



<https://journal.bengkuluinstitute.com/index.php/JKM>

## Managing Postpartum Hemorrhage in Remote and Border Areas: A Qualitative Study of Midwives' Experiences

### Penanganan Perdarahan Postpartum di Daerah Terpencil dan Perbatasan: Studi Kualitatif tentang Pengalaman Bidan

Yolanda Montessori\* Silvia Finida Hannisa, Paskalia Tri Kurniati, Yunida Haryanti, Lea Masan, Rizki Amartani

Program Studi Ilmu Kebidanan Sekolah Tinggi Ilmu Kesehatan Kapuas Raya, Sintang, Kalimantan Barat, Indonesia.

\*Corresponding Author: [montessoriyolanda@gmail.com](mailto:montessoriyolanda@gmail.com)

---

#### ABSTRAK

##### Article History:

Received: March 25, 2026

Revised: April 28, 2026

Accepted: May 18, 2026

---

##### Kata kunci:

bidan; daerah perbatasan; daerah terpencil; fenomenologi; perdarahan postpartum

**Latar Belakang:** Perdarahan postpartum merupakan salah satu penyebab utama kematian ibu di dunia, terutama di negara berpenghasilan rendah dan menengah. Bidan yang bertugas di daerah terpencil dan perbatasan memegang peranan penting dalam penanganan kegawatdaruratan obstetri, namun sering menghadapi keterbatasan sumber daya, akses fasilitas kesehatan, serta hambatan geografis yang memengaruhi kualitas pelayanan. **Tujuan:** Penelitian ini bertujuan untuk mengeksplorasi pengalaman bidan dalam penanganan kegawatdaruratan perdarahan postpartum di daerah terpencil dan perbatasan Kabupaten Sintang, Kalimantan Barat. **Metode:** Penelitian ini menggunakan desain kualitatif dengan pendekatan fenomenologi. Sebanyak tujuh bidan dipilih menggunakan teknik snowball sampling. Data dikumpulkan melalui wawancara semi-terstruktur dan dianalisis menggunakan analisis tematik Braun dan Clarke. Keabsahan data dijamin melalui kriteria credibility, transferability, dependability, dan confirmability berdasarkan kerangka Lincoln dan Guba. **Hasil:** Hasil penelitian mengidentifikasi lima tema utama, yaitu: (1) pengenalan dini perdarahan postpartum; (2) penatalaksanaan kegawatdaruratan; (3) tantangan dalam pelayanan di daerah terpencil dan perbatasan; (4) pengambilan keputusan klinis dan tanggung jawab profesional; serta (5) adaptasi dan resiliensi bidan. Temuan menunjukkan bahwa keberhasilan penanganan perdarahan postpartum tidak hanya bergantung pada kompetensi klinis bidan, tetapi juga pada kemampuan mengambil keputusan secara cepat, beradaptasi dengan keterbatasan sumber daya, serta mengoordinasikan sistem rujukan secara efektif. **Simpulan:** Penanganan kegawatdaruratan perdarahan postpartum di daerah terpencil dan perbatasan memerlukan kombinasi kompetensi klinis, pengambilan keputusan yang tepat, kemampuan adaptasi, serta sistem rujukan yang responsif. Penguatan kapasitas bidan dan pemerataan sumber daya kesehatan menjadi faktor penting dalam meningkatkan kualitas

*pelayanan obstetri emergensi dan menurunkan angka kematian ibu.*

*Saran:* Pemerintah dan penyelenggara layanan kesehatan disarankan untuk meningkatkan pelatihan berkelanjutan bagi bidan, memperkuat sistem rujukan obstetri, serta memastikan pemerataan ketersediaan tenaga kesehatan, peralatan, obat-obatan, dan fasilitas penunjang di daerah terpencil dan perbatasan. Penelitian selanjutnya diharapkan dapat mengeksplorasi perspektif pemangku kepentingan lainnya serta mengevaluasi efektivitas intervensi dalam memperkuat pelayanan kegawatdaruratan obstetri di wilayah dengan keterbatasan sumber daya.

---

#### ABSTRACT

**Keywords:**

midwives; border areas; remote areas; phenomenology; postpartum hemorrhage

**Background:** Postpartum hemorrhage remains one of the leading causes of maternal mortality worldwide, particularly in low- and middle-income countries. Midwives working in remote and border areas play a critical role in managing obstetric emergencies; however, they frequently encounter limited resources, restricted access to healthcare facilities, and geographical barriers that affect the quality of maternal healthcare services. **Objective:** This study aimed to explore midwives' experiences in managing postpartum hemorrhage emergencies in remote and border areas of Sintang Regency, West Kalimantan. **Methods:** This study employed a qualitative research design with a phenomenological approach. Seven midwives were selected using the snowball sampling technique. Data were collected through semi-structured interviews and analyzed using Braun and Clarke's thematic analysis. The trustworthiness of the data was ensured through the criteria of credibility, transferability, dependability, and confirmability based on the Lincoln and Guba framework. **Results:** The findings identified five major themes: (1) early recognition of postpartum hemorrhage; (2) emergency management of postpartum hemorrhage; (3) challenges in providing care in remote and border areas; (4) clinical decision-making and professional responsibility; and (5) midwives' adaptation and resilience. The results indicate that successful management of postpartum hemorrhage depends not only on midwives' clinical competence but also on their ability to make rapid clinical decisions, adapt to limited resources, and effectively coordinate referral systems. **Conclusion:** Effective management of postpartum hemorrhage emergencies in remote and border areas requires a combination of clinical competence, sound clinical decision-making, adaptive capacity, and responsive referral systems. Strengthening midwives' capacity and ensuring equitable distribution of healthcare resources are essential to improving the quality of emergency obstetric care and reducing maternal mortality in underserved areas. **Suggestion:** Governments and healthcare providers are encouraged to strengthen continuous professional training for midwives, improve obstetric referral systems, and ensure equitable access to healthcare personnel, essential medical equipment, medications, and supporting facilities in remote and border areas. Future studies are recommended to explore the perspectives of other key stakeholders and evaluate the effectiveness of interventions aimed at strengthening emergency obstetric care in resource-limited settings.

---



## INTRODUCTION

Postpartum hemorrhage (PPH) remains the leading cause of maternal mortality worldwide, accounting for approximately 30% of all maternal deaths and causing nearly 86,000 maternal deaths annually (Nigussie et al., 2022). Although most cases of PPH are preventable through timely recognition and appropriate emergency obstetric care, it continues to disproportionately affect women in low- and middle-income countries (LMICs), where healthcare systems often face shortages of skilled personnel, essential medicines, blood products, and effective referral mechanisms (World Health Organization, 2025). The persistent burden of PPH highlights the urgent need to strengthen emergency maternal healthcare services, particularly in geographically disadvantaged settings (Wei et al., 2025).

Indonesia is one of the developing countries in Southeast Asia that continues to experience a relatively high maternal mortality ratio (MMR) (Syairaji et al., 2024). According to the 2025 Intercensal Population Survey (SUPAS), the MMR declined from 189 deaths per 100,000 live births in 2020 to 144 deaths per 100,000 live births in 2025 (Utarini, 2022). Although this represents substantial progress, the current MMR remains considerably higher than the national target of 77 deaths per 100,000 live births established in the 2025–2029 National Medium-Term Development Plan (RPJMN) and the Sustainable Development Goals (SDGs) target of fewer than 70 maternal deaths per 100,000 live births by 2030 (WHO, 2021). Achieving these targets requires sustained improvements in emergency obstetric care, particularly for preventable causes of maternal death (WHO, 2021).

Postpartum hemorrhage is commonly attributed to four major causes, known as the "4Ts": uterine atony (tone), genital tract trauma (trauma), retained placental tissue (tissue), and coagulation disorders (thrombin) (Hamdan et al., 2025). Among these, uterine atony accounts for approximately 80% of all PPH cases, followed by trauma (13%), retained tissue (5%), and coagulation disorders (2%) (Sadiku et al., 2024). Successful management depends on early diagnosis, prompt administration of uterotonic agents, effective resuscitation, continuous monitoring, and timely referral to higher-level healthcare facilities (Mgboro, 2025).

Women living in LMICs are particularly vulnerable to severe complications from PPH because of limited access to quality maternal healthcare, shortages of skilled birth attendants, inadequate emergency transportation, insufficient blood transfusion services, and delays in referral and clinical decision-making (Borovac-Pinheiro et al., 2021). These challenges are more pronounced in remote and border regions, where geographical barriers, long travel distances, and constrained health resources frequently delay life-saving interventions (Mohamed et al., 2025).

Sintang District, located in the eastern part of West Kalimantan Province and bordering Sarawak, Malaysia, represents one of Indonesia's remote and border regions facing considerable healthcare challenges (Rachmatullah et al., 2020). Approximately 80% of West Kalimantan consists of remote and difficult-to-reach areas, resulting in unequal distribution of healthcare facilities, shortages of health professionals, and limited healthcare financing (Arifin & Rupita, 2021). These conditions affect the accessibility and quality of maternal healthcare services, particularly emergency obstetric care for women experiencing postpartum hemorrhage (Borovac-Pinheiro et al., 2021).

The challenges of managing postpartum hemorrhage in geographically isolated settings can be understood through the Three Delays Model, which explains that maternal mortality is influenced by delays in deciding to seek healthcare, delays in reaching appropriate healthcare facilities, and delays in receiving adequate treatment after arrival (Mariama S. Dampha, 2023). In remote and border areas, the second and third delays are often intensified by transportation barriers,

inadequate communication systems, shortages of healthcare workers, and limited availability of emergency obstetric resources (Daniels & Abuosi, 2020). Consequently, midwives working in these settings frequently face complex clinical and logistical challenges while attempting to provide timely emergency care (Juqu et al., 2026).

Previous studies have extensively investigated the epidemiology, risk factors, prevention strategies, and clinical management of postpartum hemorrhage (Yunas et al., 2025). Other studies have examined the availability of emergency obstetric services and health system barriers in rural healthcare settings. However, relatively few qualitative studies have explored the experiences of midwives in managing postpartum hemorrhage emergencies, particularly in remote and border areas where healthcare delivery is strongly influenced by geographical isolation, limited resources, and prolonged referral pathways (Campbell et al., 2023). Existing evidence therefore provides limited understanding of how midwives adapt their clinical decision-making and emergency management practices within these unique contexts (Musie et al., 2025).

This study addresses these gaps by exploring the lived experiences of midwives providing emergency postpartum hemorrhage management in remote and border areas of Sintang District, West Kalimantan, Indonesia. Unlike previous studies that primarily focused on clinical outcomes or health system performance, this research emphasizes the perspectives of frontline midwives and examines how contextual factors shape emergency obstetric care. The findings are expected to contribute to the development of context-specific maternal health policies, strengthen emergency referral systems, and improve the preparedness of healthcare providers working in geographically underserved areas. Therefore, this study aims to explore the experiences of midwives in managing postpartum hemorrhage emergencies in remote and border areas of Sintang District, West Kalimantan, Indonesia.

## **METHOD**

### **Research Design and Approach**

This study employed a qualitative research design with a phenomenological approach to explore the lived experiences of midwives in managing postpartum hemorrhage emergencies in remote and border areas. A phenomenological design was considered appropriate because it enables an in-depth understanding of participants' perceptions, experiences, and meanings related to providing emergency obstetric care under geographically challenging conditions.

### **Research Setting and Period**

The study was conducted in remote and border areas of Sintang District, West Kalimantan Province, Indonesia. Sintang is one of the districts located near the Indonesia–Malaysia border and is characterized by difficult geographical access, dispersed settlements, and limited healthcare resources. Data collection was conducted from July to August 2025.

### **Population and Sample**

Seven registered midwives participated in this study. Participants were recruited using snowball sampling because of the limited number of midwives who had direct experience managing postpartum hemorrhage in remote and border settings. The inclusion criteria were: registered midwives working in remote or border primary healthcare facilities in Sintang District; having direct experience in preventing or managing postpartum hemorrhage; willing to participate voluntarily and provide informed consent. Midwives who had no experience managing postpartum hemorrhage or declined audio recording were excluded. Recruitment continued until data saturation was achieved, indicated by the absence of new themes emerging from subsequent interviews.

### **Study Focus**

The study focused on exploring midwives' experiences in recognizing, managing, and making clinical decisions during postpartum hemorrhage emergencies, as well as identifying



challenges, adaptive strategies, and professional resilience while working in geographically isolated healthcare settings.

### **Data Collection Methods and Instruments**

Data were collected through face-to-face semi-structured interviews using an interview guide developed from previous literature on postpartum hemorrhage management and emergency obstetric care. Open-ended questions encouraged participants to describe their experiences in identifying postpartum hemorrhage, providing emergency interventions, making referral decisions, overcoming contextual barriers, and adapting to resource limitations.

Each interview lasted approximately 40–55 minutes and was audio-recorded with participants' permission. Field notes were also documented to capture contextual observations and non-verbal expressions. Audio recordings were transcribed verbatim immediately after each interview to maintain data accuracy.

### **Research Procedures**

Eligible participants were initially identified through local professional networks and subsequently recruited using snowball sampling. Before each interview, participants received information regarding the study objectives, confidentiality procedures, voluntary participation, and their right to withdraw at any time without consequences. Written informed consent was obtained prior to data collection. Interview transcripts were reviewed alongside audio recordings to ensure transcription accuracy. Data collection and preliminary analysis were conducted concurrently, allowing emerging concepts to inform subsequent interviews until thematic saturation was reached.

### **Data Analysis**

Data were analyzed using Braun and Clarke's six-step thematic analysis, consisting of data familiarization, initial coding, searching for themes, reviewing themes, defining and naming themes, and producing the final report. Throughout the analytical process, themes were continuously refined through iterative comparison across participants' narratives to ensure that they accurately reflected the lived experiences of midwives managing postpartum hemorrhage emergencies.

### **Trustworthiness**

Trustworthiness was established using Lincoln and Guba's framework, including credibility, transferability, dependability, and confirmability. Credibility was enhanced through prolonged engagement with participants and member checking of interview summaries. Transferability was supported by providing detailed descriptions of the study context and participant characteristics. Dependability was maintained through an audit trail documenting methodological decisions, while confirmability was strengthened by maintaining reflexive field notes and regular discussions among the research team during data analysis.

### **Ethical Considerations**

Ethical approval for this study was obtained from the Health Research Ethics Committee of Fatima Hospital, Ketapang, Indonesia. Written informed consent was obtained from all participants before data collection. Participants' identities were protected through anonymization using participant codes (P1–P7), and all research data were treated confidentially in accordance with established ethical principles.

## RESULTS AND DISCUSSION

Seven midwives working in remote and border areas of Sintang District participated in this study. Participants ranged in age from 28 to 47 years and had between 5 and 22 years of professional experience. All participants had previously managed postpartum hemorrhage cases and were actively involved in providing maternal healthcare services in primary healthcare facilities located in geographically isolated communities.

Table 1. Characteristics of Participants

| Participant | Age (years) | Education            | Years of Experience | Workplace               |
|-------------|-------------|----------------------|---------------------|-------------------------|
| P1          | 29          | Diploma in Midwifery | 6                   | Community Health Center |
| P2          | 35          | Bachelor's Degree    | 12                  | Community Health Center |
| P3          | 41          | Diploma in Midwifery | 18                  | Village Health Post     |
| P4          | 32          | Bachelor's Degree    | 8                   | Community Health Center |
| P5          | 47          | Diploma in Midwifery | 22                  | Community Health Center |
| P6          | 30          | Professional Midwife | 7                   | Village Health Post     |
| P7          | 38          | Bachelor's Degree    | 15                  | Community Health Center |

Table 2. Themes and Subthemes Identified Through Thematic Analysis

| Theme   | Subthemes   |
|---|---|
| Theme 1. Early Recognition of Postpartum Hemorrhage               | Monitoring postpartum mothers; Identifying danger signs                       |
| Theme 2. Clinical Management During Emergencies                   | Immediate interventions; Stabilization before referral                        |
| Theme 3. Challenges in Remote and Border Areas                    | Limited medical supplies; Transportation barriers; Communication difficulties |
| Theme 4. Clinical Decision-Making and Professional Responsibility | Independent decision-making; Team collaboration                               |
| Theme 5. Adaptation and Professional Resilience                   | Resource optimization; Emotional resilience; Commitment to maternal safety    |

### Theme 1. Early Recognition of Postpartum Hemorrhage

Participants consistently emphasized that continuous monitoring during the immediate postpartum period was essential for early identification of postpartum hemorrhage. They described routine assessment of uterine contraction, vaginal bleeding, maternal vital signs, and level of consciousness as critical components of postpartum care.

*"Whenever a mother delivers, I remain with her during the first two hours because excessive bleeding can occur very quickly. I continuously monitor the uterine contraction and the amount of blood loss." (P2)*

Another participant highlighted that recognizing subtle clinical changes often determined whether emergency interventions could be initiated promptly.

*"Sometimes the bleeding is not immediately obvious. We have to pay attention to the mother's pulse, blood pressure, and uterine tone before her condition deteriorates." (P6)*

The present study highlights that continuous postpartum monitoring was considered the cornerstone of early recognition of postpartum hemorrhage (PPH). Participants emphasized frequent assessment of uterine tone, vaginal bleeding, and maternal vital signs during the immediate



postpartum period to facilitate timely intervention. These findings are consistent with international clinical recommendations, which emphasize that early identification and prompt management of PPH substantially reduce maternal morbidity and mortality (Escobar et al., 2022). The World Health Organization recommends systematic postpartum surveillance during the first hours after birth because most severe hemorrhagic complications occur during this period (Dol et al., 2022).

The predominance of uterine assessment reported by participants also aligns with the evidence presented by (Yunas et al., 2025), who identified uterine atony as the leading cause of postpartum hemorrhage. Consequently, early assessment of uterine contraction remains one of the most effective clinical strategies for preventing severe bleeding (Hersh et al., 2024). From a theoretical perspective, these findings can be explained using the Emergency Obstetric Care (EmOC) framework, which emphasizes that timely recognition and immediate first-line management constitute essential components of comprehensive emergency obstetric services (Evi & Busman, 2026). Midwives working in primary healthcare settings therefore play a critical role in initiating life-saving interventions before referral becomes necessary.

### **Theme 2. Clinical Management During Emergencies**

All participants described following standard emergency management procedures once postpartum hemorrhage was identified. Initial interventions included uterine massage, administration of uterotonic drugs, intravenous fluid resuscitation, and close monitoring while preparing referral if necessary.

*"The first priority is always to stop the bleeding. We perform uterine massage, administer oxytocin, establish intravenous access, and continue monitoring while arranging referral." (P5)*

Participants emphasized that rapid decision-making was essential because delays could significantly worsen maternal outcomes. Participants described following standard emergency procedures, including uterine massage, administration of uterotonic agents, intravenous fluid resuscitation, and patient stabilization before referral. These practices are highly consistent with current WHO recommendations for first-line management of postpartum hemorrhage, which prioritize rapid administration of uterotonics, assessment of bleeding source, fluid replacement, and continuous monitoring (World Health Organization, 2025).

Previous studies conducted in low- and middle-income countries have similarly demonstrated that adherence to standardized PPH management protocols improves maternal outcomes despite limitations in healthcare resources (Aimagambetova et al., 2024). However, several studies also indicate that successful implementation depends largely on the availability of trained healthcare providers and essential medicines (WHO, 2020).

The findings suggest that midwives possess adequate clinical competence in implementing emergency protocols. Nevertheless, effective management extends beyond technical skills and requires rapid clinical judgment under stressful circumstances. This observation supports the concept of clinical decision-making, in which healthcare professionals continuously integrate clinical assessment, experience, and contextual information to determine appropriate interventions (Musen et al., 2021).

### **Theme 3. Challenges in Remote and Border Areas**

One of the most frequently discussed themes involved geographical and logistical barriers. Participants described long travel distances, poor road conditions, limited transportation, shortages

of emergency supplies, and communication difficulties as major obstacles during postpartum hemorrhage management.

*"Sometimes the ambulance cannot reach the village because of damaged roads. During the rainy season, transportation becomes even more difficult." (P3)*

Another participant explained that prolonged referral times required midwives to stabilize patients for extended periods.

*"We often have to manage the patient for several hours before transportation becomes available. During that time, we do everything possible to keep the mother stable." (P1)*

One of the most significant findings of this study concerns the multiple barriers experienced by midwives while providing emergency obstetric care in remote and border areas. Geographic isolation, inadequate transportation infrastructure, shortages of essential medicines, and prolonged referral times were repeatedly identified as major challenges.

These findings are consistent with previous qualitative studies conducted in resource-limited settings, which reported that distance to referral hospitals, lack of transportation, poor communication systems, and limited availability of blood transfusion services contribute substantially to delays in maternal emergency care (Masaba et al., 2022). Similar challenges have also been documented across rural regions of Sub-Saharan Africa and Southeast Asia, where healthcare providers frequently encounter difficulties in transferring obstetric emergencies to higher-level facilities (Ameyaw et al., 2020).

The findings are particularly well explained by the Three Delays Model proposed by Thaddeus and Maine (Actis Danna et al., 2020). The second delay (delay in reaching healthcare facilities) and the third delay (delay in receiving appropriate treatment) appear especially relevant in geographically isolated settings such as Sintang District. Poor road conditions, long travel distances, and limited transportation increase the likelihood that women with postpartum hemorrhage will experience delayed access to comprehensive emergency obstetric care, thereby increasing the risk of severe complications and maternal mortality.

#### **Theme 4. Clinical Decision-Making and Professional Responsibility**

Participants described feeling a strong professional responsibility when managing obstetric emergencies in isolated communities. Because physicians were frequently unavailable, midwives often had to make immediate clinical decisions independently while coordinating referral services.

*"Most of the time we are the only healthcare provider available. We cannot wait for someone else to decide, so we must act immediately according to the clinical situation." (P4)*

Several participants also emphasized the importance of teamwork and communication with referral hospitals. The present study demonstrates that midwives frequently assume independent responsibility for emergency clinical decision-making because physicians are often unavailable in remote healthcare facilities. Participants described balancing immediate clinical interventions with decisions regarding referral timing while simultaneously coordinating available healthcare resources.

This finding is comparable to previous research reporting that rural midwives often practice with a high degree of professional autonomy due to workforce shortages (Adatara et al., 2021). Studies have shown that increased autonomy can improve responsiveness during emergencies, provided that midwives receive adequate training, supportive supervision, and opportunities for continuing professional development (Reddy et al., 2022).



Benner's Novice to Expert Theory offers an additional perspective for interpreting these findings. According to Benner, clinical expertise develops through accumulated experience, enabling practitioners to recognize subtle clinical cues and make intuitive yet evidence-informed decisions during complex situations (Soola et al., 2022). The confidence expressed by experienced participants may therefore reflect progression toward expert clinical practice.

### **Theme 5. Adaptation and Professional Resilience**

Despite limited resources, participants demonstrated considerable adaptability and commitment to providing safe maternal care. They described developing practical strategies to overcome resource shortages, strengthening communication networks, and continuously improving their clinical competencies through self-learning and professional training.

*"Working in remote areas teaches us to remain calm and make the best use of the resources available. Our priority is always the safety of the mother." (P7)*

Participants also described emotional challenges associated with managing life-threatening emergencies; however, they viewed these experiences as opportunities for professional growth and reinforced commitment to serving women in underserved communities. Participants described adapting to resource limitations by optimizing available equipment, strengthening teamwork, and maintaining strong professional commitment to maternal safety. These adaptive behaviors demonstrate resilience among healthcare providers working under challenging circumstances.

Previous studies have similarly found that resilience among rural healthcare professionals is influenced by professional commitment, peer support, continuous learning, and organizational support (Huey & Palaganas, 2020). In remote healthcare settings, resilience contributes not only to provider well-being but also to the continuity and quality of maternal healthcare services (Blessing Agbaza-Mogbojuri & Angela O. Onwubuyah, 2023).

From the perspective of Resilience Theory, adaptive coping strategies enable healthcare providers to maintain effective performance despite environmental adversity (Iflaifel et al., 2020). The present findings suggest that strengthening resilience should be considered an important component of capacity-building programs for midwives working in geographically underserved regions.

### **CONCLUSION**

This study highlights that midwives working in remote and border areas play a pivotal role in managing postpartum hemorrhage despite facing substantial geographical, logistical, and resource-related challenges. Their experiences demonstrate that effective postpartum hemorrhage management relies not only on clinical competence but also on timely decision-making, professional resilience, adaptive problem-solving, and efficient referral coordination.

### **RECOMMENDATIONS**

These findings underscore the importance of strengthening emergency obstetric care systems through continuous capacity building, improved referral networks, and equitable allocation of healthcare resources to support midwives in geographically underserved settings and ultimately contribute to reducing preventable maternal mortality.

## REFERENCES

- Actis Danna, V., Bedwell, C., Wakasiaka, S., & Lavender, T. (2020). Utility of the three-delays model and its potential for supporting a solution-based approach to accessing intrapartum care in low- and middle-income countries. A qualitative evidence synthesis. *Global Health Action*, 13(1). <https://doi.org/10.1080/16549716.2020.1819052>
- Adatara, P., Amooba, P. A., Afaya, A., Salia, S. M., Avane, M. A., Kuug, A., Maalman, R. S.-E., Atakro, C. A., Attachie, I. T., & Atachie, C. (2021). Challenges experienced by midwives working in rural communities in the Upper East Region of Ghana: a qualitative study. *BMC Pregnancy and Childbirth*, 21(1), 287. <https://doi.org/10.1186/s12884-021-03762-0>
- Aimagambetova, G., Bapayeva, G., Sakhipova, G., & Terzic, M. (2024). Management of Postpartum Hemorrhage in Low- and Middle-Income Countries: Emergency Need for Updated Approach Due to Specific Circumstances, Resources, and Availabilities. *Journal of Clinical Medicine*, 13(23), 7387. <https://doi.org/10.3390/jcm13237387>
- Ameyaw, E. K., Njue, C., Tran, N. T., & Dawson, A. (2020). Quality and women's satisfaction with maternal referral practices in sub-Saharan African low and lower-middle income countries: a systematic review. *BMC Pregnancy and Childbirth*, 20(1), 682. <https://doi.org/10.1186/s12884-020-03339-3>
- Arifin, A., & Rupita, R. (2021). THE EFFECT OF ENVIRONMENTAL FACTORS TO THE LOCAL GOVERNMENT PUBLIC SERVICES AT THE BORDER REGION. *Sosiohumaniora*, 23(3), 299. <https://doi.org/10.24198/sosiohumaniora.v23i3.31515>
- Blessing Agbaza-Mogbojuri, & Angela O. Onwubuyah. (2023). Understanding the Public Health Burden of Hospital Readmissions in Resource-limited Health Systems. *International Journal of Biological and Pharmaceutical Sciences Archive*, 5(1), 097–109. <https://doi.org/10.53771/ijbpsa.2023.5.1.0011>
- Borovac-Pinheiro, A., Priyadarshani, P., & Burke, T. F. (2021). A review of postpartum hemorrhage in low-income countries and implications for strengthening health systems. *International Journal of Gynecology & Obstetrics*, 154(3), 393–399. <https://doi.org/10.1002/ijgo.13618>
- Campbell, R., Kernohan, G., Dorman, L., & Sinclair, M. (2023). An ethnographic study evaluating emergency obstetric care education and training in a remote, fragile region of Southeast Asia: Study protocol. *Nursing Open*, 10(12), 7860–7870. <https://doi.org/10.1002/nop2.2034>
- Daniels, A. A., & Abuosi, A. (2020). Improving emergency obstetric referral systems in low and middle income countries: a qualitative study in a tertiary health facility in Ghana. *BMC Health Services Research*, 20(1), 32. <https://doi.org/10.1186/s12913-020-4886-3>
- Dol, J., Hughes, B., Bonet, M., Dorey, R., Dorling, J., Grant, A., Langlois, E. V., Monaghan, J., Ollivier, R., Parker, R., Roos, N., Scott, H., Shin, H. D., & Curran, J. (2022). Timing of maternal mortality and severe morbidity during the postpartum period: a systematic review. *JB I Evidence Synthesis*, 20(9), 2119–2194. <https://doi.org/10.11124/JBIES-20-00578>
- Escobar, M. F., Nassar, A. H., Theron, G., Barnea, E. R., Nicholson, W., Ramasauskaite, D., Lloyd, I., Chandraharan, E., Miller, S., Burke, T., Ossanan, G., Andres Carvajal, J., Ramos, I., Hincapie, M. A., Loaiza, S., & Nasner, D. (2022). FIGO recommendations on the management of postpartum hemorrhage 2022. *International Journal of Gynecology & Obstetrics*, 157(S1), 3–50. <https://doi.org/10.1002/ijgo.14116>
- Evi, E. H., & Busman, A. (2026). Kegawatdaruratan Maternal dalam Perspektif Pelayanan Kebidanan Esensial. *Jurnal Pendidikan Dan Teknologi Kesehatan*, 9(1), 82–90. <https://doi.org/10.56467/jptk.v9i1.556>
- Hamdan, M., Lim, C., Tang, B. N., Abdul Hamid, H., Narayanan, V., Abdul Ghani, N. A., Ismail, M. P., Selvaratnam, V., Wadhawan, S., & Mukherjee, D. (2025). Postpartum Haemorrhage Burden, Management and Challenges in Malaysia: A Scoping Review and



- Expert Recommendations for Effective Management. *Cureus*.  
<https://doi.org/10.7759/cureus.89915>
- Hersh, A. R., Carroli, G., Hofmeyr, G. J., Garg, B., Gülmezoglu, M., Lumbiganon, P., De Mucio, B., Saleem, S., Festin, M. P. R., Mittal, S., Rubio-Romero, J. A., Chipato, T., Valencia, C., & Tolosa, J. E. (2024). Third stage of labor: evidence-based practice for prevention of adverse maternal and neonatal outcomes. *American Journal of Obstetrics and Gynecology*, 230(3), S1046-S1060.e1. <https://doi.org/10.1016/j.ajog.2022.11.1298>
- Huey, C. W. T., & Palaganas, J. C. (2020). What are the factors affecting resilience in health professionals? A synthesis of systematic reviews. *Medical Teacher*, 42(5), 550–560. <https://doi.org/10.1080/0142159X.2020.1714020>
- Iflaifel, M., Lim, R. H., Ryan, K., & Crowley, C. (2020). Resilient Health Care: a systematic review of conceptualisations, study methods and factors that develop resilience. *BMC Health Services Research*, 20(1), 324. <https://doi.org/10.1186/s12913-020-05208-3>
- Juqu, F. Z., Xulu-Kasaba, Z., & Baloyi, O. B. (2026). Action and interaction strategies for enhancing upward referral of obstetric emergencies from community health centres in the eastern cape. *Frontiers in Global Women's Health*, 7. <https://doi.org/10.3389/fgwh.2026.1798049>
- Mariama S. Dampha. (2023). Perceived Social Support and Access to Postpartum and Newborn Care in Northern Ghana: Exploring Women's Experiences Using the Three Delays Model. *CuratND*. <https://doi.org/10.7274/mk61rf59f6t>
- Masaba, B. B., Mmusi-Phetoe, R., Rono, B., Moraa, D., Moturi, J. K., Kabo, J. W., Oyugi, S., & Taiswa, J. (2022). The healthcare system and client failures contributing to maternal mortality in rural Kenya. *BMC Pregnancy and Childbirth*, 22(1), 903. <https://doi.org/10.1186/s12884-022-05259-w>
- Mgboro, B. (2025). Identifying and Managing High-Risk Obstetric Conditions with Prompt Referral as an Approach to Improving Pregnancy Outcomes) ® (IJMNHS.COM). *Nursing & Health Sciences (IJMNHS) ® (Print) International Journal of Medicine*, 9911(August), 1–17. <https://doi.org/10.5281/zenodo.17074413>
- Mohamed, A. A., Akın, A., Mihciokur, S., Üner, S., & Gele, A. (2025). Where and why mothers discontinue healthcare services: a qualitative study exploring the maternity continuum of care gaps in Somalia. *BMC Pregnancy and Childbirth*, 25(1), 1338. <https://doi.org/10.1186/s12884-025-08361-x>
- Musen, M. A., Middleton, B., & Greenes, R. A. (2021). Clinical Decision-Support Systems. In *Biomedical Informatics* (pp. 795–840). Springer International Publishing. [https://doi.org/10.1007/978-3-030-58721-5\\_24](https://doi.org/10.1007/978-3-030-58721-5_24)
- Musie, M. R., Tagutanazvo, O. B., Sepeng, N. V., Mulaudzi, F. M., & Hlongwane, T. (2025). A scoping review on continuing professional development programs for midwives: optimising management of obstetric emergencies and complications. *BMC Medical Education*, 25(1), 296. <https://doi.org/10.1186/s12909-025-06830-7>
- Nigussie, J., Girma, B., Molla, A., Tamir, T., & Tilahun, R. (2022). Magnitude of postpartum hemorrhage and its associated factors in Ethiopia: a systematic review and meta-analysis. *Reproductive Health*, 19(1), 63. <https://doi.org/10.1186/s12978-022-01360-7>
- Rachmatullah, D., Ayuningtyas, D., & Mega Utami, R. R. (2020). Strategic Contribution of Health Services in the Indonesia-Malaysia Border to the National Resilience: Analysis of Implementation in the West Kalimantan Province. *Indian Journal of Public Health*

- Research & Development, 11(1), 1060.  
<https://doi.org/10.37506/v11/i1/2020/ijphrd/193978>
- Reddy, B., Thomas, S., Karachiwala, B., Sadhu, R., Iyer, A., Sen, G., Mehrtash, H., & Tunçalp, Ö. (2022). A scoping review of the impact of organisational factors on providers and related interventions in LMICs: Implications for respectful maternity care. *PLOS Global Public Health*, 2(10), e0001134. <https://doi.org/10.1371/journal.pgph.0001134>
- Sadiku, O. D., Aina, S. A., Odoemene, C. C., Ogunmoyin, T. E., Adedara, V. O., Olasimbo, O., Ashir, F. A., Adili, S. C., Kuteyi, A. O., Fakayode, O. O., Faletti, D. O., & Nogales Bernal, M. B. (2024). Approaches to the Prevention and Treatment of Postpartum Hemorrhage: A Systematic Review of Past Advances, Recent Developments, and Best Practices. *Cureus*. <https://doi.org/10.7759/cureus.65096>
- Soola, A. H., Mehri, S., & Azizpour, I. (2022). Evaluation of the factors affecting triage decision-making among emergency department nurses and emergency medical technicians in Iran: a study based on Benner's theory. *BMC Emergency Medicine*, 22(1), 174. <https://doi.org/10.1186/s12873-022-00729-y>
- Syairaji, M., Nurdiati, D. S., Wiratama, B. S., Prüst, Z. D., Bloemenkamp, K. W. M., & Verschueren, K. J. C. (2024). Trends and causes of maternal mortality in Indonesia: a systematic review. *BMC Pregnancy and Childbirth*, 24(1), 515. <https://doi.org/10.1186/s12884-024-06687-6>
- Utarini, A. (2022). Dengue control in Yogyakarta, Indonesia: Lessons learned from public health innovation using Wolbachia-infected *Aedes aegypti* mosquitoes. In *sickness and in health: diagnosing Indonesia*, 222. In *Dengue control in Yogyakarta, Indonesia: Lessons learned from public health innovation using Wolbachia-infected Aedes aegypti mosquitoes*. In *sickness and in health: diagnosing Indonesia*, 222.
- Wei, J., Yi, Y., Li, X., Xu, Y., Fan, L., & Huang, H. (2025). Global, regional, and national burden of maternal hemorrhage: a systematic analysis from the global burden of disease 2021 and projections to 2030. *BMC Pregnancy and Childbirth*, 25(1), 1164. <https://doi.org/10.1186/s12884-025-08353-x>
- WHO. (2020). Operational Framework for Primary Health Care. In World Health Organization. <https://www.who.int/publications/i/item/9789240017832>
- WHO. (2021). Ending preventable maternal mortality (EPMM): a renewed focus for improving maternal and newborn health and well-being. In World Health Organization (Vol. 0, Number 3, pp. 1–8). <https://www.unicef.org/reports/neglected-tragedy-global-burden-of-stillbirths-2020>
- World Health Organization. (2025). Consolidated guidelines for the prevention, diagnosis and treatment of postpartum haemorrhage. In World Health Organization. <https://www.who.int/publications/i/item/9789240115637>
- Yunas, I., Islam, M. A., Sindhu, K. N., Devall, A. J., Podeseck, M., Alam, S. S., Kundu, S., Mammoliti, K. M., Aswat, A., Price, M. J., Zamora, J., Oladapo, O. T., Gallos, I., & Coomarasamy, A. (2025). Causes of and risk factors for postpartum haemorrhage: a systematic review and meta-analysis. *The Lancet*, 405(10488), 1468–1480. [https://doi.org/10.1016/S0140-6736\(25\)00448-9](https://doi.org/10.1016/S0140-6736(25)00448-9)