

Exploring Midwives' Lived Experience and Competence in Low-Dose Aspirin Prophylaxis for Preeclampsia Prevention

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ABSTRACT

This study aimed to explore midwives' lived experiences and clinical competence in implementing low-dose aspirin prophylaxis for preeclampsia prevention. A qualitative phenomenological design was employed to capture the subjective meanings and decision-making processes underlying midwives' clinical practice. Data were collected through in-depth semi-structured interviews and contextual observations involving eight midwives working in primary healthcare facilities in Jember Regency, Indonesia. Data were analyzed using interpretative thematic analysis. The findings indicate that midwives' competence is shaped through the interaction of clinical experience, knowledge of aspirin pharmacology, risk screening skills, and communication abilities. Variations in implementation were influenced by professional experience, access to training, interprofessional support, and organizational context. Midwives' lived experiences evolved from initial uncertainty toward greater confidence through reflective practice and observed positive outcomes. Strengthening experiential learning, system support, and continuous professional development is essential to optimize low-dose aspirin prophylaxis for preeclampsia prevention

INTRODUCTION

Hypertensive disorders of pregnancy constitute a leading cause of maternal and perinatal mortality worldwide (Karrar et al., 2024). Clinically, it is characterized by the onset of hypertension after 20 weeks of gestation and may progress to severe complications, including eclampsia. Recent global trends indicate an increasing burden of preeclampsia in regions with limited access to quality antenatal care, positioning its prevention as a major priority in contemporary maternal health services.

Among these strategies, low-dose aspirin (LDA) has emerged as one of the most promising interventions for the primary prevention of preeclampsia and other HDPs (Mkhize, P. Z, 2024). Its mechanism of action involves the inhibition of platelet aggregation and modulation of inflammatory pathways implicated in placental dysfunction. Evidence from clinical studies demonstrates that appropriate aspirin use can substantially reduce the incidence of preeclampsia, and international guidelines, including those from the World Health Organization, have incorporated aspirin prophylaxis into standard antenatal care for high-risk pregnancies.

Adherence of pregnant women in taking aspirin depends not only on education but also trust in midwives. This trust is built through emotional closeness and quality interactions during antenatal care. If mothers feel understood and valued, adherence rates increase significantly (Religioni, 2025). The success of a prophylaxis program relies heavily on effective two-way communication (Schuh, 2025). The implementation of aspirin requires an accurate risk screening process from the early trimester. Misidentification such as not recognizing predisposing factors can eliminate prevention opportunities. Screening accuracy is the initial foundation for successful intervention (Kupka, 2024).

As frontline providers of antenatal care, midwives play a critical role in risk screening, initiation of prophylaxis, counseling, and follow-up (Shinyawani et al, 2023). Their clinical competence directly influences the appropriateness and consistency of aspirin administration. Inadequate understanding of indications, contraindications, or monitoring requirements may reduce the effectiveness of prophylaxis or lead to clinical errors. Beyond technical skills, effective communication and counseling are essential to ensure maternal adherence, as aspirin prophylaxis requires long-term compliance throughout pregnancy.

Clinical competence develops not only through formal education but also through accumulated professional experience (Shibiru, S. et al, 2023). Exposure to high-risk cases fosters clinical intuition and reflective judgment; however, experience alone is insufficient without continuous knowledge updating and system support. Moreover, logistical factors, including medication availability and referral pathways, shape how guidelines are implemented in practice. Despite the availability of clinical guidelines, variations in implementation persist, often influenced by midwives' perceptions, beliefs, and lived experiences. Existing research on midwifery competence in preeclampsia prevention has largely emphasized quantitative outcomes, with limited exploration of experiential dimensions (Tarawneh. Et al, 2025). Yet, clinical

practice is inherently shaped by how healthcare providers interpret, negotiate, and internalize guidelines within real-world contexts. A phenomenological approach is therefore well suited to explore these dimensions. This study seeks to address this gap by examining midwives' lived experiences and clinical competence in implementing low-dose aspirin prophylaxis for preeclampsia prevention in primary care settings.

Despite the growing body of evidence supporting low-dose aspirin prophylaxis for preeclampsia prevention, existing studies predominantly focus on clinical effectiveness, dosage optimization, and maternal outcomes, with limited attention to the perspectives of midwives as primary implementers in antenatal care. Research exploring midwives' competence has largely relied on quantitative assessments, which insufficiently capture the contextual, experiential, and interpretive dimensions that shape real-world clinical practice. Consequently, there remains a significant gap in understanding how midwives perceive, internalize, and operationalize aspirin prophylaxis guidelines within primary care settings, particularly in resource-constrained environments where implementation challenges are most pronounced.

Addressing this gap, the present study offers novelty by adopting a phenomenological approach to explore midwives' lived experiences and clinical competence in implementing low-dose aspirin prophylaxis for preeclampsia prevention. By foregrounding subjective experiences, this study aims to elucidate how knowledge, professional experience, communication practices, and systemic factors converge to influence preventive care delivery. The primary objective of this research is to explore and interpret midwives' experiences in risk screening, decision-making, counseling, and follow-up related to aspirin prophylaxis, thereby generating contextually grounded insights to inform midwifery education, guideline implementation strategies, and policy development for improving maternal health outcomes.

LITERATURE REVIEW

Midwives' Clinical Competence

Clinical competence in midwifery encompasses the integration of knowledge, technical skills, professional attitudes, and ethical judgment required to deliver safe and effective care (Hyer et al., 2023; Rakanita & Johnson, 2021). In the Indonesian context, national midwifery competency standards emphasize professional competence (clinical knowledge and decision-making), communication competence (education, counseling, and advocacy), and ethical-legal competence (practice aligned with professional standards and regulations).

In preeclampsia prevention, midwives' competence is reflected in several key domains. First, competence in risk screening requires accurate history taking, physical examination, and identification of risk factors such as chronic hypertension, obesity, multiple pregnancy, or previous preeclampsia. Second, competence in documentation ensures continuity of care and informed clinical decision-making. Third, competence in pharmacological management involves appropriate initiation of low-dose aspirin, determination of dosage, monitoring for side effects, and patient education regarding adherence. Finally, competence in counseling and education supports maternal understanding, risk awareness, and sustained compliance with prophylactic therapy. Optimal integration of these competencies enhances early detection and effective prevention of preeclampsia, thereby contributing to improved maternal outcomes.

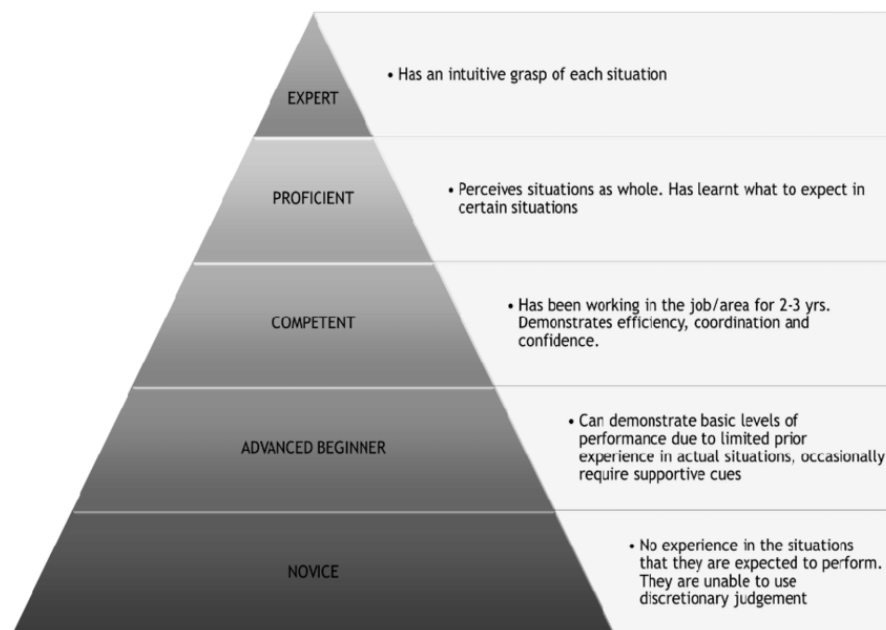


Figure 1. Benner's Novice to Expert Model of Clinical Competence

This figure depicts Benner's Novice to Expert Model of Clinical Competence, which explains the development of clinical competence in healthcare workers as a gradual and continuous process along with the accumulation of practical experience. This model is presented in the form of a pyramid showing five levels of competency, ranging from novice to expert, reflecting improvements in clinical skills, decision-making, and holistic understanding of situations.

At the novice level, individuals lack adequate clinical experience and rely heavily on rigid rules, guidelines, and instructions. Clinical decision-making is still limited, and the ability to use professional judgment (discretionary judgment) is underdeveloped. In the context of midwifery, midwives at this stage tend to mechanically follow standard procedures in risk screening and prevention of preeclampsia.

The advanced beginner level is characterized by the onset of initial clinical experience, allowing individuals to demonstrate basic performance in real-world situations. However, understanding of the context remains limited and often requires support or guidance from more experienced personnel. At this stage, midwives begin to recognize risk factors for preeclampsia, but consistency in decision-making and implementation of aspirin prophylaxis still depends on supervision.

At the competent level, individuals generally have around two to three years of work experience in the same field. At this stage, midwives are able to work more efficiently, coordinated, and confidently. Clinical decision-making becomes more planned and goal-based, including systematic risk screening and the appropriate initiation and monitoring of low-dose aspirin use.

The proficient level demonstrates the ability to understand clinical situations comprehensively and holistically. Individuals no longer focus solely on isolated aspects but are able to anticipate changes in the patient's condition based on previous experience. In midwifery practice, midwives at this level can recognize signs of preeclampsia risk earlier and provide more effective counseling and individualized care.

At the apex of the pyramid, the expert level is characterized by intuitive and reflective clinical mastery. Decision-making is rapid and accurate without relying on explicit formal rules. Midwives at this level possess mature clinical skills in screening, decision-making, and optimal implementation of aspirin prophylaxis, thus contributing significantly to preeclampsia prevention and improved maternal and perinatal outcomes.

Overall, this figure emphasizes that clinical competence is not static but develops through experience, reflection, and ongoing learning. Benner's model provides a strong theoretical foundation for understanding variations in midwife competence in clinical practice, particularly in efforts to prevent preeclampsia through evidence-based interventions.

Preeclampsia Screening

Preeclampsia screening is a fundamental component of antenatal care aimed at early detection and prevention of complications (Meurer et al., 2020; Wallace & McCarthy, 2021). Standard screening methods include routine blood pressure measurement, assessment of proteinuria, and evaluation of clinical risk factors. Blood pressure monitoring is recommended at every antenatal visit, particularly during the second and third trimesters. Urine dipstick testing provides a simple method for early detection of proteinuria.

Midwives, as primary providers of antenatal care, are expected to possess adequate knowledge and skills to recognize early signs of preeclampsia. However, studies have reported variability in midwives' understanding and

application of screening protocols. In some settings, a substantial proportion of women identified as high risk do not receive timely follow-up or preventive intervention.

Additional screening approaches, such as assessment of body mass index and mean arterial pressure, have been explored as predictors of preeclampsia risk, although their routine implementation remains limited in primary care. These findings underscore the importance of strengthening midwives' screening competence and ensuring consistent application of evidence-based protocols.

METHODOLOGY

This study employed a qualitative phenomenological design to explore midwives' lived experiences in administering low-dose aspirin to pregnant women at risk of preeclampsia. Phenomenology was selected to capture the subjective meanings, reflections, and interpretations underlying clinical decision-making processes that are not accessible through quantitative methods (Opara & Petrucka, 2024). The study was conducted in Jember Regency, Indonesia, at Nogosari and Ledokombo Public Health Centers, both of which provide antenatal care services for high-risk pregnancies. Eight midwives were recruited through purposive sampling based on predefined criteria, including direct involvement in aspirin prophylaxis, a minimum of two years of professional experience, and routine engagement in preeclampsia screening.

Data were collected through in-depth semi-structured interviews and supplemented by contextual observations of clinical practice. Interviews were audio-recorded, transcribed verbatim, and anonymized. Data analysis followed interpretative phenomenological procedures, including coding, theme development, and reflective interpretation to reconstruct the essence of participants' lived experiences. Trustworthiness was enhanced through source triangulation and member checking. Ethical approval was obtained prior to data collection, and informed consent was secured from all participants.

RESEARCH RESULT

Midwives' Lived Experiences

Midwives reported that their initial exposure to low-dose aspirin prophylaxis occurred through governmental training programs and clinical workshops. Early learning was perceived as theory-oriented, with practical understanding developing gradually through real-world application. Initial implementation was characterized by caution, particularly when managing high-risk pregnancies, prompting frequent peer discussion to ensure safe decision-making.

Emotionally, many midwives expressed hesitation when giving aspirin to pregnant women for the first time due to fears of side effects. These fears began to diminish after they saw a decrease in preeclampsia cases in patients on a regular aspirin regimen. The more successful experiences they had, the more their confidence in intervening grew. The presence of evidence of clinical success becomes an existential experience that strengthens professionalism.

Regular consultation reduced uncertainty, although delays in referral communication were occasionally reported. Ethical dilemmas arose when pregnant women declined aspirin therapy, prompting midwives to balance patient autonomy with preventive responsibility. These encounters fostered reflective practice and strengthened empathetic and communication skills.

It was shown by other interview results that a great need for further training is still felt, especially regarding the skill of systematically assessing risk factors. It was stated by many midwives that while the main clinical signs were understood, uncertainty was sometimes experienced in interpreting the clinical limits of pregnancy hypertension. Delays in starting aspirin in at-risk patients were sometimes led by this uncertainty. Through this finding, a clear gap between standardized knowledge and field application is illustrated.

It was reported by the midwives that the success of aspirin therapy is most significantly affected by the interaction with pregnant women. Education is quickly accepted by some pregnant women due to prior experiences with preeclampsia, but fear is also shown by many when the word "medicine" is heard. Patience was maintained by the midwives, and explanations with real-life examples were slowly provided to increase patient acceptance. More mature communication skills were acquired through this experience over time.

When a patient who refused aspirin therapy was encountered, a dilemma was felt by the midwives between the mother's safety and the patient's right to autonomy. Other approaches are tried to be found, such as the involvement of the family or the provision of additional information through leaflets. The process of patient refusal is not considered a failure, but rather an ethical lesson in which the patient's psychological perspective is considered. From this, it is understood by midwives that competence is not only clinical but also empathetic and persuasive.

It was expressed by many midwives that the process of personal reflection is increasingly valued after working with high-risk patients. Clinical and communication decisions are often re-evaluated after each patient encounter is completed. Midwives are made to feel more mature and calm when facing the

next case by this reflection process. Professional growth is illustrated by this development as a continuous process within the lived experience.

It was also revealed by other interview results that the dynamics of pregnancy risk are better understood through the experience of managing aspirin administration. A clear difference can be seen between monitored mothers and mothers by whom therapy is not undergone as indicated. When positive results are seen—such as blood pressure remaining stable until the end of the trimester—a strong sense of professional satisfaction is felt. Trust in preventive medical interventions is reinforced by this experience, which becomes a collective memory.

Overall, the midwives' lived experiences with aspirin were gradually developed from hesitation to more stable competence. They were grown through real challenges, clinical successes, peer support, and long-term reflective learning. A process of transformation of professional attitudes and beliefs over time was shown by the interviews. It is by this experience that meaning is given to the midwifery profession.

Over time, positive clinical outcomes reinforced midwives' trust in aspirin prophylaxis and contributed to professional satisfaction. Lived experiences evolved from uncertainty toward stable competence through reflection, peer learning, and accumulated clinical success.

Midwives' Clinical Competence

Observations demonstrated that midwives systematically conducted risk assessment through history taking, blood pressure measurement, and evaluation of obstetric history. Aspirin administration followed recommended dosages and timing, with attention to adherence and monitoring for adverse effects. Counseling was delivered using clear, relatable explanations to enhance maternal understanding.

In terms of clinical assessment, aspirin candidates were more consistently identified by midwives who demonstrated thorough skills in history taking and blood pressure measurement. However, this accuracy is seen to depend on measurement training and the availability of appropriate tools. Based on critical analysis, it is recommended that operational standards of examination and competency-based skills training be made available and regularly audited. Without adequate standards and tools, assessment capabilities are found to be prone to large variability.

Furthermore, safe administration is considered to be dependent on midwives' pharmacological knowledge of aspirin dosage, contraindications, and side effects. It is shown by observations that the understanding of contraindication aspects (e.g., bleeding disorders) is still unevenly distributed. It is implied by the analysis that maternal pharmacology education should be enriched with case modules and interactive scenarios so that pharmaco-clinical reasoning can be built. In synthesis, it is argued that pharmacology should not be treated as a separate module without integration into real clinical practice.

Midwives' communication competence is reflected in the ability to translate clinical evidence into messages that can be easily understood by patients.

Variations in this skill are shown by observations, and superior skills are found to be associated with patient compliance. It is suggested by critical analysis that these skills can be trained through communication simulations, role plays, and video feedback rather than just lectures. In synthesis, effective communication is viewed as an equally important non-pharmacological intervention in the effectiveness of aspirin prophylaxis.

The management aspect of follow-up (scheduling controls, monitoring adherence, recording side effects) is identified as a part of managerial competence that is often neglected in formal clinical training. Better patient adherence rates are shown to be achieved by midwives by whom checklists and reminders are implemented. The need for the integration of basic managerial skills into the midwifery curriculum is confirmed by this analysis. In synthesis, technical competence is required to be supported by micro-management skills to ensure continuity of therapy.

Clinical safety is influenced by collaborative competence (the ability to work in multi-professional teams). More informed decisions and faster management of complications are reported by midwives by whom regular consultations with doctors and pharmacists are conducted. These competencies are placed by critical analysis as systemic skills that need to be nurtured through interprofessional education (IPE). Synthetically, it is concluded that by improving the competencies of midwives, team competencies are also built – not just those of individuals.

Ideally, a multimodal approach is used for competency assessment: direct observation (skill checklist), case assessment (OSCE or case vignette), clinical record audit, and reflective interview. The most valid picture of midwives' readiness to practice in the field is suggested by evidence to be yielded by a combination of these methods). It is recommended by critical analysis that an audit-feedback cycle be implemented by health institutions to maintain competency standards. In synthesis, real practice readiness gaps are considered vulnerable to being masked by one-dimensional assessments.

E-learning for theory, practical workshops, and onsite mentoring are incorporated into effective continuing professional development. Better clinical behavior change is shown by implementation studies to result from programs in which a mentoring component is included, compared to one-off training. The accountability element (audit and supervision) is shown by analysis to be critical to sustaining change. In policy synthesis, resources are called to be allocated for medium-term programs that incorporate learning and supervision.

Candidate identification has been shown to be improved and the monitoring of drug administration facilitated by simple documentation and information systems. It is suggested by critical analysis that a major impact on clinical practice can be had by small administrative changes, such as structured forms. In synthesis, the strengthening of competency is not always found to be expensive; it often involves the simple but effective redesign of work processes.

At the system level, policy synergy is required for the improvement of midwives' competencies: adaptive local guidelines, funding for drug stocks, standardized training modules, and mechanisms for monitoring outcome

indicators. It is suggested by recent analysis that competence as an outcome should be viewed as a system product—the result of interactions between training, logistical support, supervision, and service context. An integrated package of interventions is called for by policy synthesis so that individual competence can be harmonized with systemic capacity for the effective and sustainable prevention of preeclampsia.

Midwives maintained regular follow-up, documented clinical findings consistently, and collaborated actively with physicians when complications arose. Reminder systems and proactive scheduling supported continuity of care. These practices reflected integrated clinical, communication, and managerial competencies essential for effective prophylaxis.

RESULTS AND DISCUSSION

Clinical Authority and the Paradigm Shift in Midwifery Practice

The findings of this study underscore a significant evolution in the regulatory landscape of midwifery in Indonesia. The transition of midwives from passive referral agents to proactive "first-line providers" for low-dose aspirin prophylaxis represents a critical "Structural" element in accelerating the reduction of maternal morbidity. However, a "service gap" persists due to varying levels of clinical authority adoption. While some midwives have embraced direct initiation of therapy following the Ministry of Health's latest guidelines, others remain tethered to traditional referral cultures. This hesitancy is often rooted in perceived malpractice risks and a reliance on hierarchical instructions, a phenomenon also observed in other low- and middle-income countries (LMICs) where systemic gaps often hinder the implementation of international guidelines (Kupka et al., 2024; Smith et al., 2020).

This "transitional doubt" reflects a broader conceptual challenge in midwifery competence. As suggested by Baluwa et al. (2023), clinical competence is not merely the possession of knowledge but the ability to integrate that knowledge with independent decision-making in real-world clinical situations. The successful adoption of autonomous prescribing by some participants confirms that top-down policies supported by formal clinical forums are primary drivers for professional transformation in primary care settings (Puspasari et al., 2021).

Diagnostic Rigor and Instrumental Readiness

The quality of clinical processes is inextricably linked to the readiness of diagnostic instruments. The MCH Handbook serves as a vital clinical decision support system (CDSS), reducing the cognitive load on midwives through its color-coded risk algorithms. This standardized tool increases screening accuracy, aligning with Schuh et al. (2025), who emphasize that structured public health communication tools are essential for building trust and understanding between providers and patients.

However, structural deficiencies, such as the lack of examination beds in integrated health posts (Posyandu), force midwives to modify diagnostic procedures. Such modifications, particularly in blood pressure measurement positions, compromise diagnostic rigor and create inconsistencies in clinical data.

According to the Donabedian framework, physical infrastructure is a primary predictor of protocol compliance (Smith et al., 2020). Furthermore, logistical continuity regarding aspirin supply is a fundamental prerequisite. Proactive drug management by frontline providers can significantly increase the coverage of prophylactic therapy, reinforcing the findings of Mkhize et al. (2024), who noted that the effectiveness of aspirin in LMICs is highly dependent on consistent supply chains and timely clinical initiation.

Interventional Quality, Adherence, and the Trust Ecosystem

Effective preeclampsia prevention requires not only an accurate diagnosis but also a high-level "clinical awareness" that integrates physical data with a patient's medical history. This study found that midwives with high diagnostic rigor were better able to identify "borderline" risks that are often missed by purely administrative approaches (Hadirman et al., 2021).

In managing therapy, polypharmacy and minor side effects remain significant barriers to patient adherence. Strategic communication that validates a mother's concerns before providing medical correction—a technique referred to as "tactical empathy"—is crucial for long-term compliance (Puspasari et al., 2021). This is supported by Religioni et al. (2025), who argue that enhancing therapy adherence directly improves clinical outcomes and the overall quality of life for patients. Moreover, the involvement of husbands and community health workers (kader) as treatment supporters (PMO) mitigates the risk of "adherence bias," where patients may report compliance solely to satisfy healthcare providers (social desirability bias).

Navigating Misinformation and Socio-Cultural Barriers

In the era of "Dr. Google," midwives must navigate a landscape of digital misinformation. The findings suggest that midwives who act as literacy mediators, rather than authoritative instructors, are more successful in building a "bridge of trust" with their patients. This is consistent with recent findings by Schuh et al. (2025), which highlight that public health trust is built through opportunities for mutual understanding.

Furthermore, socio-cultural stigmas regarding marriage history or new partnerships often lead to "hidden risks." Midwives who utilize an interpretive phenomenological approach in their interactions—seeking the deeper meaning behind a patient's narrative—are more likely to uncover these sensitive but critical risk factors (Opara & Petrucka, 2024).

Clinical Outcomes and Professional Self-Efficacy

The ultimate outcome of integrated screening and early intervention is the stabilization of maternal hemodynamics and the achievement of "zero eclampsia" cases. The success stories reported by midwives in this study build professional self-efficacy. According to Bandura's theory, these "success experiences" encourage practitioners to maintain high standards of care. Conversely, midwives who rely solely on passive referrals often lack the experiential validation of aspirin's effectiveness, viewing it only through a theoretical lens.

Finally, patient safety through the mitigation of bleeding risks represents the culmination of the care continuum. Professional anxiety regarding postpartum hemorrhage can be managed through strict termination protocols (stopping aspirin at 34-36 weeks). As Al-Tarawneh et al. (2025) emphasize, the alignment of knowledge, positive attitudes, and standardized protocols is essential for the effective management of preeclampsia in maternity settings.

CONCLUSIONS AND RECOMMENDATIONS

The success of preeclampsia prevention in primary healthcare is fundamentally determined by the synchronization of regulations, individual competence, and the availability of supportive infrastructure. Although the expansion of clinical authority has empowered midwives to initiate independent therapy, a significant "service gap" persists due to transitional doubt and a deeply ingrained referral culture. This is further complicated by variations in clinical diagnostic rigor and non-standardized methods for internal knowledge updates. Furthermore, structural deficiencies – such as the lack of examination beds in the field and pharmaceutical supply chain bottlenecks – force midwives to modify procedures, thereby undermining service quality standards. The MCH Handbook, while a vital clinical decision-support tool, is often underutilized and treated as an administrative formality rather than a comprehensive risk-screening instrument. Theoretically, this confirms that healthcare quality, according to the Donabedian framework, is only achievable when structural elements (regulation, human resources, and logistics) are fully integrated to drive consistent clinical processes.

The integration of precise screening and early aspirin initiation yields significant clinical impacts on the hemodynamic stability of high-risk pregnant women. The achievement of "zero eclampsia" cases was consistently reported by midwives who proactively managed patients at the primary level without over-relying on conventional referral pathways. Conversely, passive midwives tend to hold only theoretical beliefs in the therapy's effectiveness, as they lack "vicarious experiences" or firsthand clinical success stories. This underscores that direct experience in managing therapy significantly influences a midwife's self-efficacy and confidence in providing persuasive counseling. Beyond clinical effectiveness, the impact of service is characterized by a heightened awareness of patient safety through the mitigation of postpartum hemorrhage risks. Midwives with high clinical vigilance have implemented timely drug termination protocols and close monitoring for subclinical coagulation disorders. However, a challenge remains as some providers focus solely on blood pressure stability without establishing clear termination strategies before delivery. Ultimately, the success of maternal health outcomes is measured not only by the arrest of preeclampsia progression but also by the midwife's ability to maintain intensive clinical surveillance, ensuring a balance between the benefits of antiplatelet therapy and the mitigation hemoragic risks for both mother and fetus

ADVANCED RESEARCH

Future studies may develop intervention-based models grounded in phenomenological findings to enhance midwives' competence. Mixed-methods longitudinal designs could assess the impact of structured training, simulation, and interprofessional mentoring on clinical outcomes and professional development over time.

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