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Pathways Towards Prevention—Stakeholders' Perspective in Eliminating Obstetric Fistula in Seharti District, Tigray, Ethiopia

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Abstract

Introduction and Hypothesis Multifaceted interventions, within Project Zero, are aimed at preventing obstetric fistula through community engagement, capacity building, patient identification and treatment, and strengthening maternal health care services. Although these approaches are promising, effectiveness in practice depends on underexplored contextual factors. Understanding stakeholders' perspectives is essential for identifying factors that influence the effectiveness of interventions. The goal is to explore contextual factors affecting the implementation of a multifaceted intervention with the purpose of eliminating obstetric fistula from the perspectives of key stakeholders.

Methods A qualitative study was conducted using semi-structured individual interviews ($n=27$) and focus group discussions ($n=6$) with purposively selected stakeholders, including health care personnel, midwives, health extension workers, community leaders and beneficiaries, and the data were analysed using reflexive thematic analysis following Braun and Clarke's six-phase framework.

Results Stakeholders identified key contextual factors influencing intervention effectiveness in 1 overarching theme, 4 themes and 11 sub-themes, such as raising awareness and promoting health-seeking behaviour, capacity building and mentorship of health care personnel, midwives' leadership in monitoring and managing maternal care, accessibility of services, including free transportation and referrals, and multisectoral collaboration and community engagement. Effective implementation relied on combining community education, health-system strengthening, and supportive referral pathways.

Conclusions Preventing obstetric fistula requires holistic and integrated interventions that address both social determinants and health system limitations. Sustainable impact depends on community-informed approaches integrated into existing the maternal health system, strengthened workforce capacity, midwifery leadership and improved access to maternal health services.

Keywords Community engagement · Ethiopia · Health system · Obstetric fistula · Maternal health · Midwife

Introduction

Obstetric fistula remains a serious but preventable maternal health condition that reflects persistent inequities in access to quality obstetric care [1]. The World Health Organization defines obstetric fistula as an abnormal opening between a woman's genital tract and the urinary system or rectum. Although the condition has been largely eliminated in high-income countries owing to timely access to skilled birth attendance and emergency obstetric services, it continues to affect women in low-resource settings, particularly in sub-Saharan Africa [2, 3]. The primary cause of obstetric fistula is prolonged and obstructed labour, which remains a major contributor to maternal morbidity and mortality [4]. When

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access to timely surgical intervention is unavailable, sustained pressure from the foetal head compromises blood flow to pelvic tissues, leading to ischaemic necrosis and fistula formation. Risk factors such as early marriage, early childbirth, malnutrition, poverty and limited education increase susceptibility, especially among adolescent girls in rural areas [5, 6]. The consequences of obstetric fistula extend far beyond physical injury and profoundly affect women's social and psychological well-being. Women living with fistula often experience chronic incontinence, stigma, social isolation, marital breakdown and loss of economic productivity. Globally, an estimated 50,000–100,000 new cases occur annually, and more than two million women live with untreated fistula, primarily in sub-Saharan Africa and South Asia [3]. In Ethiopia, over 31,000 women are estimated to be living with untreated obstetric fistula, highlighting a substantial unmet need for prevention and care [7]. The persistence of obstetric fistula reflects systemic weaknesses within health systems and broader social determinants of health. Limited access to family planning, shortages of skilled birth attendants, inadequate referral systems and financial barriers prevent timely care, whereas gender inequality and harmful traditional practices further exacerbate risk. Despite the relatively low cost of treatment, many women are unable to access services owing to workforce shortages and limited awareness [5, 8].

In Ethiopia, national strategies have prioritised the elimination of obstetric fistula, yet implementation gaps remain. Although maternal health services have improved, rural and conflict-affected areas still lack timely obstetric care. Initiatives such as Project Zero address these gaps through community-based awareness, identification, treatment and integrated prevention efforts. However, limited evidence exists on how such multifaceted interventions are experienced and implemented by key stakeholders [9].

Understanding stakeholders' perspectives is essential for identifying factors that influence the effectiveness of interventions. As part of a larger health systems project, we conducted a stakeholder analysis to explore contextual factors affecting the implementation of a multifaceted intervention aimed at eliminating obstetric fistula from the perspectives of key stakeholders.

Materials and Methods

Study Design

A descriptive qualitative study design, underpinned by an interpretivist epidemiological stance, was used to explore stakeholders' perspectives on a multifaceted intervention within Project Zero. This design was selected as it allows for an in-depth understanding of participants' experiences and meanings that they attribute to complex, context-specific phenomena such as obstetric fistula prevention.

Setting

The study was conducted in Seharti district, Southeastern Tigray region, Northern Ethiopia, with a population of 92,079, including 22,098 women of reproductive age (15–49 years) in 12 kebeles (kebeles are villages in the district). The district is served by 17 public health facilities, of which 12 are health posts, 4 are health centres and 1 is a comprehensive emergency obstetric and newborn care facility. Since the 2020 war, health service have been disrupted. They continue to face low institutional birth rates 47% [10] and high maternal mortality (835 deaths per 100,000 live births), reflecting ongoing barriers to skilled birth attendance and timely obstetric care [11].

Context

The study was implemented within the context of Project Zero, a multifaceted intervention designed to eliminate obstetric fistula at the district level by community- and facility-based awareness raising, maternal health-system strengthening and obstetric fistula case identification and treatment. Initially, the project was piloted under the name "Woreda by Woreda", where woreda denotes the local administrative term for a district. At the time of the study, the project was active in five woredas, delivering the main activities. Awareness-raising activities were conducted in markets, schools, community gatherings and at meetings with religious and community leaders, using loudspeaker messages and printed materials in the local language. House-to-house visits were carried out by trained Health Extension Workers (HEWs) and Village Health Leaders (VHLs) to raise awareness and identify and refer women with obstetric fistula. In parallel, midwife-led mentorship addresses skill and knowledge gaps in the maternal health care system. Health facilities are provided with essential obstetric equipment and supplies to improve their capacity to manage labour, detect complications and ensure timely referral. The study explored components influencing this multifaceted intervention through interviews with stakeholders involved directly or indirectly in Project Zero.

Study Participants

Stakeholders were purposively selected based on their involvement and roles in implementing obstetric fistula prevention efforts, ensuring representation at the individual, organisational and community levels. Eligible participants included stakeholders with direct or indirect engagement

in obstetric fistula prevention interventions, as well as those with relevant insights, experience and decision-making roles. Individuals without relevant experience were excluded. Participants were categorised as internal or external stakeholders. External stakeholders included the maternal and child health coordinator, primary health care unit directors, HEWs, midwives, women from the VHLs, women in the reproductive age group and women treated for obstetric fistula. Internal stakeholders comprised a specialist and hospital senior managers, organisational leaders and Project Zero implementation staff.

Participants were identified through stakeholders' mapping and recruited using a purposive sampling technique. Initial contact occurred with institutional stakeholders, whereas community participants were engaged with help from HEWs. Sample size was guided by information power and data collection until sufficient depth and variation across stakeholder perspectives were achieved [12]

A total of 33 stakeholders participated in the study, comprising 27 focus group participants and 6 interview respondents, aged 28 to 58 years. Most had tertiary education and over 5 years of experience in maternal and reproductive health. Participants included men and women representing community members, women of reproductive age, health care providers, administrators and non-governmental organisation staff across various health-system levels (Table 1).

Data Collection

Data were collected using semi-structured interviews, 4 focus group discussions (FGD) and 6 in-depth interviews (IDIs), conducted between November 2025 and January 2026. The FGIs were facilitated by the first author (NN) and a trained research assistant, and included 5–8 stakeholders to encourage interactive discussion. The interview guide was developed by the first and second authors (NN and NN) in line with the study aim. The guide included opening procedures, introductory questions, and key questions on the strengths, weaknesses, opportunities, challenges, sustainability of improvement and strategies for obstetric fistula prevention of Project Zero. It was tested on the previous project woredas. Interviews lasted an average of 77 min, allowing sufficient time for in-depth discussion. Sessions concluded with participant clarification and a summary by the moderator.

All interviews were audio recorded with consent, and recordings were securely stored on password-protected, encrypted devices accessible only to the research team. Transcripts were anonymised by removing personal identifiers and replacing them with codes to ensure confidentiality. Interviews were conducted face to face in Tigrinya, Amharic and English, depending on participant preference, in prearranged private rooms to ensure confidentiality. Audio recordings were transcribed verbatim shortly after data collection by two experienced university lecturers from Mekele University (Tigrinya) and Metu University (Amharic), both skilled in qualitative research and translation. All transcripts were checked for accuracy.

Analysis

The reflexive thematic analysis used helps in recognising that analysis is shaped by the researchers' interpretations and engagement with the data [13]. The research team were involved in reflecting on how their backgrounds, professional experiences, and assumptions could influence coding and theme development. Regular discussions supported reflexive thinking, allowing different perspectives and

Table 1 Gender, age and role of the 33 participants in the study

Participant group	*n*	Gender	Age range (years)	Role/profession
Women of reproductive age (community members) (FGI)	6	All female	22–35	Community women
PHCU directors and MCH coordinators (FGI)	8	2 female, 6 male	Not specified	5 midwives, 2 public health officers, 1 nurse
Project Zero team (FGI)	5	1 female, 4 male	29–45	3 midwives, 1 nurse, 1 public health officer; team leader, mentor, prevention, M&E officers
HDAs and HEWs (FGI)	8	All female	30–40	Health Development Army volunteers and HEWs
Head of MCH, district level (IDI)	1	Male	Early 40s	District maternal and child health head
Medical director (IDI)	1	Male	58	Urogynaecologist, fistula surgeon
NGO partner & resource mobilisation (IDI)	1	Male	~45	NGO management
Programme manager, NGO (IDI)	1	Male	~55	Plan and programme manager
Acting CEO, NGO (IDI)	1	Male	40s	Urogynaecologist, fistula surgeon
Obstetric fistula patient (IDI)	1	Female	30	Women in the community
Total	33		28–58	Multiple stakeholder categories

CEO Chief Executive Office, *FGI* Focused Group Interview, *HDAs* Health Development Armies, *HEWs* Health Extension Workers, *IDI* in-depth interview, *MCH* maternal child health care, *NGO* non-governmental organisation, *PHCU* Primary Health Care Unit

deeper interpretation rather than seeking a single "correct" coding framework. This ongoing reflexivity ensured that the analysis remained grounded in participants' accounts while acknowledging the researchers' role in constructing meaning, following Braun and Clarke's six-phase framework [13]. The process involved:

1. Familiarisation with the data
2. Generation of initial codes
3. Searching for themes
4. Reviewing themes
5. Defining and naming themes
6. Producing the report

Interviews in Tigrinya (four) and Amharic (two) were transcribed verbatim and translated into English, whereas English interviews were transcribed directly. All transcripts were checked for accuracy. The research team read and reread the transcripts to gain an in-depth understanding of participants' accounts and contextual nuances. Initial coding was conducted manually by three authors who systematically identified relevant meaning units and ensured consistency and analytical rigour. Similarly, codes were grouped into preliminary themes, which were then defined and refined into one overarching theme, themes and subthemes. Finally, the themes were discussed collectively among all authors to ensure coherence, contextual relevance, and alignment with the study aim (Table 2).

Ethical Statement

The study followed the ethical principles of the Declaration of Helsinki [12]. Participants were informed about the purpose of the study, the voluntary nature of participation, and their right to withdraw at any time without consequences. Oral informed consent was obtained from all participants before the interviews, and the consent was audio recorded.

Results

The analysis resulted in 1 overarching theme, 4 main themes and 11 subthemes, reflecting stakeholders' perspectives on the implementation of multifaceted intervention in obstetric fistula prevention. The overarching theme "Ensuring acceptance, access and quality of care at every step of the maternal health journey, for every woman". This theme captures a mutually reinforcing system in which community engagement reduces stigma, builds trust and timely care-seeking; midwife-led mentorship and workforce development elevate service readiness and decision making; and standardised referral pathways plus logistical supports (transport, equipment, supplies) close the distance between households and functioning services. These components operate concurrently rather than sequentially, with reinforcing feedback

Table 2 Analysis process with overarching theme, themes and subthemes

Overarching theme	Themes	Subthemes	Representative quotations
Ensuring acceptance, access and quality of care at every step of the maternal health journey, for every woman	Community engagement	Raising awareness Spreading the word Promoting health-seeking behaviour	"At first, when they talked about the issue, the community did not take them seriously. But after Project Zero started, community leaders and religious leaders became aware and involved". FGI, interview 1
	Strengthening maternal health care services	Capacity building House-to-house Multisectoral collaboration	"Through the trainings provided, health workers not only gained knowledge about fistula but also strengthened their skills in preventing obstetric complications and assisting during delivery". FGI, interview 4
	Development of a midwifery workforce	Recognition of midwives' leadership role Midwife mentorship and quality of care Workforce challenges	"Another important support was mentorship, which helped a lot. For example, in MCH, teaching us how to use the partograph from the beginning to delivery was very helpful, especially for new staff …". FGI, interview 4
	Treatment access and support	Logistical factors Visible impact	"Project Zero focused on visible and practical work. By identifying a woman with fistula, arranging her transportation, providing full treatment, and supporting her return to the community, people could see real results. This visible impact built trust within the community. People believe what they see more than what they hear". FGI, interview 4

FGI Focused Group Interview, *MCH* maternal child health care

loops: outreach and home visits trigger referrals, quality care leads to visible recovery and treated women's advocacy promotes health-seeking behaviour. Sustained governance and multisectoral collaboration from village leaders to district health offices and NGO partners enable and institutionalise these links, while contextual constraints such as security, fuel and roads can disrupt them—highlighting the need for local ownership and resilient referral/transport arrangements. This dynamic system is how stakeholders described the programme, ensuring acceptance (trust, reduced stigma), access (identification, referral and treatment) and quality (skilled, standardised intrapartum and timely referral care) at every step of the maternal health journey.

Community Engagement

Community engagement was identified as a critical factor influencing the effectiveness of multifaceted interventions in obstetric fistula prevention. Stakeholders noted that involving communities through awareness campaigns, education and direct participation was an essential intervention in Project Zero. Participants reported that awareness efforts focused on reproductive health care service utilisation including family planning, antenatal care and facility-based deliveries, alongside the prevention of harmful traditional practices such as early marriage and female genital mutilation. These activities address determinants of obstetric fistula and other birth injuries while reducing stigma, isolation and psychological harm. Schools, markets and community gatherings were identified by the participants as important platforms for prevention, as educating young women about reproductive health was considered an effective strategy for fostering long-term behavioural change.

As awareness increased, women treated for obstetric fistula became important advocates in their communities, expressing gratitude for their transformative experience. They encouraged others to seek care, breaking the silence and reducing stigma. By sharing their stories in markets, churches and community gatherings they reinforced local knowledge about fistula and its treatability. Stakeholders noted that collective community support effectively facilitated health-seeking behaviour.

> "They said that when they were first referred, they did not believe this kind of treatment existed. Now they say they feel like they are reborn. They also promised that if they see other women with the same problem in the community, they will inform us." FGI, interview 1.

Stakeholders emphasised that increasing knowledge alone was insufficient; awareness and engagement needed to translate into action. Project Zero promotes health-seeking behaviour through continuous community engagement. Personalised discussions during home visits strengthened women's understanding of maternal health risks and increased their confidence in attending antenatal care and giving birth at health facilities. As per the participants, the awareness of family planning also improved as communities recognised the resumption of services post-war.

> "Communities now understand that health facilities have resumed service delivery following the disruption caused by the war, which has encouraged greater use of family planning services". IDI, interview 2.

Although practical barriers such as household responsibilities, seasonal demands and family decision making sometimes delayed treatment, it was assumed that women are willing to seek care when social support is available, highlighting the importance of engaging families alongside individuals.

Strengthening Maternal Health Care Services

Capacity building was central to enhancing maternal health care services. Health personnel gained updated knowledge and practical skills in fistula prevention, obstetric care and case identification, supported by mentorship, which improves the quality of care. Stakeholders reported that training and technical support addressed skill gaps, empowering staff to identify and refer cases of obstetric fistula and uterine prolapse. Joint training sessions fostered trust, strengthened communication between health institutions and communities, and facilitated experience sharing for future interventions.

> "Through the trainings provided, health workers not only gained knowledge about fistula but also strengthened their skills in preventing obstetric complications and assisting during delivery". FGI, interview 4.

Continuity of care and sustainability were linked to maintaining standards at the woreda level, ongoing professional development, formal mentorship and standardised reporting systems.

House-to-house visits complemented public awareness by allowing direct, personalised interaction with women in their homes. Health personnel described that home visits facilitated tailored communication and reduced the need for travel to access information.

> "… House-to-house outreach approach, which enabled the project to reach nearly every household. This is something that most other projects do not attempt, and even we, as a government body, are often unable to achieve this level of coverage". IDI, interview 2.

Health Extension Workers and VHLs reached nearly every household for the identification of women with fistula

or prolapse and facilitated referrals for treatment. Repeated home visits were necessary to build trust and encourage disclosure, particularly among women who believed that they were cursed or rarely left their homes. Although time consuming and labour intensive, these visits were essential for both prevention and case detection.

Project Zero addressed critical gaps in a fragmented maternal health care system by reducing service silos and promoting a collaborative approach. Standardised communication and referral pathways linking households, village health leaders, HEWs, woreda health services and higher-level facilities created a continuous care pathway from identification to treatment and follow-up.

> "Whenever a health worker suspected a fistula/prolapse case, they communicated promptly, screened the client, and worked with us to facilitate referral and treatment". FGI, interview 4.

Multisectoral collaboration was consistently highlighted as essential for Project Zero's effectiveness and sustainability. Engagement with community and religious leaders and health care personnel facilitated case identification, care-seeking and prevention. Government officials at all levels were noted to be critical for sustaining standards post-handover. Institutionalising the intervention, translating it into policy and decentralising services were identified as essential steps to ensuring long-term impact. Government hospitals, when adequately trained, could manage most cases, whereas model centres served as hubs for scaling up services.

> "It is not about the number of patients that we are getting from this process. Rather than just bringing change, that change needs to be a sustainable one". IDI, interview 3.

Development of the Midwifery Workforce

Strengthening the midwifery workforce was central to improving maternal health outcomes and preventing obstetric fistula. Stakeholders emphasised documenting and sharing impacts, promoting midwives' leadership and investing in pre-service training and quality obstetric education to support replication and sustained engagement.

Midwifery mentorship played a key role in improving service quality. Mentors provided practical guidance on partograph use, standardisation of services and daily clinical decision making. Through hands-on training, midwives strengthened their competence and confidence, particularly when prior training was outdated. Ongoing feedback, outcome monitoring and supporting corrective actions ensured accountability and sustained quality improvement. Unlike routine supervision, embedded mentorship with facility workflows, enhanced infection prevention, adherence to clinical standards and awareness of fistula-related risks.

> "Another important support was mentorship, which helped a lot. For example, in MCH, teaching us how to use the partograph from the beginning to delivery was very helpful, especially for new staff …". FGI, interview 4.

Despite several positive consequences of the project, the stakeholders describe severe challenges related to the midwifery workforce in the district. Low hazard payments and insufficient incentives affected midwives' motivation, retention and professional pride, despite their commitment to community service. Psychological support was limited, particularly in post-war settings, whereas recruitment challenges and staff shortages remained persistent. High workloads and unfilled positions constrained service delivery, demonstrating the need for improved workforce support and retention strategies.

> "Currently, our main challenge is not just turnover but recruitment. We are not able to attract new midwives". IDI, interview 2.

Treatment Access and Support

Logistical factors such as availability of transport, medical equipment and supplies significantly influenced access to care. Health facilities received medical equipment and supplies including solar power installation with its refrigerator, which enhanced service quality. Free transportation facilitated referrals, follow-up and treatment completion. Political instability and security challenges, including fuel shortages and poor road conditions, hindered operational continuity and disrupted outreach, supervision and planning.

> "Project Zero not only contributed to reducing fistula cases but also played a major role in increasing facility-based deliveries. The provision of essential inputs such as solar lighting, delivery couches and essential medications created tangible improvements in service delivery". IDI, interview 2.

Stakeholders emphasised that prevention strategies must produce tangible, observable outcomes. The visible recovery of treated women strengthened community trust and participation. Aligning community awareness, health-system readiness and service delivery ensured that women's expectations were met and that interventions moved beyond theoretical frameworks into practical, sustainable impact.

> "Project Zero focused on visible and practical work. By identifying a woman with fistula, arranging her transportation, providing full treatment, and support-

ing her return to the community, people could see real results. This visible impact built trust within the community. People believe what they see more than what they hear". FGI, interview 4.

Discussion

This study identified four interconnected themes—community engagement, strengthening of maternal health care services, development of the midwifery workforce, and treatment access and support—that together explain how stakeholders perceived the implementation of multifaceted interventions for obstetric fistula prevention. These themes reflect the overarching findings that ensuring acceptance, access and quality of care throughout the maternal health journey requires coordinated, multisectoral interventions addressing both health-system constraints and underlying social determinants. Consistent with global evidence, findings suggest that although national strategies and international campaigns have strengthened policy frameworks, significant barriers remain at the community and service-delivery levels, limiting effective prevention and timely care [2, 8].

The first theme, community engagement, highlighted awareness raising and community participation as central components influencing the implementation of multifaceted interventions for obstetric fistula prevention in woredas in Ethiopia. Several components were identified as critical for intervention effectiveness. Awareness raising in the community emerged as a key factor, particularly for women who had not been reached by previous national or global efforts. Stakeholders emphasised that women in rural areas often lacked knowledge about obstetric fistula and its preventability. Consistent with previous studies [14], it was reported that rural women in Ethiopia were less likely to understand obstetric fistula than their urban counterparts, with access to radio or television associated with greater awareness [14]. It was similarly highlighted that low community awareness contributes significantly to the development of obstetric fistula, especially among women with limited understanding of childbirth complications. Illiteracy and low education levels further restrict the effectiveness of written health messages [13, 14].

These findings demonstrate how awareness has been raised in Project Zero by spreading the word supporting health-seeking behaviour and reducing stigma. through community and religious gatherings, markets and house-to-house visits, effectively reaching women previously unreached and facilitating access to treatment. Women who underwent successful treatment assumed advocacy roles within their communities and they served as educators and motivators, encouraging other women to seek care during labour complications. This form of peer advocacy has been shown to positively influence health-seeking behaviour in other African settings [15]. The second theme, strengthening maternal health care services, highlighted capacity building as essential for improving maternal health care within the woreda. Training, mentorship and technical support strengthened the skills of health care personnel and improved service quality. Evidence from low-resource settings demonstrates that routine obstetric fistula treatment is feasible when capacity-building interventions are implemented, including mentorship and clinical training [15, 16]. Reported that fewer than half of births in low- and middle-income countries are attended by skilled personnel, a challenge especially pronounced in rural areas, where training and support are limited. By improving staff competence, Project Zero contributed to enhanced maternal care and the timely identification and management of complications.

The third theme, development of the midwifery workforce, identified midwives as central actors in the prevention of obstetric fistula. Stakeholders emphasised their role in monitoring labour, using a partograph and initiating timely referral, underscoring the importance of skilled, well-supported maternity care. These findings align with international recommendations advocating investment in midwifery education and employment of educated midwives, workforce retention and continuous professional development as key strategies to reduce maternal morbidity [8, 17].

The fourth theme, treatment access and support, emphasised that improvements in transportation, referral systems, equipment and supplies enabled women to move successfully through the continuum of care. Stakeholders also highlighted that visible treatment outcomes strengthened community trust, reinforcing the community engagement theme by encouraging women to seek care and demonstrating the interconnected nature of the identified themes. These findings illustrate how improvements in access and service readiness reinforce one another rather than functioning as isolated interventions.

The four themes identified in this study can also be interpreted through the Three Delays Model, which provides a useful framework for understanding how the identified components contribute to the prevention of obstetric fistula. Delays in deciding to seek care were closely linked to limited awareness of danger signs, low status of women and cultural norms surrounding childbirth. These findings align with those of prior studies demonstrating that social norms and gender inequality reduce women's autonomy, delaying care seeking during obstetric emergencies [9]. Delays in reaching care remain a critical barrier, particularly in rural and conflict-affected regions, where geographic distance, lack of transportation, poor infrastructure and financial constraints limit access to skilled birth attendance and emergency obstetric services. These barriers are well documented in low-resource and fragile health systems, as seen in parts of Ethiopia [10]. Delays in receiving adequate care within health facilities further compound the risk of prolonged labour and fistula development. Shortages of trained personnel, limited

availability of emergency obstetric services and weak referral systems reduce the capacity to manage complications effectively. Strengthening facility readiness, referral pathways and quality of care is therefore essential to preventing fistula and improving maternal outcomes [3].

Conclusion

The findings indicate that effective obstetric fistula prevention requires multifaceted interventions across community, health-facility and health-system levels. Sustainable prevention relies on informed communities and their engagement, accessible and high-quality maternal health services, midwifery leadership and workforce development, and health system strengthening and integrated support mechanisms, including transportation and referral systems. These interconnected components highlight the importance of multisectoral collaboration and local ownership to sustain initiatives such as Project Zero. Future efforts should prioritise scaling up integrated models, strengthening the midwifery workforce and ensuring sustainable governance and resource allocation to achieve long-term impact. A limitation of this study is that it does not allow the magnitude or causal effect of the intervention.

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Declarations

Ethical Approval Ethical approval for the study was received from the Swedish Ethical Review Authority (Dnr 2025-01754-01) and the Institutional Review Board of Hamlin Fistula Ethiopia (HFE-IRERC AF 05-008/01.0).

Conflicts of Interest None.

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