MOMENTUM
Safe Surgery in Family Planning and Obstetrics

Research Brief

WOMEN'S EXPERIENCE OF PERIPARTUM HYSTERECTOMY AND PROVISION OF CARE IN LOW- AND MIDDLE-INCOME COUNTRIES

A Scoping Review Brief

A PERIPARTUM HYSTERECTOMY, the removal of the uterus during pregnancy or up to 42 days postpartum, is a procedure a surgeon may perform in response to a life-threatening hemorrhage during or immediately after a cesarean or vaginal delivery.[1] Hemorrhaging may arise due to a uterine rupture following obstructed labor or under conditions of placenta accreta spectrum (PAS) wherein the placenta does not detach spontaneously following childbirth.[2] Peripartum hysterectomy requires trained surgical healthcare providers, the availability of functional blood transfusion services, and intensive care management. A poorly performed hysterectomy can lead to devastating intraoperative, perioperative, and postoperative consequences.[3]

The lack of resources and trained personnel in low-income countries make peripartum hysterectomy particularly challenging to manage. The large number of home births as well as difficulty in reaching tertiary-level hospitals and in receiving appropriate care further affect the outcomes of mothers and of their babies in resource-poor countries.

This brief summarizes a scoping review focused on the provision and experience of care in the context of peripartum hysterectomy in low- and middle-income countries. These two components make up the "process" building block of the World Health Organization (WHO) quality of care framework.[4] This brief also summarizes key facilitators and barriers to appropriate care (evidence-based, high-quality, timely, and at the appropriate levels) in facilities providing peripartum hysterectomy as well as recommendations to strengthen the provision of care and women's experience of this procedure in low- and middle-income countries.

Quality of Care Framework for Maternal and Newborn Health

Since the World Health Organization (WHO) definition of quality of care within the context of maternal and newborn health is broad and multidimensional, WHO issued a framework to operationalize the concept. The process building block of the framework includes **provision** and **experience of care**.

Provision of care is comprised of:
(1) Evidence-based practices for the management of complications
(2) Actionable information systems
(3) Functional referral systems

Experience of care is comprised of:
(1) Effective communication
(2) Respect and dignity
(3) Emotional support

Competent and motivated human resources and essential physical resources are elements of provision and experience of care.

USAID FROM THE AMERICAN PEOPLE
MOMENTUM A Global Partnership for Health and Resilience
MAY 2023

FINDINGS

The initial search yielded 2,991 articles across five electronic databases. Twenty studies (Table 1) resulted after removal of duplicates, abstract and full-text screening, and the addition of one study through snowballing. This includes 11 studies conducted in Africa, 8 in Asia and the Middle East, and 1 global study. Eleven studies documented emergency peripartum hysterectomies. The most frequently reported surgical details included the type of procedure, level of provider expertise, and percent of patients admitted to intensive care (Table 1). Fewer studies included estimated blood loss and operative time.

Table 1. Overview of Studies Included in the Scoping Review

KEY STUDY INFORMATION			STUDY POPULATION				SURGICAL DETAILS REPORTED						
Lead Author	Year	Country	Emergency peripartum hysterectomy	Emergency or elective	>1 patient experiencing near-miss event	Exclusively peripartum hysterectomy patients	Subtotal hysterectomy performed	Level of expertise of surgeon or anesthesiologist	Estimated blood loss reported	Operative time	Surgical complications	>60% of patients experiencing complications	% of patients admitted to intensive care unit
Abasiattai[5]	2013	Nigeria	■			■	■	■			■	■	
Badejoko[6]	2017	Nigeria		■			■	■			■		■
De Plecker[7]	2017	Burundi		■	■			■					
Kaye[8]	2014	Uganda	■			■							
Kidanto[9]	2012	Tanzania	■	■			■	■			■	■	
Maswime[10]	2017	South Africa	■		■	■		■	■	■			■
Mbakwa[11]	2021	Cameroon	■			■	■				■	■	
Mittal[12]	2019	India		■									
Nieto-Calvache[13]	2021	Multiple		■				■					
Norhayati[14]	2017	Malaysia	■		■	■							
Omole-Ohonsi[15]	2012	Nigeria		■			■				■		
Pembe[16]	2012	Tanzania	■			■	■	■	■	■	■	■	■
Saeed[17]	2010	Pakistan		■						■	■	■	
Senturk[18]	2015	Turkey		■							■	■	■
Shaikh[19]	2010	Pakistan	■			■					■	■	
Khaliq Showman[20]	2019	Iraq		■				■	■	■	■		■
Tahmina[21]	2017	India	■			■	■		■		■	■	■
Tuncalp[22]	2012	Ghana	■			■							
Wandabwa[23]	2014	South Africa	■			■	■	■			■	■	■
Yildirim[24]	2020	Turkey		■						■	■		■

LEGEND ■ Included Not included

Half of the studies aimed to capture the frequency or prevalence, indications, risk factors, and/or outcomes of peripartum hysterectomy through cross-sectional designs. Approximately half of the studies explored emergency obstetric conditions for which peripartum hysterectomy is a treatment (e.g., PAS or uterine rupture) or aimed to characterize near-miss events or severe maternal morbidity. All the studies, however, featured descriptions of peripartum hysterectomy provision that were reviewed for the presence of practice or system factors representing quality of care as defined by the WHO framework adapted for peripartum hysterectomy (Table 2). However, only two studies mentioned the routine assessment of women at admission, which is an important element of quality of care as an evidence-based practice for the management of peripartum hysterectomy.

Over half of the studies reported postpartum hemorrhage, PAS, and uterine rupture as indications for peripartum hysterectomy (Table 2). Only two studies reported sepsis as an indication for peripartum hysterectomy. For the 13 studies reporting postpartum hemorrhage as an indication, 5 describe attempting a first-line treatment.[7,10,11,17,24] Although 11 studies reported uterine rupture as an indication, prevention and management details were lacking. Only one study described antibiotic administration for obstructed labor (whose complications, such as uterine rupture, may lead to peripartum hysterectomy and for which antibiotics can prevent infections for patients experiencing ruptured membranes);[23] and only one study mentioned chronic lack of antibiotics.[11] No study mentioned the timing of laparotomy following diagnosis of a rupture or effective use of the partograph to detect obstructed labor. Similarly, only two studies described prenatal diagnosis and appropriate management of PAS.[20,24] Few studies reported on perinatal outcomes, reasons for maternal death, or key surgical details, such as mean operative time or estimated blood loss.

Few studies reported on effective communication, respect and dignity, or emotional support (Table 2). Only five studies described whether effective communication between patients and providers occurred, and two of those only reported on informed consent.[7,21] The other three studies highlighted a lack of explanation from healthcare providers about the reason for surgery, how an absence of clear explanation contributed to patient fear and anxiety, and how patients did not fully understand the information communicated and/or were left with questions. One study reported mixed accounts wherein some patients were pleased with the quality of information provided while others did not feel that information was timely or adequate. The concept of respectful and dignified care was examined in three qualitative studies documenting patients who received and those who did not receive peripartum hysterectomy. Some patients described experiencing harsh treatment from providers and feeling judged and disrespected; however, some reported empathy and attention from providers contributing to a sense of comfort and safety. Two studies described patients receiving emotional support following hysterectomy: one study focusing on a tertiary hospital in Nigeria reported that all hysterectomy patients received counseling after the procedure and one study in Malaysia noted that family members who were able to join the patient during hospitalization provided support.

Barriers

Poor utilization and quality of antenatal care (ANC)[6,9–11,14,17,18,21] and poor-quality intrapartum care emerged as barriers to patients receiving appropriate care.[5,6,8,9,15,16,21,23] Poor quality of ANC may contribute to low rates of utilization of these services,[5,6,15,16,19,21] resulting in failure to identify high-risk conditions,[9,13,17,21] such as scarred uterus.[9] In terms of low-quality intrapartum care, four studies reported protracted home childbirth, sometimes with a traditional birth attendant, with women delaying facility care-seeking, often until seriously ill.[5,8,11,21] One study also reported poor quality of care during institutional childbirth (e.g., inappropriate patient monitoring, failure to use a labor monitoring tool or partogrpah, and ill-consisdered use of oxytocin) and high levels of uterine rupture and missed diagnoses of uterine rupture upon referral to higher-level care.[9]

Table 2. WHO Quality of Care Framework for Maternal and Newborn Health Elements Adapted for Peripartum Hysterectomy

	PROVISION OF CARE												EXPERIENCE OF CARE			PROVISION AND EXPERIENCE OF CARE						
	Evidence-based practices for management of conditions					Actionable information systems				Functional referral systems												
Lead Author	Routine assessment at admission	Indication reported: postpartum hemorrhage	Indication reported: uterine rupture	Indication reported: sepsis	Indication reported: PAS	Perinatal outcomes missing	Reason for maternal death missing	Surgical details missing	Blood transfusions and ICU admissions missing	Weakness in referral system reported	Delays in referral from lower-level facilities	Delays in reaching facilities due to transport	Effective communication	Respect and dignity	Emotional support	HR: Consultants or multi-disciplinary teams operating	HR: Non-specialists/residents doing surgery/anesthesia	Physical resources: cleaning practices	Physical resources: functional blood transfusion services	Physical resources: availability of ICU beds	Physical resources: availability of imaging	Physical resources: availability of operating rooms
Abasiattai		■	■		■			■	■							■						
Badejoko		■	■				■		■								■					
De Plecker	■	■				■						■	■				■	■	■	■		■
Kaye DK										■			■	■								■
Kidanto			■				■	■	■	■						■	■		■			
Maswime		■				■											■		■	■		
Mbakwa		■	■		■	■	■		■													
Mittal					■											■			■	■		
Nieto-Calvache					■	■				■		■				■						
Norhayati	■				■					■	■	■	■	■	■							
Omole-Ohonsi		■	■		■			■	■	■	■				■				■			
Pembe		■	■			■	■			■	■						■			■		
Saeed		■	■		■	■																
Senturk		■	■		■			■											■	■		
Shaikh		■	■		■			■	■	■	■	■										
Khaliq Showman					■											■			■	■	■	
Tahmina		■	■		■			■					■						■	■		
Tuncalp				■									■									
Wandabwa		■	■	■				■	■	■							■			■		
Yildirim		■			■	■	■												■	■	■	

LEGEND ■ Included Not included

Facilitators

Two studies identified a functional internal referral system that allows patients to receive immediate attention upon arrival as a facilitator to obtaining appropriate care, acting on the delays that patients may experience when seeking care.[12,14] Several studies identified the availability of multidisciplinary teams to treat conditions such as PAS,[20] the availability of consultants to perform surgeries and to supervise residents,[5,9,12] and adequate infrastructure, such as blood transfusion services and intensive care unit beds[7,9,24,10,12,15,16,18,20,21,23] as important facilitators to receiving quality care when patients reach the appropriate facility. Respectful care offered by providers rendered services more acceptable according to one qualitative study from Malaysia.[14]

DISCUSSION

The literature revealed several themes related to the provision of care and experience of care of peripartum hysterectomy patients through the application of the WHO Quality of Care Framework. Several articles highlighted weaknesses with information systems and outcomes measurement, ineffective communication between patients and providers, and nonspecialists or residents providing surgery or anesthesia. Key deficits in quality of care were described across the continuum of care, including inadequate recognition of uterine scars during ANC as well as inappropriate monitoring and treatment during labor and delivery—such as limited to no use of labor monitoring tools.

However, many aspects of quality of care were missing from the literature. For example, although many articles reported the indications for peripartum hysterectomy—especially for postpartum hemorrhage, uterine rupture, and PAS—these articles lacked descriptions of first-line treatment, potentially because the studies in this review focused on describing peripartum hysterectomy prevalence, indications, and outcomes. As previously mentioned, only a few studies described experience of care. Indeed, many of the studies included in this review used cross-sectional designs and relied on record reviews, which may lack detailed information on quality of care. Therefore, the implications and results of this review should be interpreted with caution.

Due to the first two delays outlined in the Thaddeus and Maine three delays model (i.e., decision to seek care amd delay in reaching care),[25] patients may be reaching tertiary-level facilities in worse condition than if they sought care immediately. For example, one study from Nigeria noted that most women undergoing hysterectomy labored at home with traditional birth attendants, reaching the facility in hypovolemic shock.[15] Similarly, a study in Pakistan reported that half of hysterectomy patients did not receive early referral to higher-level facilities.[19] These factors influence the outcome of care provided.[26] Only three studies reported a delay in receiving prompt treatment (i.e., surgery) in the facility where peripartum hysterectomy was performed, the third delay as categorized by Thaddeus and Maine.[8,13,22] This may reflect unwillingness or inability to investigate in-hospital factors that hinder rapid access to high-quality peripartum hysterectomy. Still, the studies reported many factors that severely impact the provision of essential life-saving maternal and newborn care, especially at tertiary-level facilities. These include the dearth of technically competent human resources. For example, surgery and anesthesiology are often reportedly performed by residents or nonspecialists.[6,7,9,10,16,23] Essential infrastructure, such as effective blood services or availability of antibiotics, is critical to assuring the appropriate management of obstetric conditions through peripartum hysterectomy. Therefore, the chronic lack of infrastructure at tertiary-level facilities, as some studies reported,[6,9,11] only serves to amplify quality of care challenges.

The experience of care, reported qualitatively in three studies, pointed to poor patient-provider communication, including incomplete information being relayed and patients' feelings of judgment and disrespect. These are damaging in and of themselves, but also could deter future health service utilization.

RECOMMENDATIONS

Based on these findings, key recommendations for policymakers, implementers, and researchers include:

- Conduct further research of patients' experiences undergoing peripartum hysterectomy to help develop effective communication strategies, ensure respectful practices, and offer appropriate emotional support to mitigate the psychological and social consequences that accompany the loss of future fertility and the possible long-term health sequelae of this major surgery.
- Improve the quality of ANC, particularly healthcare provider competencies in recognizing high-risk pregnancies that may benefit from early contact with higher levels of care (particularly patients with prior cesarean sections).
- Improve intrapartum care at peripheral facility levels and build healthcare provider capacities to rapidly detect and initiate management of obstetric complications, such as postpartum hemorrhage or obstructed labor, and to seek early referrals.
- Strengthen referral systems and establish appropriate referral protocols for patients with intractable hemorrhage, obstructed labor, or suspected PAS between non-tertiary and tertiary-level facilities.
- Enhance providers' surgical capabilities at tertiary-level facilities to safely conduct peripartum hysterectomy, especially in cases of PAS, through on-site training, simulation, and remote supervision.
- In areas where there is a specialized workforce shortage, expand access to surgical care through task-shifting, with appropriate training and supervision of nonspecialists or residents.[27]
- Support audits to assess the details of obstetric management prior to the hysterectomy, the decision-to-surgery interval, complications, and outcomes.
- Conduct qualitative research on barriers and facilitators for delivery of optimal peripartum hysterectomy, as previous studies have done for cesarean section.[28]

REFERENCES

1. Schaap T, Bloemenkamp K, Deneux-Tharaux C, et al. (2019). Defining definitions: a Delphi study to develop a core outcome set for conditions of severe maternal morbidity. *BJOG*, *126*(3), 394-401. doi:10.1111/1471-0528.14833
2. Morlando M, Collins S. (2020). Placenta accreta spectrum disorders: Challenges, risks, and management strategies. *Int J Womens Health*, *12*, 1033-1045. doi:10.2147/IJWH.S224191
3. Wright JD, Devine P, Shah M, et al. (2010). Morbidity and mortality of peripartum hysterectomy. *Obstet Gynecol*, *115*(6), 1187-1193. doi:10.1097/AOG.0B013E3181DF94FB
4. Tunçalp Ö, Were WM, MacLennan C, et al. (2015). Quality of care for pregnant women and newborns-the WHO vision. *BJOG*., *122*(8), 1045-1049. doi:10.1111/1471-0528.13451
5. Abasiattai AM, Umoiyoho AJ, Utuk NM, Inyang-Etoh EC, Asuquo OP. (2013). Emergency peripartum hysterectomy in a tertiary hospital in southern Nigeria. *Pan Afr Med J*. doi:10.11604/PAMJ.2013.15.60.1879
6. Badejoko OO, Awowole IO, Ijarotimi AO, Badejoko BO, Loto OM, Ogunniyi SO. (2013). Obstetric hysterectomy: trend and outcome in Ile-Ife, Nigeria. *J Obstet Gynaecol*., *33*(6), 581-584. doi:10.3109/01443615.2013.786032
7. De Plecker E, Zachariah R, Kumar AMV, et al. (2017) Emergency obstetric care in a rural district of Burundi: What are the surgical needs? *PLoS One*, *12*(2), doi:10.1371/JOURNAL.PONE.0170882
8. Kaye DK, Kakaire O, Nakimuli A, Osinde MO, Mbalinda SN, Kakande N. (2014). Lived experiences of women who developed uterine rupture following severe obstructed labor in Mulago hospital, Uganda. *Reprod Health*, *11*(1). doi:10.1186/1742-4755-11-31
9. Kidanto HL, Mwampagatwa I, Van roosmalen J. (2012). Uterine rupture: A retrospective analysis of causes, complications and management outcomes at Muhimbili National Hospital in Dar es Salaam, Tanzania. *Tanzan J Health Res*., *14*(3). doi:10.4314/thrb.v14i3.9
10. Maswime S, Buchmann EJ. (2017). Why women bleed and how they are saved: A cross-sectional study of caesarean section near-miss morbidity. *BMC Pregnancy Childbirth*, *17*(1), 1-6. doi:10.1186/S12884-016-1182-7/TABLES/3

11. Mbakwa MR, Tendongfor N, Ngunyi YL, Ngek ESN, Alemkia F, Egbe TO. (2021). Indications and outcomes of emergency obstetric hysterectomy; a 5-year review at the Bafoussam Regional Hospital, Cameroon. *BMC Pregnancy Childbirth*, *21*(1). doi:10.1186/s12884-021-03797-3
12. Mittal P, Suri J, Pruthi N, Pandey D, Bharti R. (2019). Comparison of placenta accreta spectrum disorders diagnosed in intrapartum and antepartum period— A three year experience in a tertiary referral unit of India. *Eur J Obstet Gynecol Reprod Biol*. 236:41-45. doi:10.1016/J.EJOGRB.2019.03.001
13. Nieto-Calvache AJ, Palacios-Jaraquemada JM, Osanan G, et al.(2021). Lack of experience is a main cause of maternal death in placenta accreta spectrum patients. *Acta Obstet Gynecol Scand, 100*(8), 1445-1453. doi:10.1111/AOGS.14163
14. Norhayati MN, Hazlina NHN, Asrenee AR, Sulaiman Z. (2017). The experiences of women with maternal near miss and their perception of quality of care in Kelantan, Malaysia: A qualitative study. *BMC Pregnancy Childbirth*., *17*(1), 1-14. doi:10.1186/S12884-017-1377-6/TABLES/3
15. Omole-Ohonsi A, Taiwo Olayinka H. (2012). Emergency Peripartum Hysterectomy in a Developing Country. *J Obstet Gynaecol Canada*., *34*(10), 954-960. doi:10.1016/S1701-2163(16)35409-3
16. Pembe AB, Wangwe PJT, Massawe SN. (2012). Emergency peripartum hysterectomies at Muhimbili National Hospital, Tanzania: a review of cases from 2003 to 2007. *Tanzan J Health Res*., *14*(1). doi:10.4314/THRB.V14I1.7
17. Saeed F, Khalid R, Khan A, Masheer S, Rizvi JH. (2010). Peripartum hysterectomy: A ten-year experience at a tertiary care hospital in a developing country. *Trop Doct*., *40*(1), 18-21. doi:10.1258/td.2009.080245
18. Senturk MB, Cakmak Y, Guraslan H, Dogan K. (2015). Emergency peripartum hysterectomy: 2-year experiences in non-tertiary center. *Arch Gynecol Obstet, 292*(5), 1019-1025. doi:10.1007/S00404-015-3740-Z
19. Shaikh NB, Shaikh S, Shaikh JM. (2010). Morbidity and mortality associated with obstetric hysterectomy. *J Ayub Med Coll Abbottabad*, *22*(2). http://www.ayubmed.edu.pk/JAMC/PAST/22-2/Najma.pdf. Accessed June 21, 2022.
20. Khaliq Showman HA, Alizzi FJ, Helmi ZR, Ismael VA, Fawzi HA. (2019). Placenta accrete spectrum disorders: A single centre experience over four years in the view of international guidelines. *J Pak Med Assoc*., *69*, S68-S72.
21. Tahmina S, Daniel M, Gunasegaran P. (2017). Emergency Peripartum Hysterectomy: A 14-Year Experience at a Tertiary Care Centre in India. *J Clin Diagn Res*, *11*(9). doi:10.7860/JCDR/2017/26769.10613
22. Tunçalp Ö, Hindin MJ, Adu-Bonsaffoh K, Adanu R. (2012). Listening to Women's Voices: The Quality of Care of Women Experiencing Severe Maternal Morbidity, in Accra, Ghana. *PLoS One*, *7*(8). doi:10.1371/JOURNAL.PONE.0044536
23. Wandabwa JN, Businge C, Longo-Mbenza B, Mdaka ML, Kiondo P. (2013). Peripartum hysterectomy: two years experience at Nelson Mandela Academic hospital, Mthatha, Eastern Cape South Africa. *Afr Health Sci*., *13*(2), 469-474. doi:10.4314/AHS.V13I2.38
24. Yildirim GY, Koroglu N, Akca A, et al. (2021). What is new in peripartum hysterectomy? A seventeen year experience in a tertiary hospital. *Taiwan J Obstet Gynecol*., *60*(1), 95-98. doi:10.1016/J.TJOG.2020.11.014
25. Thaddeus S, Maine D. (1994). Too far to walk: maternal mortality in context. *Soc Sci Med*., *38*(8), 1091-1110. doi:10.1016/0277-9536(94)90226-7
26. Rosenfield A, Maine D. (1985). Maternal mortality--a neglected tragedy. Where is the M in MCH? *Lancet*, *2*(8446), 83-85. doi:10.1016/s0140-6736(85)90188-6
27. Chen L, Evans T, Anand S, et al. (2004). Human resources for health: overcoming the crisis. *Lancet, 364*(9449), 1984-1990. doi:10.1016/S0140-6736(04)17482-5
28. Melman S, Schreurs RHP, Dirksen CD, et al. (2017). Identification of barriers and facilitators for optimal cesarean section care: perspective of professionals. *BMC Pregnancy Childbirth*, *17*(1). doi:10.1186/S12884-017-1416-3

MOMENTUM Safe Surgery in Family Planning and Obstetrics project is funded by the U.S. Agency for International Development (USAID) as part of the MOMENTUM suite of awards and implemented by EngenderHealth with IntraHealth International, Johns Hopkins Center for Communications Programs, and the London School of Hygiene & Tropical Medicine under USAID cooperative agreement #7200AA20CA00011. For more about MOMENTUM, visit www.usaidmomentum.org. The contents of this brief are the sole responsibility of EngenderHealth and do not necessarily reflect the views of USAID or the U.S. government.

Acknowledgements

This brief was written by Farhad Khan and Sara Malakoff, using source material from the scoping review authored by Francesca Conway (Exploring Provision of Care and Experience of Care in Women Undergoing Peripartum Hysterectomy in Low-and-Middle Income Countries: A Scoping Review). This brief was edited by Amy Agarwal. We thank Francesca Conway, Loveday Penn-Kekana, Renae Stafford, Karen Levin, Vandana Tripathi, Veronique Filippi and the United States Agency for International Development (USAID) for their review. The full report from which this brief was adapted is available on request to MOMENTUM Safe Surgery in Family Planning and Obstetrics.