Cureus
Part of SPRINGER NATURE

Open Access Original Article

# Navigating Puerperal Sepsis Prevention Following Caesarean Section: Mothers' Experiences, Self-Care Practices, and Information Needs in a Tertiary Hospital in Southwestern Uganda

**Review began** 10/09/2026
**Review ended** 10/22/2026
**Published** 10/26/2026

**© Copyright** 2026
Luwaga et al. This is an open access article distributed under the terms of the Creative Commons Attribution License CC-BY 4.0., which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

**DOI:** 10.7759/cureus.118630

Rachel Luwaga [1], Deborah Shindell [2], Francis Bajunirwe [3], Grace Nambozi [1], Joseph Ngonzi [4]

1. Nursing, Mbarara University of Science and Technology, Mbarara, UGA 2. Nursing, University of Nevada, Reno School of Medicine, Reno, USA 3. Community Health, Mbarara University of Science and Technology, Mbarara, UGA 4. Obstetrics and Gynecology, Mbarara University of Science and Technology, Mbarara, UGA

**Corresponding author:** Rachel Luwaga, rachelluwaga@gmail.com

## Abstract

### Introduction

Caesarean section is associated with an increased risk of postoperative complications, including surgical site infection and puerperal sepsis. The period after discharge is particularly important because mothers and their families assume greater responsibility for wound care, hygiene, recognition of danger signs, and care-seeking. Although previous studies have identified gaps in post-caesarean self-care, limited qualitative evidence from Uganda describes how mothers experience, understand, and practice infection prevention measures after returning home. This study explored the experiences and practices of mothers in preventing puerperal sepsis following caesarean section at Mbarara Regional Referral Hospital (MRRH).

### Methods

A descriptive phenomenological study was conducted among mothers who had undergone caesarean section and had been discharged from Mbarara Regional Referral Hospital. Participants were recruited purposively from the postnatal ward and communities within a 10-km radius of the hospital. Sixteen mothers participated in semi-structured, in-depth interviews conducted in English or Runyankore. Interviews were audio-recorded, transcribed verbatim, and translated where necessary. Data were analyzed inductively using thematic analysis following Braun and Clarke's six-phase approach. Saturation was reached by Participant 015 and confirmed by Participant 016.

### Results

Four themes emerged: experiences in acquiring knowledge on the prevention of puerperal sepsis, experiences in self-care, maternal practices in the prevention of puerperal sepsis, and access to and understanding of information on the prevention of puerperal sepsis. Mothers reported receiving information from health workers, relatives, other mothers, and community members, with some advice being conflicting. Poor communication, inadequate explanation of discharge information, and language barriers limited mothers' understanding. Mothers practiced personal and wound hygiene, hand hygiene, medication adherence, mobilization, and management of postpartum bleeding. However, pain, lack of support, and financial constraints made some practices difficult to implement. Mothers also reported practices influenced by informal advice, including the use of salt water, honey, and herbs on wounds. Although mothers recognized several danger signs, recognition did not always result in timely care-seeking. Mothers preferred practical, visual, and locally appropriate education, including the use of local languages and pictures.

### Conclusion

Mothers reported various practices to prevent puerperal sepsis following caesarean section, alongside challenges related to inconsistent information, limited social support, physical difficulties, and financial constraints. The findings highlight the need for clear, practical, culturally appropriate discharge education that considers mothers' experiences and the support available during recovery.

**Categories:** Obstetrics/Gynecology, Other, Preventive Medicine
**Keywords:** caesarean section, discharge education, maternal self-care, postnatal care, puerperal sepsis

## Introduction

Caesarean section is an increasingly common mode of childbirth globally. Although it can be lifesaving when medically indicated, women's experiences of caesarean birth and recovery may be influenced by social expectations, physical discomfort, and the challenges of postoperative recovery. In some settings, caesarean birth is associated with feelings of sadness, inadequacy, and stigma, particularly where vaginal birth is

perceived as the expected or preferred mode of delivery [1,2]. Following caesarean section, mothers may experience significant pain, restricted mobility, and difficulties performing household activities and caring for their newborns, which may further complicate recovery [3].

Caesarean section also increases the risk of postpartum complications, including surgical site infection and puerperal sepsis. Although infection prevention is emphasized during antenatal, intrapartum, and immediate postoperative care, infection may become apparent after discharge, when mothers and their families assume greater responsibility for wound care and monitoring for danger signs. The post-discharge period is therefore an important period for preventing infection, recognizing complications early, and seeking timely care.

Effective discharge education is an important component of post-caesarean recovery. However, evidence suggests several challenges in post-caesarean discharge education. Atuhaire found poor knowledge and inadequate practice of post-caesarean self-care among women at Mbarara Regional Referral Hospital (MRRH) [4]. Weckesser et al. reported that some women were unable to adequately process or recall post-caesarean recovery and infection prevention information, particularly when information was provided when they were fatigued after surgery [3]. In addition, Musabeyezu et al. identified wide variation and a lack of standardization in post-caesarean discharge instructions across studies in sub-Saharan Africa, particularly regarding wound care, follow-up, contraception, and postpartum mental health [5].

Mothers have reported receiving advice on keeping the surgical wound clean and dry, mobilizing after surgery, and recognizing symptoms that require medical attention. However, applying this information at home remains challenging [6]. Birth is relational in our settings, and women's ability to care for themselves may depend on the person caring for them. This may sometimes result in mothers receiving advice that differs from that provided by health workers.

The use of herbal and other substances for wound healing has also been reported in postpartum settings, although evidence regarding their safety and effectiveness remains limited [7,8].

These challenges are also evident in Uganda. At Mbarara Regional Referral Hospital (MRRH), Atuhaire reported gaps in mothers' knowledge and practice of post-caesarean self-care, with many mothers reporting limited awareness of recommended self-care practices [4]. These findings suggest that providing discharge information alone may not be sufficient to ensure appropriate self-care following caesarean section. Mothers' ability to apply information may also be influenced by how it is communicated, their understanding of the information, language, physical recovery, availability of social support, and access to essential medicines and supplies.

Although previous studies have documented gaps in post-caesarean self-care, there is limited qualitative evidence from Uganda describing how mothers experience, interpret, and practice infection prevention measures after returning home. In particular, less is known about how mothers negotiate information received from health workers and informal sources, the challenges they encounter when implementing recommended practices, how they recognize postpartum danger signs, and the forms of education they consider most useful. Understanding these experiences is important because prevention of puerperal sepsis extends beyond the health facility and depends partly on mothers' ability to implement appropriate self-care and seek timely care when complications occur.

Therefore, this study explored the experiences and practices of mothers in the prevention of puerperal sepsis following caesarean section at Mbarara Regional Referral Hospital. The study sought to understand mothers' experiences and practices in preventing puerperal sepsis after caesarean section.

## Materials And Methods

### Study design

A descriptive phenomenological study design was used to explore mothers' lived experiences and practices related to the prevention of puerperal sepsis following caesarean section. Descriptive phenomenology was appropriate because the study sought to describe how mothers experienced the post-caesarean period, how they understood infection prevention practices, and how they experienced and responded to these practices in their everyday lives. Phenomenology is appropriate when the aim is to understand people's lived experiences of a particular phenomenon from their own perspectives [9].

### Study setting

The study was conducted in the postnatal ward of Mbarara Regional Referral Hospital (MRRH) and in the communities where mothers resided within a 10-km radius of the hospital.

### Study population

The study population comprised women who had undergone caesarean section and had been discharged

from the postnatal ward.

## Inclusion criteria

Women who had delivered by caesarean section, were on the seventh postnatal day, had no signs or symptoms of puerperal sepsis or other post-caesarean complications at the time of the interview, and were able to communicate in either English or Runyankore were eligible to participate in the study.

## Exclusion criteria

Women who presented with signs of puerperal sepsis at the seven-day postnatal assessment were excluded from the study and referred to the nearest health facility for further evaluation and appropriate management.

## Sample size and sampling technique

A total of 16 mothers were purposively selected to participate in the study based on the inclusion criteria and their relevance to the research question. An initial sample of approximately 10 participants was anticipated based on commonly reported sample sizes for phenomenological studies [9]. However, recruitment continued until sufficient depth and repetition of information relevant to the research question were achieved.

## Data saturation

Data saturation was assessed iteratively throughout data collection. Following each interview, emerging codes and categories were compared with those identified in previous interviews to determine whether new concepts or thematic domains were emerging. Early interviews generated concepts relating to mothers' experiences and practices following caesarean section, including wound care, personal hygiene, medication adherence, mobilization, social support, financial challenges, discharge information, and preferred approaches to health education. As data collection progressed, these concepts were increasingly repeated and elaborated, with progressively fewer new codes emerging. By Participant 015, no substantially new major thematic domains were identified, suggesting that saturation had been reached. Participant 016 was used as a confirmatory interview and reinforced and deepened the existing findings, particularly regarding infection prevention practices and personal hygiene, without generating a substantially new thematic domain.

## Data collection

Data were collected using a semi-structured, in-depth interview guide developed from the research question and informed by relevant literature on puerperal-sepsis prevention and post-caesarean self-care.

The interview guide contained open-ended questions and probes that allowed mothers to describe their experiences in their own words. The interviews explored experiences and practices related to personal and environmental hygiene, caesarean wound care, hand hygiene, medication adherence, mobilization and physical recovery, and recognition of danger signs.

The interview guide was developed in English and translated into Runyankore to enable participants to be interviewed in their preferred language while maintaining consistency in the areas explored.

Mothers who had delivered by caesarean section and had no post-caesarean complications at the time of discharge were purposively recruited and invited to participate in the study. Appointments were scheduled with mothers for interviews at their homes on the seventh postnatal day.

Each interview lasted approximately 40-60 minutes and was conducted by the researcher and trained research assistant with a background of Midwifery and was proficient in Runyankore. Interviews were audio-recorded with participants' permission. Participants were encouraged to describe their experiences freely, and probes were used to clarify responses and obtain further detail where necessary.

At the time of the interviews, all participants reported a pain score of less than 2 on the Numeric Rating Scale, indicating minimal pain and allowing them to participate comfortably in the interviews.

When a participant required prescribed pain medication at the time of the interview, the research assistants, who were registered nurses and midwives, ensured that she accessed and received the medication as prescribed.

Participants who presented with signs of puerperal sepsis or other postpartum danger signs were excluded from the study and immediately referred to the nearest appropriate health facility for further assessment and management.

## Development and refinement of the interview guide

Qualitative data collection was iterative. The interview guide was reviewed during the early stages of data collection to assess the clarity, relevance, and sequencing of the questions.

The first two interviews were reviewed to assess whether the questions and probes provided enough detail about mothers' experiences and practices. Only minor changes were made to the interview guide. These mainly involved adding probes on catheter care and challenges in providing or receiving care to improve clarity and obtain more detailed responses. The main questions and focus of the study remained unchanged. Issues that emerged during the interviews were also used to guide further probing in subsequent interviews.

## Data analysis

Audio-recorded interviews conducted in Runyankore were transcribed verbatim in the original language and translated into English by the researcher and research assistants, ensuring that the meaning and context of participants' accounts were preserved. The English translations were then back-translated into Runyankore by the researcher and research assistants and compared with the original transcripts to assess the accuracy, consistency, and clarity of the translations. Any discrepancies were reviewed and resolved through discussion.

Interview data were analyzed using thematic analysis, following Braun and Clarke's (2006) approach [10]. This method was chosen because it provides a systematic and flexible way of identifying, analyzing, and reporting patterns of meaning in participants' accounts. It supported the descriptive phenomenological aim of exploring mothers' lived experiences following caesarean section, including their experiences, perceptions, challenges, and practices related to post-discharge recovery and puerperal sepsis prevention. The analysis explored mothers' experiences of wound care, personal hygiene, medication adherence, mobilization, social support, financial challenges, and discharge education while recognizing differences in their individual experiences.

The analysis was primarily inductive, allowing codes and themes to emerge from mothers' accounts, while the research question guided attention to experiences and practices relevant to puerperal sepsis prevention. After transcription, the researchers repeatedly read the interviews to become familiar with the data and identify patterns across participants' accounts. Similar statements and experiences were compared and assigned initial codes. Related codes were then grouped into subthemes, which were reviewed and refined to identify conceptual relationships and develop broader themes reflecting the shared meanings and experiences described by the mothers.

## Trustworthiness and rigor

Trustworthiness was addressed using the four criteria of credibility, transferability, dependability, and confirmability.

## Credibility

Credibility was enhanced through the use of a semi-structured interview guide containing open-ended questions and probes. This enabled mothers to describe their experiences in detail while ensuring that the main areas relevant to the research question were addressed.

The first two interviews were reviewed to refine the interview guide, allowing emerging issues to be explored in subsequent interviews.

The researcher and research assistants maintained a reflexive approach throughout data collection and analysis. As health professionals, the research team recognized that their professional experiences and prior knowledge could influence interpretation of participants' accounts. These assumptions were acknowledged and consciously bracketed as far as possible to maintain focus on mothers' descriptions and meanings [11].

Audio recording, verbatim transcription, and the use of direct participant quotations further strengthened credibility by maintaining a clear connection between participants' accounts and the reported findings.

## Transferability

Transferability was supported by providing a detailed description of the study setting, participants, recruitment procedures, data collection process, and analytic approach.

Purposive sampling enabled the inclusion of mothers with different backgrounds and experiences of post-caesarean care. However, because this was a qualitative study conducted at a regional referral hospital in southwestern Uganda, the findings are not intended to be statistically generalized to all mothers in Uganda. Their applicability to other settings should instead be considered in relation to similarities in social, cultural, and health system contexts.

### Dependability

Dependability was enhanced through systematic documentation of the research process, including participant recruitment, development and refinement of the interview guide, data collection, transcription, coding, development of themes, and decisions made during analysis.

Emerging codes, categories, and interpretations were reviewed by members of the research team. Differences in interpretation were discussed and resolved through consensus. An audit trail of methodological and analytic decisions was maintained to enhance transparency.

### Confirmability

Confirmability was enhanced through reflexive documentation. The researcher and research assistants recorded reflections, assumptions, and potential biases following interviews. These reflections helped the team distinguish participants' accounts from the researchers' own experiences and interpretations.

The use of a semi-structured interview guide and probes ensured that participants had opportunities to describe their experiences in their own words. Clarification was sought whenever responses were unclear rather than making assumptions about their meaning.

Direct quotations were included in the findings to allow readers to assess the relationship between the participants' accounts and the researchers' interpretations.

### Ethical considerations

Approval for conducting the study was obtained from the Mbarara University of Science and Technology Research Ethics Committee (approval number: MUST-2024-1696).

All participants provided both written informed consent and audio consent to participate in the study. No participants withdrew from the study.

To ensure confidentiality, all audio recordings were transferred from the audio recorder and stored on an external hard drive accessible only to the principal investigator. The recordings will be retained for five years; after which they will be permanently deleted. Participants could not be identified or traced, as all data were labelled using unique participant identification codes that were not linked to their consent forms or any personal identifiers.

Interviews were conducted in a private setting at the participant's home to protect confidentiality and allow mothers to discuss their experiences freely.

Audio recordings, transcripts, and other research data were stored securely and were accessible only to authorized members of the research team.

Because the interviews addressed postpartum experiences and puerperal sepsis prevention, participants who were identified as having signs of puerperal sepsis or other postpartum danger signs were referred for appropriate clinical assessment and management. Where a participant required prescribed medication during the interview, the trained research assistants supported access to the medication according to the participant's prescription.

## Results

A total of 16 mothers who had undergone a caesarean section and had been discharged from Mbarara Regional Referral Hospital participated in the qualitative interviews. The participants ranged in age from 23 to 46 years. Their educational attainment varied from primary education to tertiary education, with most having attained secondary education. The sample included primiparous mothers, women with two or three children, and multiparous mothers with up to six children. Some participants were experiencing their first caesarean section, whereas others had undergone multiple caesarean deliveries, including one participant who had previously undergone four caesarean sections, as seen in Table *1*.

| Characteristic | Category | Frequency (number) | Percentage (%) |
|---|---|---|---|
| Age group (years) | 20-29 | 6 | 37.5 |
| | 30-39 | 7 | 43.8 |
| | ≥40 | 3 | 18.8 |
| Education level | Primary | 5 | 31.3 |
| | Secondary | 9 | 56.3 |
| | Tertiary | 2 | 12.5 |
| Parity | Primiparous | 3 | 18.8 |
| | Para 2-3 | 8 | 50.0 |
| | Para ≥4 | 5 | 31.3 |
| Previous caesarean section | Yes | 10 | 62.5 |
| | No (first caesarean section) | 6 | 37.5 |

**TABLE 1: Demographic characteristics of the participants**

## Theme and subthemes

Thematic analysis of the participants' responses generated four overarching themes and their corresponding subthemes, as presented in Table 2.

| Theme | Subthemes |
|---|---|
| Theme 1: Experiences in acquiring knowledge on the prevention of puerperal sepsis | Conflicting information from health workers, relatives, and community members |
| | Poor communication |
| | Inadequate explanation of the discharge form |
| | Language and comprehension barriers |
| Theme 2: Experiences in self-care in the prevention of puerperal sepsis | Health worker and family support |
| | Pain and physical difficulties |
| | Financial constraints affecting self-care |
| Theme 3: Maternal practices in the prevention of puerperal sepsis | Personal, environmental, and wound hygiene |
| | Hand hygiene and protection of the incision |
| | Medication adherence and mobilization |
| | Postpartum bleeding and bowel management |
| | Practices arising from conflicting advice |
| Theme 4: Access to and understanding of information on the prevention of puerperal sepsis | Preference for practical, visual, and locally appropriate education |
| | Recognition of danger signs and care-seeking |
| | Influence of informal sources on knowledge about puerperal sepsis and wound care |

**TABLE 2: Themes and subthemes generated from the participants' responses**

## Narratives

The analysis of mothers' accounts generated four themes: positive and negative experiences during postpartum recovery, maternal practices in the prevention of puerperal sepsis, factors influencing maternal practices, and experiences and preferences regarding preventive education and communication as described in the narratives below.

*Theme 1: Experiences in Acquiring Knowledge on the Prevention of Puerperal Sepsis*

Conflicting information from health workers, relatives, and community members: Mothers reported that the information they received after delivery about preventing puerperal sepsis was not always consistent. They received different advice from health workers and people around them. One mother recalled that the information she received after a previous delivery influenced her to engage in poor self-care practices.

> "People have been telling me different things. Some say to put salt, while others say to put honey on the wound. Everyone gives their own advice. But you have to follow what the health workers told you." P007

> "Even when I came home from the hospital, I continued wiping myself instead of bathing. I heard some health workers say that the water you use can affect the wound. I wiped myself because I was afraid of water getting on the incision." P014

Poor communication: Some mothers experienced poor communication with health workers, describing it as tough, belittling, and one-sided, which made it difficult for them to ask questions, seek clarification, and obtain further information about puerperal sepsis prevention, as seen in the quotations below.

> "I can't come to you when you are very tough, like there is something I want to ask you, nurse, and you are like, 'I don't know; the doctors have just moved outside'." P005

> "When the other person comes holding her waist, saying, 'You smell. Don't come close to me; speak from there,' how will you learn those things?" P005

> "The communication is between themselves as health workers, and as a patient, there is nothing you can benefit from." P014

Inadequate explanation for the discharge form: Some mothers received written information but reported that it was not adequately explained; others reported not being given information at all, as seen in the quotes below.

> "The health workers in the hospital don't explain anything to you. They just keep writing. You find that you don't understand what they have written, and they just give you the paper to take." P014

> "No! They don't explain to us. They only come and ask if the baby is fine, if you have pain or not…." P006

> "They mainly told us to go there and pick the forms, asked us a few questions, and gave us the forms, and we had to go home. They didn't tell me the importance of it." P011

Language and comprehension barriers: Some mothers reported language barriers that made it difficult for them to understand the discharge information written in English. They requested the information be explained in a language they could understand. One mother reported that when the health worker explained the information in Runyankore, she was able to understand what was being taught, as shown in the quotations below.

> "Also teach us in Runyankole language because, like me, if I come and you speak English, I might go with nothing." P015

> "The health worker explained it to me and first asked if I understood. I told him that there were some things I did not understand. He explained them to me in Runyankole, and I understood." P016

*Theme 2: Experiences in Self-Care in the Prevention of Puerperal Sepsis*

Health worker and family support: Some mothers described receiving support from health workers through reassurance, regular monitoring, and practical advice on preventing puerperal sepsis. They also received support from family members who helped them with personal hygiene and other activities during recovery, making it easier for them to carry out postoperative self-care.

> "The health workers have taught me that if you keep walking around, the incision heals faster and the pain reduces." P016

> "I have my caretaker with me. We get a wiper, put warm water and some soap on it, and she wipes me. She wipes my whole body." P008

> "Because I have someone taking care of me, and I am also trying very hard to get up and walk around. I do not sit on the bed for long so that I do not get problems." P005

However, some mothers reported being unable to perform self-care and prevent puerperal sepsis effectively because they lacked assistance and support at home.

> "I did not have time to walk. I stayed in bed during the first week until I got someone to help me. Then I had some time to walk." P008

> "They told me not to carry heavy things, but because I am alone, sometimes I find myself lifting them." P015

Pain and physical difficulties: Some mothers experienced pain and physical difficulties that made it difficult for them to care for their wounds, move around, and carry out their daily activities, as seen in the quotations below.

> "Cleaning the wound while in pain, with a crying baby, and having to carry the baby sometimes made me feel pain, but I continued doing what the health workers told me to do." P013

> "The pain is always there, but what disturbs me most is the catheter because it is very painful. Walking and doing other activities while carrying the catheter sometimes becomes difficult." P014

> "I was always alone, and because it was my first birth, it was really difficult. The health worker would tell me to get out of bed, but I was in a lot of pain and did not even have the strength to get up." P015

Financial constraints affecting self-care: Some mothers experienced financial difficulties that made it hard for them to obtain essential supplies needed for healing and preventing puerperal sepsis, as seen in the quotations below.

> "There are times when I run out of the things I need, and I do not have money to buy more, such as when I run out of pads and I do not have money to buy more." P007

> "Sometimes, they tell you to buy medicines, but you do not have money to buy them. You also find that there is not enough food." P007

> "My biggest challenge is that I don't have the money to buy some of the things that I need to use more, especially what to drink." P016

*Theme 3: Maternal Practices in the Prevention of Puerperal Sepsis*

Personal, environmental, and wound hygiene: Maintaining cleanliness was a prominent practice across the mothers' accounts. Mothers described bathing, washing their clothes and bedding, maintaining clean surroundings, and using clean materials when caring for themselves and their wounds.

> "I should make sure that if I use a basin or a bucket, it should be very washed and clean. Then the sponge is also clean. Still, with my hands, I also make sure that they are clean." P015

> "I get a clean piece of cloth and put it in the salt water, and then I remove the water and use it to clean the wound." P016

> "Drinking clean water and also making sure that when I take a bath, the container is very clean. Also making sure that every day, you wash the clothes you wore. Put on the cloth that is clean." P003

> "I use boiled water for bathing. I boil it like drinking water to kill the bacteria. Once it cools down, I use it for bathing." P011

> "I also make sure that the place that I stay in is very clean. Where I sleep, I make sure that the bedsheets are washed; I also make sure that I put on washed clothes. If I bathe, I make sure that I don't go back to the same dress I was putting on before bathing, so that when I sweat, the dirt does not go from the dress I was putting on to the wound." P015

Hand hygiene and incision site care: Mothers described deliberate efforts to prevent contamination of the surgical wound. Washing hands before touching the incision and avoiding unnecessary manipulation were important practices.

> "I make sure that I touch the wound with clean hands. Before touching there, I first wash my hands." P015

> "I fear that I might touch something with dirty hands and find out it was me who carried the infection there." P016

> "I only touch there when I am bathing. Because in there, I can wash my hands and I touch there to feel how it is, and I usually touch where I feel the pain and try massaging it." P01

Medication adherence and mobilization: Taking prescribed medication and mobilizing were commonly described practices. Mothers linked these practices to healing, reduction of pain, and prevention of infection.

> "If you don't take the prescribed medication on time, you can end up with this infection. I take my medications on time, and I have not yet got any problem." P016

> "I take the medications, and when the pain is too much sometimes, I use the suppositories, and I feel relieved." P008

Postpartum bleeding and bowel management: Mothers described practices for managing postpartum bleeding and bowel function. Pad changing was often guided by the amount of bleeding, while dietary practices were used to maintain bowel function and reduce discomfort.

> "When I feel like blood is coming, I don't wait for long. I remove the pad, clean myself, and then put another one." P016

> "Another thing is when you are not changing the pads in time. For example, using the pad for the whole day, bacteria can come from the pad, and they get to your wound and end up with puerperal sepsis." P016

Practices arising from conflicting advice: Mothers reported receiving advice from several sources, including health workers, relatives, friends, and other women in the community. The advice was sometimes inconsistent, resulting in different approaches to wound care.

> "Also, getting warm water and putting salt; then I massage the wound. A different health worker who had come to check on me told me. Because those at the referral, they didn't tell us about it." P013

> "There are some herbs that, once you apply them, can make the wound heal fast, like alveola, cactus…." P016

> "People told me that honey makes it dry very fast and that it heals." P014

*Theme 4: Access to and Understanding of Information on the Prevention of Puerperal Sepsis*

Preference for practical, visual, and locally appropriate education: Mothers expressed a preference for health education that was practical, understandable, and delivered in ways that matched their learning needs. They suggested group teaching, use of visual materials, local languages, and multiple communication platforms such as radio and television.

> "Gathering all women in the ward and teaching them. Also, gathering all women in their villages and teaching them." P014

> "If possible, while teaching us, you also draw for us some pictures. Also, teach us in Runyankole language." P015

> "If you organize a radio program… Also showing it on televisions." P016

Recognition of danger signs and challenges in care-seeking: Mothers demonstrated awareness of several signs that could indicate puerperal infection and identified circumstances in which they should seek further care. Reported danger signs included foul-smelling discharge, fever, excessive bleeding, vomiting, and pain. However, knowledge of danger signs did not always translate into immediate care-seeking, with fear of returning to hospital emerging as a potential barrier.

> "If I see like a smelly discharge, fever, or overbleeding, that I should go there." P015

> "Bleeding, someone feeling feverish, vomiting, pain in the legs, and the smell." P014

> "Fever, vomiting, poor discharge, pain in the legs…" P016

However, recognition of danger signs did not necessarily mean that mothers would immediately seek care.

> "I would fear that if I go back to the hospital, they would take me back to the theater." P016

Influence of informal sources on knowledge about puerperal sepsis and wound care: Some mothers reported that their knowledge about puerperal infection and postpartum self-care came from other women, relatives, caregivers, or other people in their communities, rather than exclusively from formal health education. This was particularly evident in information about infection symptoms, as seen in the quotation below.

> "I hear other mothers say that this infection can cause a smelly discharge, like I have said; sometimes, you feel pain while cleaning yourself, or itching, that is what I hear them say about it." P014

> "The health workers had told me to bathe normally, but other people around me told me that if I put water on it, I will not survive." P014

## Discussion

This study explored the experiences and practices of mothers in preventing puerperal sepsis following caesarean section at Mbarara Regional Referral Hospital. The findings show that mothers were actively involved in several practices intended to prevent infection, including hygiene, wound care, medication use, mobilization, and recognition of danger signs. However, the ability to carry out these practices was shaped by the information mothers received, how that information was communicated and understood, and the social, physical, and financial circumstances in which mothers recovered after discharge. This suggests that prevention of puerperal sepsis after caesarean section cannot be understood as a matter of maternal knowledge alone.

### Experiences in acquiring knowledge on the prevention of puerperal sepsis

A major finding was that mothers did not simply experience a lack of information. Instead, they were exposed to information from several sources, and the information was sometimes conflicting. Mothers described receiving advice from health workers, relatives, other mothers, and community members, particularly about wound care and bathing. Some reported advice to use salt water or honey on the wound, while others were advised to avoid water.

This finding is similar to that by Mdoe et al., who found that information provided by nurse-midwives after caesarean section was not always uniform [12]. However, the present study provides a broader explanation of the problem. Whereas Mdoe et al. [12] examined the content of information provided by nurse-midwives, mothers in the present study described what happened to that information after they left the health facility. Their accounts show that health worker advice became only one of several sources of information influencing decisions at home.

This difference is important. Standardizing information among health workers may reduce conflicting messages within the health facility, but it may not prevent mothers from receiving different advice from relatives, other mothers, and community members. In the present study, these informal sources were not simply providing background information; they could influence specific decisions about bathing and wound care. The finding therefore suggests that post-caesarean education may need to extend beyond the mother and include the people who are likely to support her at home.

The findings also show that access to information does not necessarily result in understanding. Some mothers described health worker communication as difficult, one-sided, or discouraging, while others reported receiving discharge forms without adequate explanation. This differs from an approach in which the provision of written information is treated as evidence that adequate education has occurred. In the present study, mothers' accounts suggest that the important issue was not only whether information was provided but also whether they could ask questions, obtain clarification, and understand how to apply it.

Namutebi et al. similarly identified continuing information needs among teenage first-time mothers during the early postpartum period [13]. However, the present study extends this evidence by identifying communication itself as part of the problem. Mothers who felt unable to approach health workers may have had fewer opportunities to clarify information they did not understand. Thus, effective discharge education should involve interaction between the health worker and mother rather than simply transferring information from the health worker to the mother.

Language provided another explanation for difficulties in acquiring knowledge. Mothers who had difficulty understanding English requested education in Runyankole, while one mother described how explanation in Runyankole enabled her to understand the information. This finding supports previous Ugandan evidence that maternal health education may not be effective when the method of delivery does not match women's understanding. However, the present study adds a specific post-caesarean perspective: information may reach the mother physically through a written form, but its usefulness is limited if the mother cannot understand the language in which it is presented.

### Experiences in self-care in the prevention of puerperal sepsis

The findings challenge the idea that post-caesarean self-care is solely an individual responsibility. Some mothers described receiving practical support from family members and caregivers, including assistance with bathing and mobilization, while others struggled when such support was unavailable.

Roed et al. similarly found that women valued family and social support during pregnancy, childbirth, and

the postnatal period [14]. However, the present study provides greater detail on how this support affects specific post-caesarean activities. Mothers described support as enabling them to perform activities that were difficult to undertake alone. Conversely, lack of support sometimes meant that mothers could not follow advice given by health workers. Thus, the difference between knowing what should be done and being able to do it may partly depend on the availability of someone to assist the mother.

Physical recovery further widened this gap. Mothers described pain, weakness, and difficulty walking or caring for their newborns. These experiences suggest that advice such as "mobilize" cannot be considered separately from the mother's physical condition. A mother may understand the importance of mobilization but be temporarily unable to carry it out because of pain or weakness. Discharge education therefore needs to consider not only what mothers should do but also how they can safely manage these activities during recovery.

Financial difficulties provided another example of the difference between knowledge and practice. Mothers reported being unable to buy medicines, pads, and other supplies because they lacked money. Sacks et al. identified cost as a barrier to postnatal care utilization in Uganda and Zambia [15]. The present study differs in showing how financial constraints operate within the home care process itself. The problem was not necessarily that mothers did not understand what they needed; in some cases, they understood the recommendation but lacked the resources to follow it.

This finding is important because it challenges approaches that place the responsibility for puerperal sepsis prevention mainly on maternal behavior. Education may improve knowledge, but knowledge alone cannot overcome lack of support, pain, or inability to obtain essential supplies. Prevention strategies therefore need to consider the circumstances in which mothers are expected to practice self-care.

## Maternal practices in the prevention of puerperal sepsis

Mothers described several practices intended to prevent infection, including personal and environmental hygiene, wound care, hand hygiene, medication adherence, mobilization, and management of postpartum bleeding. These accounts demonstrate that mothers were actively trying to protect themselves from infection.

However, the findings also show that appropriate practices sometimes existed alongside practices based on conflicting advice. Some mothers described using salt water, honey, or herbs on their wounds after receiving advice from health workers or people in the community. This is an important distinction because the presence of a practice does not necessarily mean that the mother has received correct or consistent information about that practice.

Atuhaire, working at the same hospital, identified gaps in mothers' knowledge and practice of post-caesarean self-care. The present study does not simply repeat this finding. Rather, it provides an explanation for how these gaps may arise. Mothers described the different sources of information available to them, the challenges of recovery, and the circumstances that influenced the practices they adopted at home. In this way, the present study adds the experiences behind the previously identified knowledge and practice gaps.

The findings also demonstrate that maternal practices should not be interpreted in isolation from the context in which they occur. For example, medication adherence was reported as an important practice, but some mothers could not afford medicines. Similarly, mobilization was valued, but pain and lack of assistance could make it difficult. These findings show that maternal practices are shaped by both individual decisions and the conditions surrounding the mother.

## Access to and understanding of information on the prevention of puerperal sepsis

Mothers expressed a preference for practical, visual, and locally appropriate education. They suggested pictures, group teaching, local language education, radio, and television. This finding is important because mothers were not simply asking for more information. They were describing the form of information that they believed would help them understand and apply what they were taught.

This finding contrasts with a discharge approach that relies heavily on written information. In the present study, some mothers reported receiving forms without adequate explanation. The problem therefore appears to be not only the availability of educational material but also whether the material is understandable and usable. The preference for pictures and practical teaching suggests that mothers may benefit from education that demonstrates what they should do rather than only describing it in writing.

The findings on danger signs provide another important distinction between knowledge and action. Mothers identified foul-smelling discharge, fever, excessive bleeding, vomiting, and pain as signs that could indicate a problem. However, recognition did not always result in immediate care-seeking. One mother expressed fear that returning to the hospital could result in another operation.

Previous Ugandan studies have identified gaps in women's knowledge of maternal and postpartum danger signs [16,17]. The present study adds a different dimension to this evidence. Rather than demonstrating only a lack of knowledge, the findings show that a mother may recognize a danger sign and still delay seeking care because of fear. Thus, improving recognition alone may not be enough to improve timely care-seeking.

Discharge education should therefore explain not only the danger signs but also what mothers should do when they occur, where they should seek care, and what they can expect when they return to the health facility. Addressing fear and previous experiences with health services may be necessary if knowledge is to result in timely action.

### Limitations of the study

The study was conducted at one health facility; therefore, the findings may not be directly generalizable to mothers receiving post-caesarean care in other settings. However, the findings may be relevant to health facilities with similar healthcare systems, cultural contexts, and patient populations.

The study excluded mothers who presented with post-caesarean complications or signs of puerperal sepsis at the time of the interview. This may have limited the range of experiences captured, potentially affecting the transferability of the findings to mothers experiencing these conditions. We acknowledge this limitation and recommend further studies specifically exploring the experiences of these mothers to gain a deeper understanding of their unique post-caesarean care needs and challenges.

The study relied partly on mothers' self-reported experiences and practices, which may have been affected by recall or social desirability bias. However, the interviews were conducted on the seventh postpartum day, a relatively short period after discharge, which may have helped mothers recall their experiences and practices more accurately.

### Recommendations

Tertiary institutions should provide standardized, simple, and culturally appropriate post-caesarean discharge education using local languages, visual aids, and practical demonstrations. Caregivers should be included in the discharge education process to reduce conflicting advice and improve the support available to mothers when carrying out self-care. Health workers should provide mothers with an opportunity to ask questions, seek clarification, and confirm their understanding before discharge. Health workers should explain the discharge form rather than simply handing it to the mother. Health workers should assess whether mothers have the necessary support, medicines, and basic supplies to carry out recommended self-care after discharge. Where possible, mothers experiencing financial or social difficulties should be linked to available support services.

## Conclusions

The study found that mothers reported engaging in various practices to prevent puerperal sepsis following caesarean section, including personal and wound hygiene, hand hygiene, medication adherence, mobilization, and recognition of postpartum danger signs. Their accounts highlighted the challenges experienced in practicing these measures, including inconsistent information, communication and language barriers, limited social support, physical difficulties, and financial constraints. These experiences illustrate the realities of undertaking post-caesarean self-care within the social, physical, and economic circumstances of recovery at home.

Mothers described receiving information from health workers, relatives, other mothers, and community members, sometimes encountering conflicting advice regarding wound care and other self-care practices. Although mothers recognized several postpartum danger signs, recognition did not always translate into timely care-seeking. Collectively, the findings highlight the importance of discharge education that is consistent, practical, understandable, visually supported, and culturally appropriate. They also emphasize the need to recognize caregivers and other sources of support within mothers' home environments when addressing their experiences and practices in preventing puerperal sepsis following caesarean section.

## Additional Information

### Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

**Concept and design:** Rachel Luwaga, Deborah Shindell, Francis Bajunirwe, Grace Nambozi, Joseph Ngonzi

**Acquisition, analysis, or interpretation of data:** Rachel Luwaga

**Drafting of the manuscript:** Rachel Luwaga, Deborah Shindell, Francis Bajunirwe, Grace Nambozi, Joseph

Ngonzi

**Critical review of the manuscript for important intellectual content:** Rachel Luwaga, Deborah Shindell, Francis Bajunirwe, Grace Nambozi, Joseph Ngonzi

**Supervision:** Deborah Shindell, Francis Bajunirwe, Grace Nambozi, Joseph Ngonzi

## Disclosures

**Human subjects:** Informed consent for treatment and open access publication was obtained or waived by all participants in this study. The Mbarara University of Science and Technology (MUST) Research Ethics Committee issued approval MUST-2024-1696. **Animal subjects:** All authors have confirmed that this study did not involve animal subjects or tissue. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

## Acknowledgements

I sincerely thank my supervisors, Professor Deborah Shindell, Professor Joseph Ngonzi, and Professor Francis Bajunirwe, for their guidance and support throughout this study. I am also grateful to Dr. Grace Namboozi for her encouragement, to the staff and management of Mbarara Regional Referral Hospital and participating health workers for their cooperation, and to Ms. Sarah Mwijukye for her assistance with data collection. Finally, I thank my family and friends for their unwavering support. Data are stored as de-identified participant data, which are available upon request at mwijukyesarah16@gmail.com

# References

1. Afaya A, Dzomeku VM, Baku EA, et al.: Women's experiences of midwifery care immediately before and after caesarean section deliveries at a public hospital in the Western Region of Ghana. BMC Pregnancy Childbirth. 2020, 20:8. 10.1186/s12884-019-2698-4
2. Rodriguez J, Moro MR, Radjack R: Migrant mothers' experiences of caesarean section: a transcultural qualitative study. Front Psychiatry. 2023, 14:1152810. 10.3389/fpsyt.2023.1152810
3. Weckesser A, Farmer N, Dam R, Wilson A, Morton VH, Morris RK: Women's perspectives on caesarean section recovery, infection and the PREPS trial: a qualitative pilot study. BMC Pregnancy Childbirth. 2019, 19:245. 10.1186/s12884-019-2402-8
4. Atuhaire S: Knowledge and practices of post cesarean section mothers towards self-care after delivery at Mbarara Regional Referral Hospital. J Obstet Gynaecol. 2021, 1-13.
5. Musabeyezu J, Santos J, Niyigena A, Uwimana A, Hedt-Gauthier B, Boatin AA: Discharge instructions given to women following delivery by cesarean section in Sub-Saharan Africa: a scoping review. PLOS Glob Public Health. 2022, 2:e0000318. 10.1371/journal.pgph.0000318
6. Kateera F, Hedt-Gauthier B, Luo A, et al.: Safe recovery after cesarean in rural Africa: technical consensus guidelines for post-discharge care. Int J Gynaecol Obstet. 2023, 160:12-21. 10.1002/ijgo.14284
7. Izadpanah A, Soorgi S, Geraminejad N, Hosseini M: Effect of grape seed extract ointment on cesarean section wound healing: a double-blind, randomized, controlled clinical trial. Complement Ther Clin Pract. 2019, 35:323-8. 10.1016/j.ctcp.2019.03.011
8. Peter EG, Ali Seif S: The influence of home environment and wound care practice on surgical site infection among post cesarean section women in Dodoma- Tanzania. Int J Africa Nurs Sci. 2022, 17:100474. 10.1016/j.ijans.2022.100474
9. Starks H, Trinidad SB: Choose your method: a comparison of phenomenology, discourse analysis, and grounded theory. Qual Health Res. 2007, 17:1372-80. 10.1177/1049732307307031
10. Braun V, Clarke V: Using thematic analysis in psychology . Qual Res Psychol. 2006, 3:77-101. 10.1191/1478088706qp063oa
11. Jootun D, McGhee G, Marland GR: Reflexivity: promoting rigour in qualitative research . Nurs Stand. 2009, 23:42-6. 10.7748/ns2009.02.23.23.42.c6800
12. Mdoe MB, Mselle LT, Kibusi SM: An integrative review of home care recommendations for women after caesarean section. Nurs Open. 2024, 11:e2145. 10.1002/nop2.2145
13. Namutebi M, Kabahinda D, Mbalinda SN, et al.: Teenage first-time mothers' perceptions about their health care needs in the immediate and early postpartum period in Uganda. BMC Pregnancy Childbirth. 2022, 22:743. 10.1186/s12884-022-05062-7
14. Roed MB, Engebretsen IM, Mangeni R, Namata I: Women's experiences of maternal and newborn health care services and support systems in Buikwe District, Uganda: a qualitative study. PLoS One. 2021, 16:e0261414. 10.1371/journal.pone.0261414
15. Sacks E, Masvawure TB, Atuyambe LM, Neema S, Macwan'gi M, Simbaya J, Kruk M: Postnatal care experiences and barriers to care utilization for home- and facility-delivered newborns in Uganda and Zambia. Matern Child Health J. 2017, 21:599-606. 10.1007/s10995-016-2144-4
16. Kabakyenga JK, Östergren PO, Turyakira E, Pettersson KO: Knowledge of obstetric danger signs and birth preparedness practices among women in rural Uganda. Reprod Health. 2011, 8:33. 10.1186/1742-4755-8-33
17. Nabugwere RS, Mbalinda SN, Ayebare E: Knowledge of postnatal danger signs and associated factors among

first-time mothers at Tororo General Hospital, Uganda. Afr J Midwifery Womens Health. 2022, 16:1-9. 10.12968/ajmw.2021.0057