genital Mutilation and Obstetric Outcome, 2006; World Health Organization [WHO], 2018). These risks increase with the severity of genital cutting but may be reduced through appropriate obstetric management, including timely deinfibulation where indicated.

Despite this biological plausibility, the evidence does not support FGM as an independent cause of obstetric fistula. Rather, fistula develops when FGM-related obstetric complications occur alongside prolonged obstructed labour and inadequate access to emergency obstetric care. Across the reviewed studies, delayed healthcare seeking, shortages of skilled birth attendants, weak referral systems, early marriage, adolescent pregnancy, and limited comprehensive emergency obstetric and newborn care (EmONC) consistently emerged as factors that increase the likelihood of fistula formation.

Overall, the evidence supports a multifactorial pathway in which FGM contributes to obstetric fistula indirectly by increasing vulnerability to childbirth complications, while the occurrence of fistula is ultimately determined by the interaction of clinical, sociocultural, and health-system factors.

Table 4. Summary of Evidence Linking Female Genital Mutilation and Obstetric Fistula

Evidence domain	Key findings
Biological plausibility	FGM causes genital scarring, fibrosis, reduced tissue elasticity, and vaginal narrowing that may complicate labour.
Obstetric outcomes	Higher risks of prolonged labour, obstructed labour, severe perineal trauma, postpartum haemorrhage, instrumental delivery, and caesarean section are reported among women with FGM.
Direct causation	Current evidence does not support FGM as an independent cause of obstetric fistula.
Indirect pathway	FGM increases susceptibility to childbirth complications that may progress to fistula when emergency obstetric care is delayed or unavailable.
Modifying factors	Early marriage, adolescent pregnancy, poverty, delayed healthcare seeking, weak referral systems, and limited EmONC services amplify the risk of fistula formation.
Overall conclusion	Obstetric fistula results from the interaction of FGM with broader clinical, sociocultural, and health-system determinants rather than from FGM alone.

Figure 2. Conceptual clinical pathway linking female genital mutilation to obstetric fistula through obstructed labour and health-system determinants.

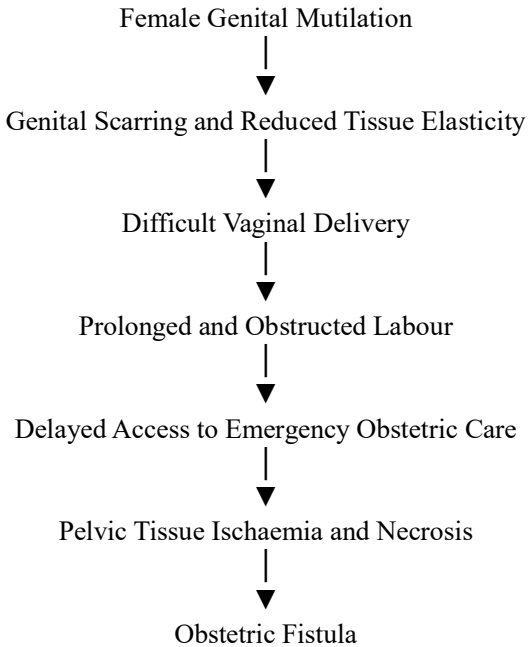


Figure 2. Simplified clinical pathway illustrating how female genital mutilation may contribute indirectly to obstetric fistula through its influence on labour and childbirth

complications. The progression to fistula is substantially modified by timely access to skilled obstetric care and comprehensive emergency obstetric services.

Sociocultural and Health-System Determinants

The reviewed evidence identified several sociocultural and health-system factors associated with the persistence of female genital mutilation (FGM) and the burden of obstetric fistula in Nigeria. Across the included studies, harmful cultural norms, gender inequality, limited access to quality maternal healthcare, and weaknesses in health service delivery consistently emerged as important determinants.

Sociocultural evidence showed that FGM is sustained by beliefs relating to marriageability, family honour, cultural identity, and social acceptance. Decisions regarding the practice are commonly influenced by family members, community leaders, and traditional practitioners, reflecting the collective nature of decision-making within many communities. Although religious beliefs are sometimes cited, the reviewed literature consistently identified cultural rather than religious factors as the primary drivers of FGM (United Nations Children's Fund [UNICEF], 2024; World Health Organization [WHO], 2024).

The reviewed studies also identified early marriage, adolescent pregnancy, poverty, low educational attainment, limited female autonomy, and poor reproductive health knowledge as factors associated with both the continuation of FGM and increased vulnerability to adverse maternal outcomes. Health-system challenges, including inadequate coverage of skilled birth attendants, shortages of trained healthcare personnel, weak referral systems, financial barriers, and limited availability of comprehensive emergency obstetric and newborn care (EmONC), were consistently associated with delayed management of obstetric complications, particularly in rural and underserved communities.

National policy documents further indicated that, despite the existence of legislation and national strategies addressing FGM and maternal health, implementation remains inconsistent across states because of variations in enforcement, resource availability, and health-system capacity.

Table 5. Sociocultural and Health-System Determinants Identified Across the ReviewedEvidence

Determinant	Evidence reported in the literature	Implication for maternal health
Cultural norms and traditions	FGM maintained as a social and cultural practice linked to identity and marriageability	Sustains continuation of FGM across generations
Gender inequality	Limited female autonomy in reproductive and healthcare decision-making	Delayed healthcare seeking and increased obstetric risk
Early marriage and adolescent pregnancy	Frequently co-occurs with FGM in high-burden communities	Higher likelihood of obstructed labour and childbirth complications
Poverty and low educational attainment	Reduced access to health information and maternity services	Increased vulnerability to adverse maternal outcomes
Limited access to skilled maternity care	Inadequate antenatal care, skilled birth attendance, and EmONC services	Increased progression from obstetric complications to fistula
Weak referral systems	Delays in diagnosis, referral, and definitive obstetric management	Greater risk of severe maternal morbidity
Policy implementation challenges	Variable enforcement of anti-FGM legislation and maternal health policies	Continued persistence of FGM and preventable obstetric complications

Discussion

Interpretation ofFindings

This review demonstrates that female genital mutilation (FGM) remains an important public health and human rights challenge in Nigeria despite evidence of a gradual decline in national prevalence. The persistence of marked regional disparities indicates that FGM is sustained by deeply rooted sociocultural norms rather than geographical location alone, with prevalence remaining highest in communities where the practice is closely linked to marriageability, family honour, and cultural identity. These findings are consistent with national surveys and previous studies identifying social norms as key determinants of FGM persistence (National Population Commission [NPC] & ICF, 2019; National Bureau of Statistics [NBS], UNICEF, & NPC, 2022; Berg & Denison, 2013; UNICEF, 2024).

The principal finding of this review is that the relationship between FGM and obstetric fistula is indirect and multifactorial rather than causal. Although FGM may increase the risk of prolonged or obstructed labour through genital scarring and reduced tissue elasticity, the reviewed evidence indicates that obstetric fistula develops primarily when these complications occur alongside delayed access to skilled obstetric care, adolescent pregnancy, poverty, weak referral systems, and limited availability of comprehensive emergency obstetric and newborn care. This finding reinforces the view that FGM should be considered an important contributory factor rather than an independent cause of obstetric fistula, consistent with the WHO multicountry study and subsequent systematic reviews (WHO Study Group on Female Genital Mutilation and Obstetric Outcome, 2006; Berg & Underland, 2013).

Comparison with the broader literature further strengthens this interpretation. While studies differ in the magnitude of the association between FGM and adverse obstetric outcomes because of variations in FGM type, study design, and healthcare context, there is broad agreement that women living with FGM experience increased risks of obstetric complications. The consistency of evidence across national surveys, international reports, and peer-reviewed studies supports the conclusion that reducing the burden of obstetric fistula requires not only eliminating FGM but also strengthening access to timely, high-quality maternal healthcare.

Public Health and Policy Implications

The findings of this review have important implications for maternal health policy and practice in Nigeria. Although the prevalence of female genital mutilation (FGM) has declined, its persistence in specific communities continues to contribute to preventable maternal morbidity. The evidence indicates that eliminating FGM should be considered not only a human rights priority but also an essential component of strategies to improve maternal health and reduce childbirth-related complications.

The review further demonstrates that preventing obstetric fistula requires integrated approaches that address both harmful traditional practices and weaknesses in maternal healthcare systems. Improvements in access to skilled birth attendance, comprehensive emergency obstetric and newborn care, effective referral systems, and quality antenatal services are likely to reduce the progression of childbirth complications among women affected by FGM.

The findings also highlight the importance of addressing the sociocultural factors that sustain FGM. Because decisions regarding the practice are strongly influenced by family members, community norms, and gender expectations, sustainable change depends on community engagement alongside supportive policy implementation. This reinforces the need for multisectoral collaboration involving the health, education, justice, and social protection sectors.

The integrated Social Ecological Model (SEM) and Health Belief Model (HBM) provide a useful framework for interpreting these findings. The SEM demonstrates that FGM is sustained by interacting influences operating across individual, interpersonal, community, institutional, and policy levels, while the HBM explains how perceptions of risk, benefits, barriers, and self-efficacy influence decisions regarding FGM and maternal healthcare utilisation. Together, these frameworks support the adoption of multilevel interventions that combine behavioural change with strengthened health systems and effective policy implementation.

Strengths, Limitations, and Future Directions

This review synthesised evidence from nationally representative surveys, international agency reports, and peer-reviewed studies to provide a comprehensive assessment of the relationship between female genital mutilation (FGM) and obstetric fistula in Nigeria. The integration of epidemiological, clinical, sociocultural, and health-system evidence, supported by the Social Ecological Model and Health Belief Model, strengthened the interpretation of the findings.

However, the review is limited by its reliance on secondary evidence, with conclusions dependent on the quality and consistency of the included studies. Variations in study design, FGM classification, outcome definitions, and geographical coverage limited direct comparisons. In addition, the available evidence primarily supports an indirect association between FGM and obstetric fistula, while prospective evidence on causal pathways remains limited.

Future research should prioritise prospective multicentre studies to clarify the relationship between FGM and obstetric fistula and evaluate the effectiveness of community-based interventions, health-system strengthening strategies, and policy implementation for reducing FGM and improving maternal health outcomes in Nigeria.

Conclusion

This review synthesised the available evidence on the relationship between female genital mutilation (FGM) and obstetric fistula in Nigeria. The findings indicate that although the prevalence of FGM has declined over time, the practice remains a significant public health and human rights concern, particularly in communities where it is sustained by entrenched sociocultural norms. The evidence consistently demonstrates that FGM is associated with adverse maternal and reproductive health outcomes, including increased risks of prolonged labour, obstetric trauma, and other childbirth complications.

Importantly, the review found that the relationship between FGM and obstetric fistula is indirect and multifactorial. While FGM may increase susceptibility to obstetric complications through genital scarring and reduced tissue elasticity, obstetric fistula primarily results from prolonged obstructed labour compounded by delayed access to skilled obstetric care and broader socioeconomic and health-system constraints. These findings underscore that preventing obstetric fistula requires interventions that extend beyond eliminating FGM alone.

Achieving sustainable reductions in both FGM and obstetric fistula will require integrated strategies that combine community engagement, behavioural change, strengthened maternal healthcare systems, effective implementation of anti-FGM policies, and equitable access to quality reproductive health services. Such coordinated efforts are essential to improving maternal health outcomes and advancing Nigeria's commitments to the Sustainable Development Goals, particularly those relating to health, gender equality, and the elimination of harmful practices.

Recommendations

Based on the findings of this review, the following recommendations are proposed:

a) Government and Policymakers: Strengthen the enforcement of existing legislation prohibiting female genital mutilation (FGM), expand investment in comprehensive emergency obstetric and newborn care, and integrate FGM prevention into national maternal and reproductive health policies.

b) Healthcare Professionals: Improve the capacity of healthcare providers to identify, counsel, and manage women and girls affected by FGM through routine screening during antenatal care, timely referral, and adherence to evidence-based clinical guidelines.

c) Communities and Civil Society: Intensify culturally sensitive community engagement programmes that address harmful social norms, promote gender equality, and encourage the abandonment of FGM through the active participation of women, men, youth, and community-based organisations.

d) Religious and Traditional Leaders: Collaborate with government and civil society to dispel misconceptions that support FGM, advocate for the protection of women and girls, and promote alternative cultural practices that do not compromise health or human rights.

e) Development Partners: Support evidence-based interventions that strengthen maternal healthcare systems, improve access to skilled birth attendance and emergency obstetric care, and expand community education programmes in high-prevalence areas.

f) Researchers: Conduct prospective and implementation research to better understand the pathways linking FGM and adverse obstetric outcomes, evaluate interventions aimed at eliminating FGM, and generate context-specific evidence to inform policy and practice in Nigeria.

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