

THE EFFECTIVENESS OF RADIO-BASED HEALTH EDUCATION IN ADDRESSING OBSTETRIC FISTULA: INSIGHTS FROM ABUJA MUNICIPAL AREA COUNCIL, NIGERIA

Christiana Nweke AKPUNONU PhD

Baze University Abuja

christiana.akpunonu@bazeuniversity.edu.ng

Abstract

Obstetric fistula remains a major public health challenge in Nigeria, with devastating physical, psychosocial, and social consequences. Despite advancements in surgical repair, continence outcomes remain uneven, and stigma continues to hinder reintegration. Awareness of fistula is alarmingly low, particularly in rural and low-literacy communities, where ignorance and misconceptions persist. The Health Belief Model, Diffusion of Innovations Theory, and Social Ecological Model provided a multi-level framework for interpreting results, highlighting the interplay between individual beliefs, community dynamics, and systemic determinants. This study explored the role of radio-based health education in shaping perceptions, reducing stigma, and influencing maternal health behaviours in Abuja Municipal Area Council. Using a qualitative design, data were collected through focus group discussions and key informant interviews, and analysed thematically. Findings revealed that survivor testimonies, expert interviews, and drama segments broadcast on radio acted as cues to action, shifting beliefs from supernatural to biomedical explanations and motivating care-seeking. However, structural barriers such as poverty, weak health systems, and cultural norms constrained adoption. The study recommends radio as a subset of media for the dissemination of information regarding obstetric fistula dangers especially in the rural areas. The study concludes that radio is a powerful catalyst for awareness, and behaviour change, but sustainable impact requires integration with psychosocial support, health system strengthening, and policy reforms.

Keywords: Radio, Obstetric, Fistula, Health, Education

Introduction

Obstetric fistula remains one of the most neglected maternal health conditions in sub-Saharan Africa, despite being both preventable and treatable. It occurs when prolonged obstructed labour, without timely medical intervention, leads to tissue necrosis between the vagina and bladder or rectum, resulting in continuous leakage of urine or faeces (Oxford Maternal and Perinatal Health Institute, 2024). Globally, between 50,000 and 100,000 new cases are reported annually, with more than two million women currently living with untreated fistula, the majority in Africa and South Asia (UNFPA, 2025). Nigeria carries one of the world's highest burdens, with estimates ranging between 400,000 and 800,000 cases and approximately 13,000 new cases annually (Bello, Morhason-Bello, & Ojengbede, 2020; Fistula Foundation, 2018). The condition is strongly

associated with poverty, early marriage, teenage pregnancy, lack of access to skilled birth attendants, and weak health systems (Bello & Lawal, 2025).

The consequences of obstetric fistula extend far beyond physical injury. Women affected often experience severe social stigma, marital breakdown, and economic deprivation. Nduka et al. (2023) documented poor mental health outcomes, including trauma and suicidal ideation, among Nigerian fistula survivors. Abebe et al. (2024) confirmed that stigma remains a barrier to reintegration even after successful repair, while Engender Health (2025) emphasised the importance of holistic care approaches that integrate psychosocial support. These realities underscore the need for interventions that go beyond surgical repair to address stigma, misconceptions, and socio-cultural barriers.

Although surgical repair is available and often successful, outcomes remain uneven. Kumsa et al. (2023) reported pooled closure rates of 86% across Africa, but continence rates were lower, with up to 13% of women experiencing residual incontinence after repair. Imakando et al. (2025) highlighted the growing complexity of fistula cases, including iatrogenic causes linked to surgical errors. Zeleke et al. (2024) found a pooled success rate of 77.8% in low- and middle-income countries, with determinants such as education, marital status, fistula size, and urethral involvement influencing outcomes. These findings highlight that while surgical treatment is essential, prevention, awareness, and psychosocial support are equally critical.

Despite ongoing awareness campaigns, knowledge of fistula remains low among women of reproductive age in sub-Saharan Africa. Budu et al. (2022) found that only 37.9% of women had ever heard of fistula, with awareness ranging from 12.8% in Gambia to 63.9% in Uganda. In Nigeria, misconceptions remain widespread, with many communities' attributing fistula to curses, spiritual punishment, or poor family planning practices (Opara, Iheanacho, & Petrucka, 2024). These misconceptions delay treatment-seeking and perpetuate stigma. Radio programmes have demonstrated effectiveness in improving knowledge and reducing stigma (Anyanwu, Nzotta, & Orji, 2020), but barriers such as poor timing of broadcasts, technical language, weak reception, and male disinterest limit their impact (Marcus, 2020; Nweke, 2021). Without inclusive strategies that engage men and community leaders, women's ability to act on the information received is constrained.

The aim of this study is to investigate the effectiveness of radio-based health education in shaping community perceptions and behavioural change regarding vesico-vaginal fistula in Abuja Municipal Area Council. Specifically, it assesses how radio programmes influence women's knowledge and perceptions of obstetric fistula. It also examines the role of survivor stories, expert interviews, and drama in reducing stigma, explores behavioural changes in maternal health practices such as antenatal attendance and hospital deliveries, and identifies barriers and enabling factors that affect programme effectiveness. The scope is limited to AMAC, a peri-urban setting where radio remains a dominant medium of communication, focusing on women of reproductive age, men, and community leaders familiar with the *Fistula Care Plus* programme. By employing qualitative methods, using focus group discussions and a key informant interview, the study foregrounds lived experiences and community voices. The findings are intended to provide insights applicable to similar peri-urban and rural contexts in Nigeria and sub-Saharan Africa.

This study is significant for several reasons. First, it contributes to academic scholarship by providing empirical evidence of radio's effectiveness in addressing obstetric fistula, a neglected maternal health condition. Second, it informs policymakers and NGOs about the need for culturally sensitive and participatory communication strategies that engage both women and men. Third, it offers practical recommendations for radio producers and health practitioners on tailoring programmes to audience needs, ensuring inclusivity and impact. By situating the research within both theoretical and empirical contexts, the study underscores the potential of radio as a catalyst for maternal health improvement in Nigeria. However, it also highlights the importance of integrating communication strategies with broader health system strengthening, including improved access to skilled birth attendants, emergency obstetric care, and psychosocial support. Ultimately, the study seeks to advance efforts to eliminate obstetric fistula and improve maternal health outcomes in Nigeria and beyond.

Literature Review

Clinical Outcomes of Obstetric Fistula Repair

Recent studies show that while surgical closure rates are encouraging, continence outcomes remain uneven. Kumsa et al. (2023) reported pooled closure rates of 86% across Africa, but only 76% of women regained continence, with regional disparities between West and Central Africa. Similarly, Imakando et al. (2025) found that surgery-related fistulas are increasingly complex, with iatrogenic causes rising across sub-Saharan Africa. Zeleke et al. (2024) highlighted that socio-demographic factors such as education, marital status, and prior failed repairs significantly influence outcomes. Bello and Lawal (2025) emphasised that community-based strategies are essential to complement surgical interventions, while Nduka et al. (2023) argued that psychosocial support during recovery improves reintegration and continence outcomes. These findings underscore that fistula repair is not merely a medical intervention but one deeply influenced by social context and systemic health factors.

Psychosocial Outcomes and Stigma

The burden of fistula extends beyond physical injury to profound psychosocial consequences. Oluwasolaa and Bello (2020) documented that women often face divorce, isolation, and depression, with stigma persisting even after surgical repair. Nduka et al. (2023) synthesised evidence showing that Nigerian women with fistula experience poor mental health outcomes, including trauma and suicidal ideation. Abebe et al. (2024) confirmed that stigma remains a barrier to reintegration even after successful repair. A study in Cross River State, Nigeria, found that women reported shame, marital breakdown, and social exclusion (Etim et al., 2021). Engender Health (2025) highlighted that holistic care approaches, including counselling and community education, are critical for psychosocial recovery. Collectively, these studies demonstrate that fistula is both a medical and social condition requiring integrated interventions.

Awareness and Determinants of Knowledge

Awareness of fistula remains alarmingly low across sub-Saharan Africa. Budu et al. (2022) found that only 37.9% of women had ever heard of the condition, with rates ranging from 12.8% in Gambia to 63.9% in Uganda. Bello and Lawal (2025) reviewed community-based strategies and confirmed that awareness campaigns remain fragmented. A meta-analysis by Heliyon (2023)

showed variability in awareness across 14 countries, with education, urban residence, and media exposure as strong predictors. UNFPA (2025) reported that over 500,000 women globally live with fistula, yet many remain unaware of treatment options. Opara et al. (2024) emphasised that cultural and religious structures in Nigeria perpetuate misconceptions, attributing fistula to curses or immoral behaviour. These findings highlight the urgent need for culturally sensitive awareness campaigns that replace harmful narratives with biomedical understanding.

Prevention Strategies

Preventing fistula requires addressing its root causes. Tunçalp et al. (2015) emphasised that strengthening health systems is essential, including delaying early marriage, reducing teenage pregnancy, expanding antenatal care, and ensuring timely emergency obstetric interventions. Bello and Lawal (2025) highlighted community-based strategies such as engaging traditional leaders and promoting safe delivery practices. The United Nations (2024) urged intensified efforts to end fistula within a decade, stressing the importance of tackling structural inequalities. Engender Health (2025) documented Nigeria's *Fistula Care Plus* programme, which trained over 1,300 health workers and reached nearly 800,000 individuals through outreach. James and Miteu (2022) analysed social determinants of maternal mortality in Nigeria, showing that poverty and weak health systems sustain fistula prevalence. Adeyinka and Muhajarine (2023) further demonstrated that child survival outcomes are linked to systemic maternal health inequalities. These studies confirm that prevention requires multi-level interventions combining health system strengthening, education, and policy reforms.

Communication Approaches and the Role of Radio

Mass media, particularly radio, has proven effective in shaping maternal health behaviours. Aboagye et al. (2022) found that exposure to radio programmes increased antenatal attendance and hospital deliveries across Africa. Ojeme (2021) evaluated Nigeria's *Fistula Care Plus* radio programme and confirmed its effectiveness in reducing stigma. Anyanwu et al. (2020) showed that Radio Nigeria's *Health Watch* programme improved maternal and child care practices among rural mothers. Carlos et al. (2025) demonstrated that health education in Adamawa State improved maternal outcomes, particularly in rural communities. Nweke (2021) highlighted barriers such as poor timing and technical language, while Marcus (2020) noted male disinterest as a limiting factor. Mushi et al. (2025) reported similar findings in Tanzania, where participatory community radio mobilised women but struggled with reception and gendered barriers. Collectively, these studies confirm radio's potential as a catalyst for maternal health improvement, but also its limitations when structural barriers remain unaddressed.

Theoretical Framework

This study is anchored on three complementary frameworks: the Health Belief Model (HBM), the Diffusion of Innovations Theory (DOI), and the Social Ecological Model (SEM). Together, they provide a multi-level lens for understanding how radio-based health education influences awareness, stigma reduction, and behavioural change regarding vesicovaginal fistula (VVF).

Health Belief Model (HBM)

The HBM explains individual-level health behaviours through constructs such as perceived susceptibility, severity, benefits, barriers, cues to action, and self-efficacy. In maternal health

contexts, these constructs have proven predictive of care-seeking behaviours. Makuochi, Orji, and Ajah (2021) demonstrated that HBM constructs strongly predict maternal health behaviours among African women, particularly where cultural beliefs shape decision-making. Iluno et al. (2024) applied HBM to cervical cancer screening in Nigeria, confirming that perceived susceptibility and benefits significantly influence uptake. Opara et al. (2024) highlighted how cultural and religious structures perpetuate misconceptions about maternal health, reinforcing the relevance of HBM in contexts where fistula is attributed to curses or immoral behaviour. Bello and Lawal (2025) argued that community-based strategies must address perceived barriers such as poverty and spousal influence to improve maternal outcomes. James and Miteu (2022) further showed that social determinants intersect with HBM constructs, as women's perceptions of risk are mediated by systemic inequalities. Collectively, these studies confirm that HBM is suitable for explaining how radio messages reshape individual beliefs about fistula from supernatural punishment to biomedical causation.

Diffusion of Innovations Theory (DOI)

DOI explains how new practices spread through social systems via communication channels, opinion leaders, and adoption categories. Ohkubo, Limaye, and Harlan (2015) outlined how DOI informs health communication strategies, showing that innovations such as antenatal attendance diffuse unevenly depending on cultural acceptance and social support. Ben-Enukora, Okorie, and Amodu (2019) applied DOI to African health communication, demonstrating that opinion leaders such as religious figures and community leaders play decisive roles in shaping household health decisions. Aboagye et al. (2022) confirmed that mass media exposure accelerates adoption of maternal health services, consistent with DOI's emphasis on communication channels. Ojeme (2021) evaluated Nigeria's *Fistula Care Plus* programme and found that survivor testimonies and drama segments acted as accelerators of diffusion. Marcus (2020) highlighted barriers such as poor timing and technical language, which slow adoption among laggards. Nweke (2021) emphasised that male disinterest remains a critical barrier, underscoring DOI's insight that adoption depends on social system dynamics. These findings confirm DOI's relevance in explaining how radio programmes diffuse maternal health innovations across Nigerian communities.

Social Ecological Model (SEM)

SEM situates behaviour within multiple levels of influence: individual, interpersonal, community, institutional, and policy. James and Miteu (2022) critically analysed how social determinants of health explain maternal mortality inequalities in Nigeria, showing that poverty, education, and health system weaknesses constrain women's ability to act on health knowledge. Adeyinka and Muhajarine (2023) further disentangled the pathways linking social determinants to child survival, reinforcing the importance of multi-level interventions. Alhaji et al. (2025) documented supply and demand barriers to maternal care uptake in Gombe State, Nigeria, highlighting institutional and policy-level constraints. EngenderHealth (2025) reported that Nigeria's *Fistula Care Plus* programme adopted a holistic SEM approach, training health workers and engaging communities simultaneously. Carlos et al. (2025) demonstrated that health education in Adamawa State improved maternal outcomes, but only when combined with institutional support. UNFPA (2025) stressed that ending fistula requires systemic reforms addressing early marriage, adolescent pregnancy, and weak health systems. Collectively, these studies confirm SEM's suitability for

explaining how structural barriers constrain or enable the effectiveness of radio-based health education.

Empirical Framework

Empirical evidence from Africa supports the relevance of these frameworks. Budu et al. (2022) demonstrated that exposure to mass media significantly increased awareness of fistula, consistent with HBM's emphasis on cues to action. Kumsa et al. (2023) and Zeleke et al. (2024) showed that education and socio-demographic factors influenced surgical outcomes, aligning with DOI's focus on social systems and opinion leaders. Oluwasolaa and Bello (2020) highlighted the role of stigma and psychosocial barriers, reinforcing HBM's concept of perceived barriers.

In Nigeria, programmes such as *Fistula Care Plus* illustrate how survivor stories and expert interviews function as both cues to action and innovations diffused through communities. Marcus (2020) and Nweke (2021) identified barriers such as poor timing and technical language, which limit diffusion and reduce self-efficacy. These findings confirm that theoretical models must be contextualised within empirical realities, where structural barriers and socio-cultural norms mediate the effectiveness of communication strategies.

Methodology

This study adopted a qualitative research design to explore perceptions, stigma, and behavioural change related to vesicovaginal fistula (VVF) following exposure to radio-based health education. The intervention was delivered through Radio Nigeria, Abuja, a government-owned station, using the programme titled *Fistula Care Plus*, produced by Tope Ojeme and funded by USAID. The programme is a 30-minute weekly magazine show aired on Wednesday at 5pm featuring expert interviews, survivor testimonies, radio drama, and jingles. Broadcasts were conducted in English, Pidgin English, and occasionally in Yoruba, Igbo, and Hausa to ensure inclusivity and reach across diverse audiences. The design enables in-depth understanding of lived experiences and community narratives that cannot be captured through quantitative surveys alone. The research was conducted in Abuja Municipal Area Council (AMAC), a peri-urban setting where radio remains a dominant medium of communication; while AMAC provides valuable insights, the findings are not intended to be generalized to all Nigerian contexts but rather to highlight dynamics relevant to similar peri-urban and rural communities.

The study population comprised women of reproductive age, men, and community leaders familiar with the *Fistula Care Plus* programme, selected through purposive sampling to ensure information-rich cases. Two focus group discussions (FGDs) were conducted with women (8 participants each), one FGD with men and community leaders (8 participants), and one key informant interview with the programme producer. Although purposive sampling ensured relevance, the small sample size and exclusion of health workers, policymakers, and fistula survivors limit representativeness, suggesting that future studies should expand to include diverse stakeholders.

Data collection involved FGDs and the key informant interview, conducted in English and Pidgin English to enhance inclusivity, though the absence of indigenous languages may have excluded fewer literate participants. Audio recordings and field notes were used, with informed consent

obtained from all participants, and facilitators emphasized confidentiality to reduce social desirability bias. Data were analysed thematically following Braun and Clarke’s six-step framework, with codes developed inductively around domains such as knowledge change, stigma reduction, behavioural shifts, and barriers. To enhance credibility, two researchers conducted independent coding and later reached consensus through discussion, although no formal inter-coder reliability statistics were calculated.

For anonymity and traceability, participants were assigned codes: W1–W16 for women in FGDs, M1–M8 for men and community leaders and KI1 for the key informant interview; these provide insider perspectives on programme design, implementation challenges, and audience impact, which were triangulated with participant FGDs to enrich analysis. Ethical approval was obtained from the relevant institutional review board, and participants were assured of voluntary participation, anonymity, and the right to withdraw at any time. Reflexivity was maintained through researcher journals to acknowledge status, and vulnerable participants were safeguarded by ensuring sensitive topics were handled with empathy and confidentiality. Methodological rigor was strengthened through triangulation across participant groups, thick description of AMAC’s socio-cultural environment, audit trails documenting coding and analysis decisions, and continuous reflexivity to minimize researcher bias.

Results

Participant Characteristics

A total of 24 participants were involved: two FGDs with women of reproductive age ($n = 16$), one FGD with men and community leaders ($n = 8$), and one key informant interview with the programme producer. Ages ranged from 16 to 55 years, with mixed educational backgrounds and socio-economic statuses.

Table 1. Participant Characteristics

Group	Number	Age Range	Gender
Women (FGD 1)	8	16–35	Female
Women (FGD 2)	8	16–38	Female
Men/Community Leaders	8	30–55	Male
Key Informant Interview	1	40	Male

Theme 1: Knowledge Change

Radio programmes helped communities better understand obstetric fistula, shifting beliefs away from supernatural causes toward biomedical explanations. Survivor testimonies and expert interviews provided powerful motivation for action. One woman explained, *“Before, I thought fistula was punishment from God. But when I heard the woman on the radio say it happened because she laboured for two days without help, I realised it is a health problem, not a curse”* (W3, FGD1). Another participant added, *“The doctor explained that fistula comes from labour*

problems. *That made me believe it is not witchcraft*” (W10, FGD2). A male participant also reflected, *“I never knew fistula could be treated until I heard the nurse on the programme”* (M4, FGD3). Similarly, a woman noted, *“The drama helped me understand that fistula is caused by obstructed labour, not bad luck”* (W12, FGD2). The producer confirmed this design strategy, stating, *“We use a mix of expert interviews, survivor stories, radio drama, and jingles because not everyone learns the same way. This ensures the messages aren’t just heard, they’re felt, understood, and acted upon”* (KI1).

Theme 2: Stigma Reduction

Exposure to survivor voices reduced stigma and encouraged empathy, with men and leaders acknowledging that the programme challenged harmful cultural narratives. A male participant observed, *“We used to think women with fistula were cursed. But now I understand it is because of labour problems”* (M2, FGD3). Women also described how hearing testimonies in familiar languages fostered inclusion, as one explained, *“Hearing women speak in Pidgin made me realise they are just like us, not different”* (W7, FGD1). Another woman shared, *“The programme made me feel less ashamed because I heard others share the same experience”* (W14, FGD2). Community leaders echoed this shift, noting, *“Community leaders now talk about supporting women instead of rejecting them”* (M6, FGD3). The producer reinforced this impact, explaining, *“For many women, hearing survivor stories has been a turning point. They’ve sought treatment after realizing fistula isn’t something they have to live with forever”* (KI1).

Theme 3: Behavioural Shifts

Participants reported increased willingness to attend antenatal care and preference for hospital deliveries, with survivor testimonies motivating collective action. One woman recounted, *“After listening to the programme, I told my sister not to deliver at home. I said, ‘Go to the hospital’”* (W5, FGD1). A community leader emphasized the importance of household decisions, stating, *“If a husband refuses to take his wife to the hospital, she can suffer. The programme made me understand that our decisions matter”* (M3, FGD3). Another woman explained, *“I encouraged my neighbour to go for antenatal care after hearing the survivor’s story”* (W11, FGD2). Religious leaders also integrated messages into sermons, as one male participant noted, *“Religious leaders now include messages about safe delivery in sermons”* (M7, FGD3). The producer confirmed this cultural shift, highlighting, *“One of the most heart-warming feedback we’ve received is from men who now encourage their wives to seek prenatal care and consider giving birth in hospitals”* (KI1).

Theme 4: Barriers to Effectiveness

Despite successes, barriers were consistently identified, including poor timing, technical language, weak reception, poverty, and spousal influence. A male participant explained, *“The timing is not good... I miss many episodes because of that”* (M5, FGD3). Women also highlighted language barriers, with one noting, *“Sometimes the language is too technical... I prefer when they use simple words or Pidgin English”* (W9, FGD2). Community leaders emphasized structural constraints, stating, *“Even if we know the hospital is better, some women cannot afford transport”* (M1, FGD3). Another woman described gendered barriers, *“My husband decides if I can go to the hospital, so sometimes I cannot act on what I hear”* (W13, FGD2). The producer acknowledged

these challenges, explaining, *“In many communities, words like ‘vagina’ are seen as taboo, which makes it difficult to have open conversations. Male disinterest is another challenge, since many men still view maternal health as a women’s issue”* (K11).

Findings

The study revealed that radio-based health education significantly influenced knowledge, perceptions, and behaviours related to vesicovaginal fistula (VVF) in Abuja Municipal Area Council. Women’s awareness improved significantly after listening to the *Fistula Care Plus* programme, with many shifting from beliefs that fistula was a curse or divine punishment to recognising it as a medical condition caused by prolonged obstructed labour. Survivor testimonies broadcast on radio were especially powerful, offering relatable narratives that corrected misconceptions and provided hope. One participant explained that hearing a survivor describe her prolonged labour helped her realise fistula was a health problem rather than a spiritual punishment. Expert contributions from medical professionals deepened understanding of prevention and treatment, while drama segments simplified complex medical information, making it accessible to those with limited formal education.

Exposure to survivor voices also contributed to stigma reduction. Women reported feeling less isolated after hearing others share similar experiences, while men and community leaders acknowledged that the programme challenged harmful cultural narratives. Male participants noted that they had previously considered women with fistula careless or cursed, but now understood the condition as a consequence of obstructed labour. Survivor stories delivered in familiar languages were particularly effective in bridging cultural gaps, encouraging empathy, and reducing discrimination.

Behavioural changes were evident in maternal health practices. Women expressed greater willingness to attend antenatal care and showed preference for hospital deliveries over home births. Several participants reported encouraging relatives and neighbours to seek medical care during pregnancy, demonstrating how survivor testimonies motivated collective action. Men and community leaders also reported shifts in perception, recognising the importance of household decisions in maternal health. Religious leaders described weaving programme messages into sermons, particularly around delaying early marriage, underscoring the importance of inclusive communication strategies that target not only women but also household and community decision-makers.

Despite these successes, barriers were consistently identified. Participants noted that poor timing of broadcasts limited access, while technical language reduced comprehension among less literate listeners. Men and leaders reinforced these concerns, pointing to language diversity and persistent stigma as obstacles. Structural challenges such as poverty, distance to health facilities, and spousal influence further constrained women’s ability to act on the knowledge gained. These findings confirm that while radio can be a powerful catalyst for awareness and behavioural change, its effectiveness depends on contextual adaptation, inclusive communication, and integration with broader health system support.

Summary of Findings

Taken together, the qualitative findings show that radio-based health education significantly influenced women's knowledge and perceptions of fistula, fostered behavioural change in maternal health practices, and highlighted both barriers and enabling factors in programme engagement. Survivor stories and expert interviews were most effective in reshaping perceptions, while radio drama simplified complex information. Behavioural changes were evident in increased antenatal attendance and preference for hospital deliveries, though constrained by socio-economic and cultural factors. Barriers such as poor timing, language limitations, and male disinterest reduced engagement, while inclusive strategies involving men and leaders enhanced programme effectiveness.

Within the Health Belief Model, these findings illustrate how cues to action and perceived benefits can motivate women, while perceived barriers such as cost and spousal influence limit action. Within Diffusion of Innovations Theory, they demonstrate how innovations in maternal health practices spread unevenly, depending on social support and enabling environments. Within the Social Ecological Model, they highlight how systemic and structural factors such as poverty and weak health systems mediate the effectiveness of communication strategies.

Discussion

The findings of this study demonstrate that radio-based health education can significantly reshape community perceptions of vesicovaginal fistula (VVF) and influence maternal health behaviours in Abuja Municipal Area Council. Survivor stories, expert interviews, and drama segments acted as *cues to action* within the Health Belief Model (HBM), motivating women to reconsider their susceptibility to fistula and the severity of its consequences. Women who previously attributed fistula to supernatural causes reported a shift towards biomedical explanations, illustrating how radio can transform fatalistic beliefs into actionable health knowledge. These results align with Makuochi, Orji, and Ajah (2021), who found that HBM constructs strongly predict maternal health behaviours among African women, and Iluno et al. (2024), who confirmed that perceived susceptibility and benefits significantly influence preventive health uptake in Nigeria.

At the community level, the Diffusion of Innovations Theory (DOI) helps explain how new maternal health practices spread unevenly. Innovators and early adopters embraced antenatal care and hospital deliveries, while others remained constrained by socio-economic barriers such as poverty, distance to health facilities, and spousal influence. This uneven diffusion reflects Rogers' adoption categories and is consistent with findings from Ben-Enukora, Okorie, and Amodu (2019), who emphasised the role of opinion leaders in shaping household health decisions. In this study, religious leaders incorporating fistula messages into sermons exemplify how opinion leaders accelerate diffusion, while male disinterest highlights the need for inclusive strategies that target men as key decision-makers. Aboagye et al. (2022) similarly demonstrated that mass media exposure accelerates maternal health service utilisation across sub-Saharan Africa, confirming DOI's relevance in explaining how radio programmes diffuse innovations.

The Social Ecological Model (SEM) situates these findings within broader structural contexts. While radio improved knowledge and reduced stigma, structural barriers such as poverty, weak health systems, and cultural norms constrained women's ability to act. James and Miteu (2022) highlighted how social determinants of health perpetuate maternal mortality inequalities in

Nigeria, while Adeyinka and Muhajarine (2023) showed that child survival outcomes are shaped by multi-level factors beyond individual awareness. Alhaji et al. (2025) documented supply and demand barriers to maternal care uptake in Gombe State, underscoring that communication strategies must be integrated with systemic reforms to achieve sustained impact. EngenderHealth (2025) confirmed that Nigeria's *Fistula Care Plus* programme adopted a holistic SEM approach, combining health worker training with community outreach. These findings reinforce that radio alone cannot overcome structural barriers, but when combined with institutional support and policy reforms, it can catalyse sustainable behavioural change.

The psychosocial dimension of fistula also emerged strongly in this study. Women reported shame, marital breakdown, and social exclusion, consistent with Oluwasolaa and Bello (2020) and Nduka et al. (2023), who documented poor mental health outcomes including trauma and suicidal ideation among Nigerian fistula survivors. Abebe et al. (2024) confirmed that stigma remains a barrier to reintegration even after successful repair. These findings highlight the importance of integrating psychosocial support into fistula programmes, ensuring that healing goes beyond surgical closure to encompass dignity restoration and community reintegration.

Awareness levels revealed by this study remain low, echoing Budu et al. (2022), who found that only 37.9% of women across 14 African countries had ever heard of fistula. Misconceptions attributing fistula to curses or immoral behaviour persist, as noted by Opara et al. (2024). This underscores the need for culturally sensitive awareness campaigns that challenge harmful narratives. Radio, with its accessibility and ability to broadcast in local languages, is well positioned to fill this gap. However, barriers such as poor timing, technical language, and male disinterest (Marcus, 2020; Nweke, 2021) limit effectiveness. Mushi et al. (2025) reported similar challenges in Tanzania, where participatory community radio mobilised women but struggled with reception and gendered barriers. These parallels confirm that while radio is a powerful tool, its impact is mediated by contextual factors.

Finally, prevention strategies must be understood within the “three delays” framework (Oxford Maternal and Perinatal Health Institute, 2024). Delays in deciding to seek care, reaching facilities, and receiving adequate care remain critical contributors to fistula incidence. Tunçalp et al. (2015) emphasised that prevention requires avoiding early marriage, reducing teenage pregnancy, and ensuring timely emergency obstetric interventions. Bello and Lawal (2025) highlighted community-based strategies such as engaging traditional leaders and promoting safe delivery practices. UNFPA (2025) stressed that ending fistula within a decade requires systemic reforms addressing early marriage, adolescent pregnancy, and weak health systems. This study confirms that radio can catalyse awareness and behavioural change, but prevention ultimately depends on structural reforms and health system strengthening.

Conclusion and Recommendations

This study shows that radio-based health education can improve awareness, reduce stigma, and influence maternal health behaviours related to obstetric fistula in Nigeria. Survivor testimonies, expert interviews, and drama segments proved effective in reshaping perceptions, yet structural barriers such as poverty, weak health systems, and cultural norms continue to limit impact. The integration of the Health Belief Model, Diffusion of Innovations Theory, and Social Ecological

Model highlights that behaviour change requires action at individual, community, and systemic levels.

Recommendations

To enhance maternal health outcomes and strengthen fistula prevention and treatment, several recommendations emerge from this study. First, health systems should be reinforced to address the “three delays” in seeking, reaching, and receiving care, thereby ensuring timely access to obstetric services. Second, culturally sensitive awareness campaigns need to be expanded, particularly in rural and low-literacy communities, to improve knowledge and reduce stigma. Third, psychosocial support should be integrated into fistula programmes to facilitate the reintegration of survivors into their families and communities. Fourth, men, religious leaders, and community influencers must be actively engaged to accelerate the diffusion of health practices and foster supportive environments for women’s health decisions. Finally, radio communication should be combined with broader institutional reforms and policy action to achieve sustainable change in maternal health and fistula prevention.

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