





BMJ Open Women's views on obstetric fistula risk factors and prevention in north-central Nigeria: an interpretive descriptive study

Lydia Babatunde Bulndi ¹, Deborah Ireson ¹, Esther Adama ¹, Sara Bayes ^{1,2}

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¹The Centre for Evidence-Informed Nursing, Midwifery and Health Care Practice: A JBI Affiliated Group, Edith Cowan University, Joondalup, Perth, Western Australia, Australia
²School of Nursing, Midwifery, and Paramedicine, Australian Catholic University, 8-14 Brunswick Street, Fitzroy, Melbourne, Victoria, Australia

Correspondence to

Lydia Babatunde Bulndi;
lbabatun@our.ecu.edu.au

ABSTRACT

Objective Obstetric fistula, also known as vesicovaginal fistula or rectovaginal fistula, is an abnormal opening between the vagina and rectum caused by prolonged obstructed labour that causes substantial long-term harm to women. It is most prevalent in low resource settings and although preventative measures have been proposed, they have not, to date, taken women's own views into account. The objective of this study was to explore the views of North Nigerian women on obstetric fistula risk factors and prevention.

Design This study was conducted using Interpretive Description methodology, which is a qualitative approach underpinned by Symbolic Interactionism. A semistructured questionnaire was used to explore the views of 15 women living with obstetric fistula about risk factors and prevention of the condition. Data were collected in one-to-one in-depth interviews conducted between December 2020 and May 2021. All interviews were audio-recorded and transcribed verbatim, and a thematic approach to data analysis was employed.

Sampling and setting The setting for this study was a fistula repair centre in north-central Nigeria. The sample was formed of a purposively selected 15 women who had experienced obstetric fistula at a repair Centre in north-central Nigeria.

Results Four core themes emerged from women's views on obstetric fistula risk factors and prevention: (1) Women's autonomy, (2) Economic empowerment, (3) Infrastructure/transportation and (4) Provision of skilled healthcare services.

Conclusion The findings from this study highlight previously unknown women's views on obstetric fistula risk factors and prevention in north-central Nigeria. Analysis of insights from women's voices directly affected by obstetric fistula demonstrated that in their views and experiences, giving women autonomy (decision-making power) to choose where to birth safely, economic empowerment, enhancement of transportation/infrastructure and provision of skilled healthcare services may mitigate obstetric fistula in Nigeria.

BACKGROUND

When a woman births safely at term, generally the woman and her community rejoice. However, this is not the case for women with obstetric fistula. Obstetric fistula, also known

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ Using a qualitative approach meant that participants could raise issues that were salient to them.
- ⇒ Collection of data by a bilingual interviewer enabled participant women to share their views in their own language.
- ⇒ Each participant checked that their transcribed data were an accurate representation of their views.
- ⇒ Only women affected by obstetric fistula, no other stakeholders, were the informants for this study.
- ⇒ Data were collected from only one region in northern Nigeria.

as vesicovaginal fistula (VVF) or rectovaginal fistula, is an abnormal opening between the vagina and rectum caused by prolonged obstructed labour that causes substantial long-term harm to women.^{1 2} Background Prolonged delays experienced by parturient women during labour that results in an obstetric fistula may lead to stillbirth, as well as multiple associated tragedies such as social stigmatisation from incontinence, loss of relationships, loss of livelihood and decreased quality of life resulting in erosion of self-worth and psychological distress.³⁻⁵ Obstetric fistula can be surgically repaired, however recurrent fistula is common in the subsequent pregnancy.^{3 6} Obstetric fistula has several known contributing factors including birthing at home without a skilled birth attendant, delay in accessing intrapartum care, poor availability of emergency obstetric services, early adolescent pregnancy, poverty, and harmful traditional practices such as female genital mutilation, lack of formal education for girls and limited social empowerment for women.⁷⁻⁹

The WHO¹⁰ states that each year, between 50 000 to 100 000 women worldwide are affected by obstetric fistula, with more than 2 000 000 untreated women in Asia and sub-Saharan Africa. Obstetric fistula prevalence in Nigeria is estimated at 3.2 per 100 births and



it is postulated that 13000 new cases occur annually.^{8 11} In developing countries, women have limited decision-making power regarding where to give birth; rather the woman's family, traditional birth attendants (TBAs) and community tend to be her decision makers.^{7 9} In northern Nigeria, lack of decision-making power is related in part to the practice of 'Purdah' which means some married women are not allowed to be seen by another man who is not her husband, which means they are unable to leave the home.^{7 8} Many women also do not have any financial control and lack either the money to pay for health-care utilisation during labour, or the power to use family money.^{7 12 13}

As noted earlier, women who experience obstetric fistula are unlikely to have a well or living child and are often abandoned by their wider family network;⁷⁻⁹ those who are permitted to work are unable to once they develop the condition, and nor can they socialise because of incontinence and its associated odour,^{1 14} resulting in erosion of self-worth and psychological trauma. The Nigerian Federal Ministry of Health¹⁵ published a national strategic framework for the elimination of obstetric fistula in Nigeria from 2019 to 2023, as previous strategies did not make any discernible difference.^{16 17} Nigeria has established a policy to eliminate obstetric fistula, yet obstetric fistula has continued to exist.¹⁸ The current efforts at addressing this devastating complication of childbirth remain fragmented, uncoordinated and weak at the state level and community levels.^{15 15}

The Nigerian Federal Ministry of Health's national strategic framework for the elimination of obstetric fistula calls for more strategies that focus on strengthening social systems that empower young girls and provide them with safety nets,¹⁵ however these recommendations almost exclusively represent the views of policy makers and care providers and not those most directly impacted: women themselves, and it has become apparent that there is a need to engage community participation in finding solutions by engaging fistula survivors.¹⁹ This study helps to answer that call, by contributing women's views on obstetric fistula risk factors and prevention to the conversation.

METHODS

Research design

Interpretive description (ID) methodology, underpinned by symbolic interactionism (SI), was used for this study, as it focuses on the subjective aspects of scientific inquiry to capture a social situation and how experiences come together, align in particular ways and become collective through social interactions.²⁰ In this way, interpretations that emanate from actions and interactions were recorded through language, symbols and texts.²¹ This approach honours subjective individual accounts but also aims to bring to light what is common across individual actors—in this case, women who have a view about obstetric fistula causes and prevention.²² In respecting these subjective

individual accounts, space is created for the multiple realities represented by different individuals' perceptions of a phenomenon. ID can also help generate practical knowledge relevant to real-world settings and inform clinical practice, policy development and programme design in the care of obstetric fistula.^{23 24} It was important to use a perspective that not only provides information on risk factors experienced by women but allows the representation of different views leading to an understanding of what will mitigate obstetric fistula in the community. The approach was deemed suitable for this study in which it was necessary to listen to women affected by obstetric fistula to learn from their experiences about what interventions may alter the risk factors for the condition in their communities.

The research team comprised an experienced midwife who has practised in northern Nigeria, two experienced Australian midwives who have worked with African migrant women who have sustained an obstetric fistula, and an experienced neonatal nurse who has worked in Africa with the neonates of women born unwell after extremely prolonged labour.

Theoretical framework

This study drew on the concept of SI. SI is a perspective that emphasises the role of symbols, meanings and interactions in shaping social reality.^{20 25} Symbols allow the inquirer (researcher) to grasp the meanings experienced by participants within a particular context, in this case, obstetric fistula. The symbolic interactionist lens was used to examine the language and symbols women used to talk about their condition.^{25 26} In this case, the focus is on how women interpret and make sense of the causes of obstetric fistula, and how they engage in social interactions relating to preventing the condition. Women may use certain terms or metaphors to describe early marriage or lack of autonomy, which can reflect their interpretation of these factors and their potential solutions. In this case, women may describe early marriage as a 'cultural practice' limiting women's ability to make decisions about their lives. These interpretations can affect how women view prevention efforts, such as the importance of girl education, prompt access to reproductive healthcare services and how it may influence their willingness to seek out or accept such services. Interactionism can help people understand how social interactions influence women's symbolic views on preventing obstetric fistula. Women may discuss prevention methods and share experiences with others in their community, which can shape their understanding of the factors that contribute to obstetric fistula. This can influence their views on prevention efforts, such as the importance of delaying marriage and promoting autonomy, as well as their willingness to advocate for these efforts within their community, which can shape their understanding of the factors that contribute to obstetric fistula.

Study participants

Purposive sampling was used to select suitable participants based on specific selection criteria.²⁷ In this approach,

individuals who have experienced the phenomenon under study²⁸ are sought as study participants. Women who were affected by obstetric fistula formed the sample for this study. Women aged 12 years and over with an obstetric fistula as a result of childbirth and able to give informed consent (>18 years) or for whom a responsible adult could give assent (<18 years) were eligible to participate in the study. Women with obstetric fistula who did not consent were ineligible to participate. The setting for the study was the Evangel Vesico Vaginal Fistula (EVVF) Centre of Bingham University Teaching Hospital in Jos, Northern Nigeria.

Sample recruitment

Annually, the EVVF Centre holds a reunion event to which women with VVF (both new cases of obstetric fistula and those who have undergone repair, successful and unsuccessful) from the local community are invited. Prior to the event, the Centre sends out individual invitations and information leaflets, issues community radio announcements, and displays poster invitations around the Centre and market areas. Family members and spouses of the women usually accompany them to the reunion, which usually lasts for 7 days but women with obstetric fistula can remain at the Centre for as long as they wish to stay. Prior to the reunion programme, a letter was sent to the director of the EVVF Centre informing him about the study and requesting permission to carry out the study at the facility. Once this permission was obtained, the nurse in charge facilitated study recruitment by introducing the first author to the women at the EVVF Centre. The first author spent some time at the EVVF Centre to familiarise herself with the setting and to gain women's and staff members' trust, and those who were identified as eligible for the study and met inclusion criteria were then approached by the first author, who provided an information sheet and a verbal explanation of the study in their native language (Hausa). The purpose of the study, its benefits, possible risks, confidentiality and participants' rights to participate or withdraw were all explained.²⁹ Women were invited to take 1 week to consider the information and to ask questions for clarity. Potential participants were then approached again, and those who agreed to take part were asked by the first author to summarise what they understood about the research; those who were able to demonstrate their understanding of the project and agreed to participate were then asked to sign the consent form. A Hausa interpreter read the consent form to women who could not read, and those who could not write their signature used a thumbprint; further, the interpreter was asked to sign a confidentiality statement before reading the consent form to the women.

Data collection

Data were collected through in-depth, semistructured interviews that were audio-recorded and typically lasted between 45 min and 60 min; interviews were conducted in a quiet confidential room to encourage honesty at

the EVVF Centre by the first author. The local language (Hausa) was used by the first author, who is fluent in it, to collect the data, and each participant was given a pseudonym to maintain confidentiality. Each interview was in two sections. First, sociodemographic data were collected from the participants and recorded separately²⁹ (see [table 1](#)). In the second part, the participants were asked to share their birthing experiences concerning obstetric fistula following four prompts: (1) 'Can you please share your birth experiences that led to obstetric fistula (birth injury)?'; (2) 'How have you been managing this problem of fistula (birth injury) before you came to the Fistula Centre?'; (3) 'How could this fistula (birth injury) have been prevented from happening to you?' and (4) 'What would you like to change about the care of women in labour to prevent this fistula (birth injury) from happening to women?'

Following this process, 15 women agreed and gave their informed consent to participate in the study. This followed the principles of ID.²³ At the 15th interview, data saturation was achieved. At this point, the responses of the participant were similar to the contents of the preceding 14 participants interviewed and there were no new elements, hence at this point data collection was ceased.³⁰ Audio recordings were transcribed in Hausa and translated by the first author, which enabled her to become immersed in the participants' narratives.^{29 31} The translated transcriptions were then back-translated to Hausa by a trained and experienced translator and compared with the originals to ensure meaning had not been lost. Detailed records of all the research steps and processes were kept as audit trails. To increase trustworthiness, the first author asked each participant to check that their transcribed data was an accurate representation of their views.³²

Data analysis

A thematic approach to data analysis was employed, which initially involved reading and re-reading the transcripts to get a deep understanding of the participants' views.^{27 33} The first author coded the participants' words, phrases or sentences relevant to the research question, with 10% of these also coded by other team members as a trustworthiness measure; hundreds of codes emerged from this process that were then grouped into several subthemes. Finally, the subthemes were arranged/clustered into four themes^{33 34} (see online supplemental material). Both the subthemes and the major themes were agreed on through a consensus process between all authors.

Patient and public involvement

The focus of this study was to emancipate the voices of women directly impacted by obstetric fistula for the purpose of adding their views to the conversations about its eradication. The study participants were women affected by the condition, and a qualitative methodology was purposely selected to enable each to put forward their views in as much detail, depth and breadth as they wished.

**Table 1** Sociodemographic factors of participants

Sociodemographic characteristics of participants	Frequency (n)	Percentage (%)
Age (years)		
≤18	3	20.00
19–29	5	33.33
30–39	5	33.33
40–49	1	6.66
50–69	1	6.66
Marital status		
Single	0	0
Married	10	66.66
Divorced	4	26.66
Widowed	1	6.66
State of origin		
Adamawa	2	13.33
Bauchi	1	6.66
Borno	1	6.66
Gombe	2	13.33
Kano	6	40.00
Niger	1	6.66
Plateau	1	6.66
Yobe	1	6.66
Educational status		
Primary	6	40.00
Secondary	2	13.33
Quranic	7	46.66
Occupation		
Unemployed	14	93.33
Employed	1	6.66
Hours spent in index labour		
≤24	4	26.66
25–48	3	20.00
49–72	6	40.00
73–96	1	6.66
97–120	1	6.66
Index pregnancy outcome		
Alive	0	00.00
Stillbirth	15	100.00
Number of fistula repair attempts		
1–3	7	46.66
4–6	3	20.00
7–9	2	13.33
10–12	2	13.33
13–15	1	6.66
Fistula repair outcome		
Achieved urinary continence	3	20.00
Ongoing urinary incontinence	12	80.00

RESULTS

Women's sociodemographic characteristics

The 15 participants' characteristics are presented in full in [table 1](#). Of particular note, 20% of participants were

aged 18 years or below, and almost half of the total sample had a Quranic (religious) education only. All participants commenced their labour at home, with 40% spending 49–72 hours in labour before seeking medical intervention, and all had a stillbirth. All participants had undergone fistula repairs. Seven participants had 1–3 repairs, three had 4–6 repairs, two participants had 7–9 repairs, and another two participants had 10–12 repairs. Only one participant had a total of 13–15 fistula repairs. At the time of this study, 12 participants were still leaking urine despite having obstetric fistula repair surgery. Only three of the 15 had no incontinence at all.

Analysis of the 15 interview transcripts resulted in four core themes where participants' views on obstetric fistula risk factors and prevention were captured. The four themes are labelled (1) Women's autonomy, (2) Economic empowerment, (3) Transportation/infrastructure; and (4) Provision of skilled healthcare services.

Women's autonomy

In this theme, the participants' recognised that women go into labour both anxious and hopeful for a birth devoid of injury or loss is reported, as well as their tacit knowledge that their peers often have a view about what the safest birthing place is and a wish that they were allowed to go there to labour. These views, however, are sometimes met with differences of opinion or refusal of permission to go to that place from their husband, mother-in-law and/or other family members who hold power, in all of which the woman's preference is lost. It was the participants' firm view that women's values and preferences related to where their baby's birth should occur should be considered, and that it is a key factor in the prevention of obstetric fistula and stillbirth. There are several representations in the data of women's sense of where would be safest for them to give birth either not being sought, being ignored or being dismissed; these are exemplified by the two quotes that follow:

'She [the participant's mother-in-law] said we should go somewhere [for help but] the other women that were there started arguing among themselves. Some were saying I should be taken to the hospital; others are saying I should be taken to the traditional birth attendant [TBA]. From there, they took me to TBA..., She [the TBA] kept pressing and squeezing my stomach for the child to come out, but the child did not come out. At that point, the child died'. (FJ).

'I asked if it will be possible to get me a vehicle that will take me to the hospital. My grandmother angrily busted out, 'Is that what you are wishing for yourself? Just this short labor and you are talking about going to the hospital. There are smaller girls than you that have given birth at home, and you are talking of going to the hospital. I apologized to her... She said they will not take me to any hospital.' (HY) (Sobs.....).

HY, further said 'Had it been I was allowed to go to the hospital at the time I started labour, I could not

have ended up with VVF, because I was still feeling the movement of the child at that time.'

It became clear in the interviews that others' refusal to permit women to go to the hospital when labour became prolonged was reflective of a general refusal of permission to access organised healthcare more generally; HY, for instance, discussed this as a woman's husband not allowing her to have formal antenatal care:

'Men should be enlightened to be allowing their wives to go to the hospital when they are pregnant because that is what is going to help their wives avoid this kind of problem [Fistula]; if they do not go to the hospital [in pregnancy], how can they know if their babies are developing in their bodies well?' (HY)

Economic empowerment

This theme reports the fact that a significant contributing factor to obstetric fistula is that young girls in north-central Nigeria are given out for marriage before they attain physical maturity, complete formal education, or undergo skills training that enables them to become economically empowered before taking the role of motherhood. Two participants, FJ and FA, had clear opinions about this situation:

'A girl should be allowed to grow up in her parent's house...girls should be allowed to reach the age of at least eighteen to nineteen before they are given out in marriage (FJ).

The girl that was to be given in marriage at the age of 15 can be allowed to reach the age of twenty-five before she marries. Before that time, she must have matured. Unless that is done, you cannot reduce VVF' (FA).

In ZA's view, '...illiteracy adds to this ...'; she went on to qualify her view by saying that 'Education can lead to enlightenment... if you read, you can know things that you did not know before' (ZA)

As a consequence of a lack of education, many very young north-central Nigerian women enter marriage fully financially dependent on their husbands, and this includes being unable to fund their maternity care. Being unable to buy skilled care, participants believe, is a direct cause of obstetric complications, as captured by FA:

'Women should be [economically] empowered, have enough money to be able to go to the hospital when they are pregnant but ... most of the time what happens is that you don't have the money'.

Women in this situation are dependent on their husband's goodwill to provide financial support to them for healthcare, but as SM went on to explain, that arrangement is not always reliable:

'Supposing you get into labour when your husband does not have even money for sachet water, you want to go to the hospital, how can he hire transport to a hospital that is far from the way? That is a problem. Worse is when

you get to a hospital where you will have to give money, the husband does not have, the wife does not have...'

Provision of infrastructure/transport

Infrastructure was considered a crucial factor for fistula prevention by the participants, who discussed several opportunities for improvement that would directly result in reduced obstetric fistula incidence. For example, participants shared that overall, living in a rural area meant the absence of good road networks. The situation becomes more difficult during the rainy season when roads become extremely challenging for vehicles to travel on effectively. For women who are supported to access formal healthcare by their family members when needed, the road situation affects their transportation in labour to hospitals for specialist care; the result is delayed intervention and the development of fistula. It became evident in the participants' accounts of the situation that women with obstetric fistula can suffer many days of delay because there is no transportation available in their community and that in that situation, they are left with no other option than to continue in labour and inevitably sustain obstetric fistula.

MU, like others, suggested that transportation challenges are urgent to address if the incidence of VVF is to be reduced:

'It is so difficult! If it rains, even motorcycles become difficult. Our cry is that the government should make roads for us even if it is for the sake of women in labour, there are people with vehicles that are willing to help without you paying anything, it is getting to the hospital that is a problem because the roads are not good.' (MU)

SM went further; her view was that 'The moment a woman is in labour, a means of transportation should be provided so that she will be taken to the hospital', and along the same lines, RY proposed that,

'Women in labour should be assisted, the government should distribute phone numbers so that if a woman is in labour and she doesn't have money, she can place a call and a vehicle [ambulance] should come and transport her to the hospital. They should announce it [ambulance number] over the radio, every ward head should be given that number, and people should be referred to their ward head or traditional rulers to go and collect these numbers so that at the start of labour, an ambulance can be sent to come and carry the expectant woman and taken to the hospital on a good time'.

Provision of skilled healthcare services

Location of 'rescue' healthcare was also identified as an issue by the participants. Healthcare in north-central Nigeria may be delivered by skilled personnel via a health facility or at home. Some women who developed fistula attributed their injury to a lack of either healthcare facilities or trained skilled personnel in their community and accessing healthcare means travelling a long distance many days; the transportation issue identified earlier



in this section means that for many, walking is the only option as FA states:

‘Some villages don't even have a clinic where a woman can attend the antenatal clinic when they are pregnant, the antenatal clinic can be the first help where a woman can know when she is going to birth, if she knows, she will run to the hospital when she is due’.

Similar to other participants, HY held the view that there should be

‘Qualified staff and doctors in all hospitals for those in ... the villages’ (HY)

Where there were no formally educated healthcare professionals near women's homes, TBAs fulfil the role of maternity care providers, however several of the participants took the view that they can worsen rather than help labour, and the overwhelming preference was for midwives to take their place:

‘Only qualified midwives should be allowed to make deliveries; if we do that, the obstetric fistula will reduce’ (FA)

DISCUSSION

The findings from this study demonstrate women's views on obstetric fistula risk factors and prevention in north-central Nigeria. Analysis of the insights of women directly affected by obstetric fistula demonstrates that, in their view and experience, obstetric fistula is a result of women having little or lack of decision-making power to choose where to birth safely, lack of economic resources and of a range of healthcare access and related infrastructure issues. Our study revealed that affording women autonomy and decision-making power, including about where to birth safely, could mitigate obstetric fistula in their communities. Participants expressed that they were given little or no chance to determine where to birth: this was decided by mothers-in-law, husbands, TBAs or community members/leaders who know little to nothing about the birthing process. In this study, all the women started labour at home, had prolonged labour, did end up at a health facility but far too late, and may have avoided obstetric fistula if their tacit knowledge of safe birthplaces was acknowledged and respected. The educational level of women in this study coupled with traditional practices of male dominance was said to impact women's autonomy and ability to make safe birth decisions. The strength of the study lies in the fact that this is the first time that northern Nigerian women have been invited to share, in their own voices, their tacit knowledge about what is responsible for and would help eradicate obstetric fistula. The study is limited by the fact that only one region of one country is represented, where obstetric fistula is a feature of many, many more women's maternity care experiences across sub-Saharan Africa and other low-income and low-resource countries.

Our findings provide clear evidence that the ‘Three Delays’ reported by Thaddeus and Maine almost three

decades ago (1994) still exist in northern Nigeria: the women in our study experienced all three, namely delay in the decision to seek care for a range of (predominantly educational and sociocultural) reasons, delay in reaching care secondary to geographical and infrastructure barriers, and delay in receiving adequate care due to insufficient healthcare facilities and qualified healthcare professionals.³⁵ Our findings are also similar to previous African studies where women attribute occurrences of obstetric fistula to a lack of power and over-reliance on unskilled persons to make birth decisions.^{29,36} Discussion Autonomy gives women the capacity and the freedom to participate in decision-making, control resources and act independently without the fear of discrimination,³⁷ and this is also the case in populations outside of Nigeria: Adhikari³⁸ assessed the effect of autonomy among women in Nepal and found that women who had autonomy in decision-making regarding their maternal health services such as where to birth safely did use maternal healthcare services compared with women without autonomy. A possible explanation could be that women who have autonomy and use maternal services are more likely to have a higher level of education, or have a higher quality of maternity carers providing information and engagement in the communities to support those women with minimal health literacy.

As well, our findings support those reported by Melah *et al*³⁹ in that both studies suggest that obstetric fistula can be mitigated by ensuring girls' education and engaging pregnant women in planning childbearing, birthing matters, and choosing their birthplace preference. As women and girls increase in autonomy and become independent, they become self-reliant in deciding on their child birthing practice.³⁸ As women share their experiences with others in their community, this can shape their understanding of the factors that contribute to obstetric fistula such as the importance of delaying marriage and promoting autonomy, as well as their willingness to advocate for these efforts within their community, which can shape their understanding of the factors that contribute to obstetric fistula.

Our study demonstrated further, that to reduce the incidence of obstetric fistula in Nigerian communities, women need to be empowered economically. Furthermore, early marriage and lack of formal education or skills training predispose women to possible obstetric fistula. Our findings resonate with a Sudanese study that explored the experiences of women living with obstetric fistula and found that the majority of the participants gave birth young, had low literacy levels and lacked economic empowerment.⁹ Lack of economic empowerment may be related to participants' low educational status, which might have been the reason for the elevated level of unemployment and women's inability to financially support their maternity care. When a woman is employed, she becomes economically empowered and independent, which in turn allows her to seek the services of skilled birth attendants and thereby reduces the risk of obstetric fistula.⁴⁰

However, Prata *et al*⁴¹ argue that the economic empowerment of women alone may not lead to change in maternal outcomes if there is no adequate and functional health system available to women. From the expressions and views of women in this study, economic empowerment would also enable women to become self-reliant in choosing a safe birthing place even in the absence of their husbands. Economic empowerment can play a crucial role in helping women avoid fistula when they are equipped with the necessary resources to access healthcare and enhance their overall well-being. This can include access to savings, credit and financial services, as well training and support to start and grow businesses.

Our participants also put forward that local provision of infrastructure, including transportation-related provisions, for women can mitigate obstetric fistula formation. Participants partially attributed their fistula to long distances between accessing healthcare services, poor road infrastructure and lack of public transportation options. Our findings agree with those documented by Ahmed *et al* and Degge *et al*: these authors take the position that the inability of women to have access to a functional transport system during labour is structural violence against women.^{9 36} Amosse *et al*⁴² concluded that transportation programmes can reduce women suffering in accessing the healthcare services but warned that emergency transportation provision of just one way to a healthcare facility could contribute to some women not using transportation as impoverished women must still find ways of paying for return transportation.^{16 43}

Dalinjong *et al*⁴⁴ concluded that the provision of a reliable transportation system for women living in distant and remote communities is key to achieving good maternal health outcomes. Finally, we identified that the obstetric fistula could be helped if healthcare facilities and qualified health professionals, particularly midwives, were available locally to where women reside, regardless of where they live. These findings align with other studies in developing countries where women's encounters with TBAs suggest shortcomings as women relate obstetric fistula to a low level of care.⁴⁴⁻⁴⁷ A WHO assessment of birth attendant knowledge and skills in four developing countries (Benin, Ecuador, Jamaica and Rwanda) identified the skills of those workers to be limited,^{48 49} resulting in, for example, improper monitoring of labour and delayed referral systems leading to poor birth outcomes. However, building midwifery capacity takes time and commitment; As Baker *et al*¹² make clear, interventions that address barriers, improving shortages of midwives, and continuous training and skill-building should be a priority for all stakeholders.

CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

This paper adds northern Nigerian women's voices to current evidence and suggests interventions to help end obstetric fistula. One of the limitations is that data were collected from only one region of Nigeria and may not

reflect other contexts where the condition is prevalent. It is apparent from our data that cultural and sociopolitical barriers, such as traditional belief and gender norms, can prevent women from accessing safe birthing services. Our findings will be of interest to policy makers, who may draw on them to inform strategies to address these issues, and to enact those strategies through community-informed and community-based intervention and education programmes that promote women's autonomy and decision-making power. Also, access to maternal healthcare could be enhanced by universal healthcare coverage and ensure that all women have access to quality obstetric care regardless of their ability to pay; this would reduce financial barriers to accessing safe birthing services. Finally, increasing the number of formally educated midwives, as well as science-based and evidence-based education of TBAs and family/community power holders on the impact and prevention of obstetric fistula should be encouraged. Further research is needed to develop and implement community-level obstetric fistula prevention interventions.

Twitter Lydia Babatunde Bulndi @lydia_bulndi

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Contributors LBB: The principal investigator for the research conceived the study, recruited participants, and collected the data with input from DI, EA, and SB. LBB, DI, and EA analysed the data with inputs from SB. All authors commented on manuscript drafts and approved the final version. LBB is the guarantor of the published data and the decision to publish.

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Patient and public involvement Patients and/or the public were involved in the design, or conduct, or reporting, or dissemination plans of this research. Refer to the Methods section for further details.

Patient consent for publication Consent obtained directly from patient(s)

Ethics approval This study involves human participants and was approved by the Edith Cowan University Human Research Ethics Committee (approval number 2020-00971). Ethical approval was also granted by Bingham University Teaching Hospital, Jos, Nigeria (approval number NHRc/21/05/2005/0070). Participants gave informed consent to participate in the study before taking part.

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Data availability statement Data are available upon reasonable request. The data sets analysed during the current study are not publicly available, as participants were not asked to consent to this at the data collection. However, Edith Cowan University Australia Data Access Committee will consider individual data requests.

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ORCID iDs

Lydia Babatunde Bulndi <http://orcid.org/0000-0001-6009-8853>

Deborah Ireson <http://orcid.org/0000-0002-2809-2141>

Esther Adama <http://orcid.org/0000-0002-7771-2722>

Sara Bayes <http://orcid.org/0000-0001-7121-9593>

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