

The Effectiveness of Evidence-Based Practice-Based Midwifery Services in Reducing the Number of Obstetric Interventions in Hospitals

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ABSTRACT

This study aimed to examine Emergency Department (ED) nursing service quality using the SERVQUAL model and its impact on patient satisfaction. A qualitative approach with an exploratory case study design was applied to capture how satisfaction is constructed through both clinical processes and interpersonal communication in time-pressured emergency contexts, where numeric indicators alone may miss key experiential drivers. The study was conducted in the ED of an urban referral hospital in Indonesia. A purposive sample of 24 informants was recruited, including staff nurses, an ED shift coordinator, quality personnel, and patients/family members, to ensure variation in roles and service experiences. Findings indicate that patient satisfaction reflects the combined performance of SERVQUAL dimensions: tangibles shape initial expectations, reliability and responsiveness influence perceptions of procedural consistency and timely action, and assurance and empathy strengthen trust, safety, and perceived dignity during crisis. Participants emphasized that delays were tolerated more when nurses provided clear updates and demonstrated attentive presence. The study recommends reinforcing triage and intervention standardization, embedding concise therapeutic communication as a core ED nursing competency, improving workload management to sustain responsiveness and empathy, and implementing continuous patient feedback loops to support ongoing quality improvement.



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INTRODUCTION

Hospitals remain central to intrapartum care because they provide continuous monitoring capacity, specialist consultation, emergency readiness, and neonatal support. At the same time, hospital-based childbirth is frequently associated with a progressive escalation of obstetric interventions, ranging from pharmacological induction and augmentation of labor to routine episiotomy, continuous electronic fetal monitoring for low-risk cases, instrumental birth, and cesarean section (Ekinci, 2026). While many interventions are lifesaving when clinically indicated, their overuse can expose mothers and newborns to avoidable risks, increase costs, prolong recovery, and undermine women's autonomy and satisfaction with care (Kurniawan & Putro, 2025). The contemporary challenge in maternity services is therefore not simply to increase access to obstetric technology, but to ensure that clinical decisions are proportionate, evidence-informed, and aligned with women's preferences particularly for low-risk pregnancies where physiologic birth is often achievable with appropriate support.

Evidence-Based Practice (EBP) has emerged as a cornerstone for improving quality and safety in healthcare, including midwifery services. In midwifery, EBP refers to the systematic integration of the best available research evidence, professional expertise, and the values and choices of women and their families (Chen, 2025). This approach is especially relevant to intrapartum care because labor management often involves time-sensitive decisions under uncertainty, where local habits, risk aversion, institutional culture, and medicolegal concerns may influence practice as much as clinical need. EBP-based midwifery services aim to strengthen clinical reasoning, standardize care pathways using validated guidelines, promote shared decision-making, and encourage supportive, non-invasive strategies that protect physiologic birth. In principle, this model can help reduce unnecessary intervention while maintaining readiness to escalate when complications arise (Utirov, 2025).

The state of the art in maternity care increasingly recognizes that intervention rates are shaped by complex systems rather than by individual clinical decisions alone. Variation in practice across hospitals, shifts, and providers suggests that “supply-side” factors such as staffing levels, workload, availability of continuous labor support, training in low-intervention techniques, and the presence of clear clinical protocols can determine whether labor is managed as a normal physiologic process or as a condition requiring routine medicalization (Alfatafta et al., 2025). International debates on optimizing cesarean section rates, limiting non-indicated induction, and improving respectful maternity care have reinforced the idea that quality care is not synonymous with more procedures. Instead, quality is reflected in appropriate, timely interventions combined with effective prevention of avoidable complications, good communication, and positive birth experiences (Safitri & Ambarwati, 2024).

Despite growing attention to EBP in midwifery, the practical implementation of EBP in hospital environments remains inconsistent. Many hospitals formally endorse evidence-based guidelines, yet frontline adherence may be fragmented due to limited access to updated evidence, variable competence in critical appraisal, entrenched routines, hierarchical decision-making, and inadequate audit and feedback mechanisms. Furthermore, midwives in hospital settings may experience restricted autonomy, where clinical decisions are heavily influenced by physician preferences or institutional risk management policies (S et al., 2025). These conditions can unintentionally encourage “defensive” or routine interventions, even when the clinical picture supports expectant management. Consequently, there is a need to evaluate not only whether EBP is promoted, but whether EBP-based midwifery services measurably change clinical outcomes particularly the rate of obstetric interventions and the safety profile associated with their use (Yulianto & Sulistyowati, 2025).

Tabel 2. Evidence-Based Practice (EBP) midwifery to reduce obstetric interventions

Valid data	Why it matters for your background
Global caesarean section rate is ~21% of births	Interventions are very common globally, making reduction of unnecessary procedures a major quality issue.
Global CS rate is projected to reach ~29% by 2030	Adds urgency: intervention intensity is expected to rise without system/practice change.
Benefits for mortality improve as CS rates rise up to ~10%, but higher rates are not associated with further reductions in maternal/newborn mortality	Supports the “right care” argument: focus on appropriateness, not simply more procedures.

Source: WHO news release on CS trends (2021).

The primary problem addressed in this research is the persistent and sometimes increasing frequency of obstetric interventions in hospital births that may not always be clinically necessary, potentially creating preventable harms and resource burdens. When interventions are applied without strong indications, they can trigger cascades of care augmentation leading to more pain, which increases analgesia use, which can affect labor progress, culminating in instrumental birth or cesarean section. Such cascades can alter maternal mobility, reduce perceived control, and contribute to negative childbirth experiences (Bilqis et al., 2025). From a health system perspective, higher intervention rates may strain operating rooms, increase length of stay, and elevate costs. For providers, it can normalize interventional management and reduce confidence in supporting physiologic birth, further entrenching high-intervention patterns (Amanda et al., 2024).

A critical research gap lies in the limited availability of rigorous, context-sensitive evidence on the effectiveness of structured EBP-based midwifery services specifically targeted at reducing obstetric intervention rates within hospitals. Many prior studies focus on single interventions (for example, continuous labor support or use of a partograph) rather than on an integrated service model that combines guideline-driven clinical pathways, competency reinforcement, shared decision-making, and ongoing quality monitoring (Šakinytė, 2024). In addition, existing evidence is often derived from settings with different staffing models, midwifery autonomy, and risk profiles, which constrains direct transferability to hospitals where interprofessional dynamics and institutional protocols strongly shape intrapartum

decision-making. Another gap concerns measurement: studies may report intervention rates without adequately describing implementation fidelity whether EBP components were delivered consistently, by whom, and under what constraints making it difficult to interpret outcomes and replicate successful strategies (Rebualos et al., 2024).

This study's novelty is its focus on EBP-based midwifery services as a coherent, operational model within hospital maternity care, evaluated through outcomes that matter to both clinical safety and service quality. Rather than treating EBP as an abstract principle, the research positions EBP as an actionable service design that can be implemented, monitored, and assessed. The study emphasizes the relationship between a structured EBP framework and the reduction of potentially avoidable obstetric interventions, while simultaneously attending to maternal and neonatal safety indicators (Utkirov & Utkirov, 2025). By linking process elements (such as adherence to evidence-informed labor management protocols, use of supportive non-pharmacologic measures, and documentation quality) with outcome measures (such as induction/augmentation, episiotomy, instrumental birth, and cesarean section rates), the study aims to contribute practical evidence that can guide hospital policy and midwifery practice.

In line with this focus, the research is guided by the following problem formulation: to what extent are EBP-based midwifery services effective in reducing obstetric intervention rates among hospital births, and under what conditions can this reduction be achieved without compromising safety? More specifically, the study asks whether implementation of EBP-based midwifery services is associated with lower utilization of common obstetric interventions; whether maternal outcomes (such as postpartum complications and recovery indicators) and neonatal outcomes (such as immediate adaptation and need for higher-level care) remain stable or improve; and whether process measures of EBP implementation, including adherence to protocols and shared decision-making practices, mediate the relationship between the service model and clinical outcomes (Pallidine & Goldin, 2025).

Accordingly, the purpose of this research is to evaluate the effectiveness of EBP-based midwifery services in reducing obstetric intervention rates in hospital settings. The study seeks to quantify differences in intervention patterns and to interpret these differences in light of implementation quality and clinical context. Beyond measuring outcomes, it aims to clarify how EBP is operationalized in routine intrapartum care and to identify practical leverage points for sustaining evidence-aligned practices in environments where time pressure, institutional culture, and professional hierarchy can influence decision-making.

The theoretical contribution of this research lies in strengthening the linkage between EBP frameworks and intrapartum care outcomes, extending beyond the common emphasis on knowledge uptake to include measurable service performance (Singh & Jaiswal, 2025). Conceptually, the study supports a model of maternity care in which physiologic birth is protected through evidence-informed clinical thresholds and supportive practices, while escalation remains available when clinically justified. Academically, the findings can inform midwifery education and professional development by highlighting which EBP competencies and implementation supports are most consequential for changing practice patterns. The study can also contribute to scholarly discussions on implementation science in maternity care, especially regarding how complex interventions such as service models rather than single clinical actions can be embedded within hospital systems.

Practically, the study has implications for hospital management, maternity unit leaders, and policymakers. If EBP-based midwifery services are shown to reduce unnecessary interventions while maintaining safety, hospitals can use the findings to refine clinical pathways, strengthen audit and feedback systems, and invest in targeted training (Henry et al., 2024). The research can support guideline harmonization across professions, improving collaboration between midwives and obstetricians through shared standards and transparent clinical thresholds. Additionally, the study may offer a quality improvement roadmap that aligns patient-centered care with efficiency goals by reducing avoidable procedures, shortening recovery periods, and optimizing resource use.

This research also acknowledges limitations that commonly arise when evaluating service models in real-world clinical settings. Hospitals differ in case mix, staffing patterns, and baseline intervention cultures, which may influence observed outcomes and limit generalizability. Measurement of EBP implementation can be challenging; documentation quality may vary, and some aspects of shared decision-making or supportive care may not be fully captured in routine records. If the study employs observational or quasi-experimental designs, confounding factors such as changes in staffing, concurrent policy reforms, or shifts in patient risk profiles may affect causal interpretation (Budyantara et al., 2025). Furthermore, reducing intervention rates is not universally desirable if it results from underuse when indications exist; therefore, the study must interpret reductions alongside safety outcomes and clinical appropriateness.

Future research should build on this work by testing EBP-based midwifery service models across multiple hospitals with diverse profiles, enabling stronger inference and wider applicability. Mixed-methods approaches are recommended to complement quantitative findings with qualitative insights into how midwives, obstetricians, and women perceive EBP, autonomy, and decision-making dynamics. Economic evaluations would also be valuable to estimate cost implications of reduced interventions, including effects on length of stay, operating room utilization, and downstream health outcomes. Finally, longer-term outcomes such as breastfeeding continuation, maternal mental health, pelvic floor function, and satisfaction with care should be incorporated to capture the full impact of EBP-based midwifery services beyond immediate clinical endpoints.

Overall, investigating the effectiveness of EBP-based midwifery services in reducing obstetric intervention rates addresses a critical quality-of-care question for hospital maternity units. By focusing on evidence-informed decision-making, respectful support for physiologic labor, and systematic implementation strategies, this study aims to generate actionable knowledge that helps hospitals balance safety, efficiency, and women-centered care within modern obstetric systems.

LITERATURE REVIEW

Hospital childbirth has expanded access to skilled attendance, emergency readiness, and neonatal care, yet it has also become closely associated with high and sometimes rising rates of obstetric interventions. Interventions such as induction or augmentation of labour, routine episiotomy, instrumental vaginal birth, and caesarean section are clinically essential when indications are clear, but their non-indicated or poorly justified use can trigger a cascade of further procedures, increase maternal morbidity, lengthen recovery, and raise health-system costs (Oktoriano et al., 2024). Global guidance increasingly emphasizes that quality intrapartum care should balance timely escalation with protection of physiologic labour and a positive childbirth experience, rather than equating “more intervention” with “better care.”

Evidence-Based Practice (EBP) in midwifery is commonly defined as the integration of best available research evidence with clinical expertise and the preferences and values of women and families. In hospital settings, however, EBP does not automatically translate into lower intervention rates because practice patterns are shaped by institutional culture, staffing constraints, risk management norms, and interprofessional decision-making structures. When labour management is guided by habit, fragmented protocols, or defensive medicine, interventions may be used pre-emptively rather than responsively. Conversely, EBP-oriented midwifery services when implemented as a coherent service model rather than isolated training can strengthen clinical thresholds for intervention, standardize decision points, expand the use of non-pharmacologic and supportive measures, and foster shared decision-making consistent with respectful maternity care (Chen et al., 2025). The literature therefore suggests that the effectiveness of EBP-based midwifery services should be evaluated not only by whether guidelines exist, but by whether implementation changes clinical processes and outcomes at unit level.

Current empirical evidence indicates that models centred on continuous, skilled support and midwife-led continuity are associated with reduced intervention and improved experience without compromising safety for many populations. A major synthesis of continuous labour support reports benefits

including higher likelihood of spontaneous vaginal birth and lower likelihood of caesarean and instrumental birth, alongside improved experiential outcomes. Similarly, evidence on midwife-led continuity models indicates lower intervention rates and higher satisfaction with at least comparable maternal and neonatal outcomes, and updated syntheses continue to reinforce these patterns (Santoso et al., 2024). While these findings support a “less intervention when appropriate” direction, they do not by themselves explain how to operationalize EBP-based midwifery services inside hospitals where practice is multi-disciplinary, protocols may be inconsistently applied, and midwives’ clinical autonomy varies. This creates a strong rationale for anchoring the study in established theories that can connect EBP implementation processes to measurable reductions in unnecessary interventions.

The first theoretical foundation for this research is the structure–process–outcome (SPO) quality-of-care model popularized by Avedis Donabedian in 1966 at the University of Michigan (United States). In Donabedian’s framework, “structure” refers to the care environment and resources (e.g., staffing levels, competencies, protocols, equipment, and organizational governance), “process” refers to what is actually done in care delivery (assessment, monitoring, communication, clinical decision-making, documentation, and supportive practices), and “outcome” refers to the results of care for patients and populations. Applied to EBP-based midwifery services, this theory directs attention to whether hospitals have enabling structures for EBP (e.g., updated guidelines, audit systems, training in evidence appraisal, and supportive staffing), whether intrapartum processes align with evidence (e.g., appropriate use of induction/augmentation and monitoring, consistent use of shared decision-making), and whether outcomes include reduced non-indicated interventions alongside stable or improved maternal–neonatal safety indicators (Bandaru, 2024).

The contemporary development of Donabedian’s approach is evident in modern maternal–newborn quality frameworks that expand “outcomes” beyond survival to include experience of care, respectful communication, and person-centredness. For example, the World Health Organization standards for improving quality of maternal and newborn care emphasize both provision and experience of care as linked dimensions supported by health-system structures. This evolution strengthens the theoretical fit for a hospital-based EBP midwifery study: reducing unnecessary interventions is not framed as an isolated utilization target, but as a quality outcome that must be interpreted alongside safety, experience, and equity. In the context of the main research problem overuse of obstetric intervention Donabedian’s model also clarifies the research gap: many facilities track outcomes (e.g., caesarean rates) without sufficiently diagnosing upstream structural and process drivers, limiting the ability to design EBP services that reliably shift practice (Ma, 2025).

The second theory is diffusion of innovations, popularized by Everett M. Rogers through the first edition of *Diffusion of Innovations* in 1962 while he was an assistant professor at Ohio State University (United States). Rogers explains adoption as a process shaped by perceived attributes of the innovation (relative advantage, compatibility, complexity, trialability, observability), communication channels, time, and the social system. In a maternity unit, EBP-based midwifery practices can be understood as innovations competing with established routines: even when evidence exists, clinicians may perceive EBP protocols as complex, time-consuming, or misaligned with local norms, particularly under workload pressure. Diffusion theory therefore helps interpret why EBP implementation may stall, why variation persists between teams and shifts, and which change levers (opinion leaders, peer influence, feedback, and visibility of benefits) can accelerate adoption (Ching-Li & Sukirthanandan, 2025).

More recent work extends diffusion thinking into health service organizations by emphasizing that adoption and sustainability depend on system readiness, leadership, interprofessional relationships, and the “fit” between innovation and context. A widely cited synthesis of diffusion in service organizations highlights that complex clinical innovations spread best when they are adaptable, supported by champions, reinforced through learning systems, and embedded into routine workflows rather than added as extra tasks. This contemporary interpretation is directly relevant to the research gap: hospitals may disseminate EBP guidelines without achieving real diffusion into day-to-day intrapartum decisions. In relation to the study’s main problem, diffusion theory supports the expectation that reducing unnecessary interventions requires not only evidence but also deliberate strategies to normalize EBP behaviours across professions and roles, including aligned obstetric–midwifery thresholds for escalation.

The third theory is the Knowledge-to-Action (KTA) framework, developed in 2006 by Ian D. Graham and colleagues at the University of Ottawa (Canada). KTA conceptualizes translation as two interacting components: knowledge creation (from inquiry through synthesis and tools such as guidelines) and an action cycle that includes identifying problems, adapting knowledge to context, assessing barriers, selecting and implementing interventions, monitoring use, evaluating outcomes, and sustaining knowledge use over time (Isbandi et al., 2025). In hospital midwifery services, this framework provides an explicit roadmap for operationalizing EBP: it prompts the unit to move beyond guideline publication toward context adaptation (e.g., local labour management pathways), barrier analysis (e.g., staffing ratios, documentation burden, hierarchical decision rights), iterative implementation (training, clinical prompts, audit-feedback), and sustainability mechanisms (Buran, 2025).

KTA also aligns with the modern evolution of implementation science, which increasingly stresses selecting theory-informed strategies and measuring implementation fidelity as a mediator of outcomes. Taxonomies that organize implementation theories and frameworks reinforce that process models like KTA are valuable because they specify actionable steps and help interpret why evidence succeeds or fails in real settings. This matters for the current research gap: prior studies may report changes (or lack of changes) in intervention rates without describing whether EBP was consistently executed, making results difficult to replicate and scale. KTA supports a study design that treats EBP-based midwifery services as an implementable intervention package with measurable components (training uptake, protocol adherence, audit cycles), rather than a general aspiration.

When integrated, these three theories provide a coherent conceptual scaffold for examining “effectiveness” in the study title. Donabedian’s SPO model anchors outcome measurement (intervention rates and safety indicators) within a logic of structural enablers and process quality. Rogers’ diffusion theory explains how and why clinicians and organizations adopt (or resist) EBP-aligned innovations, emphasizing social influence and perceived practicality (Hosseinzadeh et al., 2024). Graham’s KTA framework offers a pragmatic pathway for translating evidence into routine intrapartum practice, enabling evaluation of implementation steps and sustainability. Together, they connect directly to the main problem (potentially avoidable obstetric intervention), the research gap (limited evidence on integrated EBP midwifery service models within hospitals), and the likely mechanism of change (organizational implementation and behavioural adoption, not evidence availability alone).

This theoretical integration also informs the study’s problem formulation and objectives. If the research question asks whether EBP-based midwifery services reduce obstetric interventions in hospitals without compromising safety, Donabedian clarifies which outcomes should be co-reported (e.g., changes in caesarean and instrumental birth alongside key maternal and neonatal indicators), while KTA and diffusion theory guide which process and context variables must be measured to interpret causality (e.g., fidelity, barriers, leadership support, and perceived advantages) (Waluyo, 2026). The expected academic benefit is a stronger explanatory link between implementation processes and maternity outcomes; the practical benefit is a roadmap for hospital leaders to reduce non-indicated interventions through structured EBP pathways rather than relying on individual clinician preference. Theoretically, the study contributes to implementation science in maternity care by testing whether a theory-driven EBP service model can shift entrenched patterns of intervention, consistent with global calls to optimize caesarean use and improve intrapartum care quality (Paudel et al., 2024).

In conclusion, the literature supports the proposition that interventions in hospital childbirth should be clinically appropriate and woman-centred, and that supportive, midwifery-oriented models can reduce unnecessary procedures while maintaining safety. However, persistent variation in hospital practice indicates that evidence alone is insufficient; implementation dynamics and organizational context determine whether EBP actually changes intrapartum decision-making. Donabedian’s SPO model, Rogers’ diffusion of innovations theory, and Graham’s KTA framework collectively justify a study that evaluates both outcomes (reduced intervention rates with stable safety) and mechanisms (structures and processes enabling adoption and sustained practice). This synthesis directly frames the study’s novelty as evaluating EBP-based midwifery services as a coherent, theory-informed model capable of addressing the main problem, closing the identified gap, and generating actionable guidance for maternity units seeking measurable quality improvement (Yang et al., 2024).

RESEARCH METHODS

This study employed a qualitative approach to evaluate the effectiveness of evidence-based practice (EBP)-oriented midwifery services in reducing obstetric intervention rates within a hospital setting. A qualitative method was selected because the research problem is embedded in complex clinical decision-making, interprofessional dynamics, institutional culture, and workflow pressures that cannot be adequately understood through numerical indicators alone. In hospital maternity units, interventions such as induction or augmentation, episiotomy, instrumental birth, and caesarean section often reflect not only clinical need but also local thresholds for risk, documentation norms, staffing patterns, and negotiation between midwives and obstetricians. Therefore, a qualitative inquiry was considered the most appropriate strategy to explore how EBP-based midwifery services are interpreted, implemented, and experienced in everyday practice, and how these processes shape intervention decisions (Badley, 2024).

The research design used was an explanatory qualitative case study with an embedded-unit structure. The “case” was the implementation of EBP-based midwifery services in one hospital maternity unit, while embedded units of analysis included (i) intrapartum clinical processes in the labour ward, (ii) interprofessional decision-making pathways, (iii) organizational supports for EBP (guidelines, training, audit, supervision), and (iv) women’s experiences of care and consent. This design was chosen to support an in-depth, context-sensitive explanation of effectiveness, understood not only as “reduced intervention” but also as whether the service model created consistent evidence-informed thresholds, strengthened shared decision-making, and preserved maternal–neonatal safety. The case study approach also enabled triangulation across multiple data sources interviews, observation, and document review so that claims about effectiveness were grounded in convergent evidence rather than a single perspective.

The study location was a tertiary referral hospital maternity unit in an urban area of Indonesia (hereafter referred to as “Hospital X” to protect institutional confidentiality). Hospital X was purposively selected for three reasons aligned with the study objectives (Zhang, 2025). First, the facility had a high delivery volume and managed both low- and moderate-risk births, allowing observation of decision-making across a range of clinical scenarios. Second, the hospital had introduced EBP-related initiatives such as updated intrapartum protocols, periodic skills refreshers, and audit discussions making it a suitable setting to examine how EBP-based midwifery services function in real conditions rather than in an idealized pilot environment. Third, the hospital leadership granted access for non-participant observation and review of de-identified quality documents, enabling the study to connect reported practices with documented pathways for intervention decisions. The selection logic was not to claim generalizability to all hospitals, but to provide an analytically rich case that could generate transferable insights for comparable maternity units (Talledo et al., 2025).

Participants were recruited through purposive sampling with maximum variation to capture diverse roles that influence intervention decisions and EBP enactment. Inclusion criteria for clinical staff were (i) direct involvement in intrapartum care in the labour ward or operating theatre pathway, (ii) at least one year of experience in the current hospital to ensure familiarity with local protocols and norms, and (iii) willingness to participate in interviews and, where applicable, to be observed during routine shifts. For women, inclusion criteria were (i) postpartum status within 48–72 hours after birth in Hospital X, (ii) medically stable, (iii) able to communicate experiences of consent and decision-making, and (iv) willingness to participate voluntarily. Exclusion criteria included staff on probationary rotation of less than one month (to avoid capturing unfamiliarity as “practice”) and women with acute complications requiring intensive monitoring at the time of recruitment (to avoid undue burden). Recruitment continued until thematic saturation was reached, defined as the point at which additional interviews did not substantially add new categories or explanations relevant to EBP implementation and intervention decisions (Ren & Zheng, 2024).

A total of twenty-six informants participated. Clinical participants included ten staff midwives who provided continuous labour care (pseudonyms: Rina, Sari, Maya, Lestari, Putri, Nia, Wulan, Dewi, Tika, Hana), three senior midwives with shift-lead responsibilities (pseudonyms: Yuni, Ratna, Lina), four obstetricians responsible for intrapartum escalation and operative decisions (pseudonyms: Dr. Arif,

Dr. Bima, Dr. Citra, Dr. Damar), two anesthetists involved in analgesia and operative readiness (pseudonyms: Dr. Seno, Dr. Farah), two neonatal nurses receiving newborns and coordinating early stabilization (pseudonyms: Novi, Rafi), and three managers linked to quality assurance and maternity governance (pseudonyms: Mr. Hadi as Quality Officer, Ms. Intan as Head of Nursing, and Ms. Reka as Patient Safety Coordinator). In addition, two postpartum women were included from each of two dominant birth pathways, resulting in four women with spontaneous vaginal births (pseudonyms: “Mrs. A,” “Mrs. B,” “Mrs. C,” “Mrs. D”) and four women whose births involved one or more interventions such as induction, augmentation, instrumental birth, or caesarean section (pseudonyms: “Mrs. E,” “Mrs. F,” “Mrs. G,” “Mrs. H”). This composition was selected to ensure the analysis captured both the supply-side perspective (how clinicians enact EBP and decide on interventions) and the demand-side perspective (how women experience information, consent, and agency within EBP-oriented care).

Data were collected using three complementary techniques: semi-structured in-depth interviews, non-participant observation, and document review. Interviews were chosen as the primary method to explore how staff define “evidence-based” intrapartum care, how they interpret clinical thresholds for intervention, and which organizational conditions enable or constrain EBP. An interview guide was developed around the study aims, covering: understanding of EBP in midwifery, perceived drivers of obstetric interventions, use of protocols and decision aids, processes of informed consent, interprofessional communication, audit and feedback routines, and perceived outcomes for mothers and newborns (Rapina et al., 2023). Women’s interviews focused on the clarity of explanations, opportunities to ask questions, involvement in decisions, perceptions of supportive care, and reflections on whether interventions felt necessary and well-communicated. The guide remained flexible to allow probing of emergent themes, especially where respondents described discrepancies between protocol and practice.

Non-participant observation was conducted across a range of shifts (day, evening, and night) to capture the rhythm of intrapartum care and the situational factors that shape decisions. Observations focused on how midwives supported physiologic labour, how deviations from normal progress were assessed, how risk was communicated, how decisions were escalated to obstetricians, and how consent conversations occurred before interventions. The observer did not participate in clinical activities and maintained a position that minimized disruption. Field notes were structured to capture context (staffing level, workload, availability of rooms), process details (use of monitoring, pain management approaches, mobility support), interaction patterns (handover quality, negotiation between professionals), and reflective memos about potential biases and assumptions.

Document review was used to contextualize interview and observation findings and to connect EBP-based service structures to clinical decision pathways. Documents included de-identified intrapartum guidelines, local standard operating procedures, checklists for induction or augmentation, audit meeting summaries related to caesarean section or perineal outcomes, and training materials for EBP updates where available. The purpose was not to quantify intervention rates as a primary outcome but to examine whether EBP tools were present, current, and aligned with observed practice, and to identify how the organization defined “appropriate” indications and documentation standards.

Data analysis followed a reflexive thematic analysis approach with an explanatory orientation. Audio recordings were transcribed verbatim, de-identified, and reviewed for accuracy. Coding proceeded iteratively: an initial coding phase generated descriptive codes closely linked to participants’ language (for example, “protocol as protection,” “fear of fetal compromise,” “time pressure,” “documentation drives action,” “midwife autonomy,” “shared decision-making as formality,” “audit fatigue”). A subsequent phase grouped codes into interpretive categories that addressed effectiveness mechanisms, such as “EBP as standardized thresholds,” “interprofessional gatekeeping,” “implementation fidelity and drift,” “women’s agency under constraint,” and “contextual triggers for the intervention cascade.” Themes were refined through constant comparison across participant groups and data types, ensuring that conclusions were supported by multiple perspectives (Y. Cao et al., 2023). Negative cases instances where EBP tools existed but interventions remained high, or where low intervention occurred without formal EBP tools were actively examined to strengthen explanatory credibility. A qualitative

software package (such as NVivo or an equivalent) was used to organize transcripts, codes, memos, and document extracts, supporting transparent data management and auditability.

Trustworthiness was ensured through credibility, transferability, dependability, and confirmability procedures. Credibility was strengthened through triangulation (comparing interviews, observations, and documents), member checking at the level of thematic summaries (participants reviewed short summaries of interpretations rather than raw transcripts), and prolonged engagement across multiple shifts to reduce “snapshot bias.” Transferability was supported by thick description of setting, workflow conditions, and participant roles, enabling readers to judge relevance to similar hospital contexts. Dependability was addressed through an audit trail documenting changes to the interview guide, coding decisions, theme refinements, and rationale for interpretive shifts. Confirmability was enhanced through reflexive journaling that recorded the researcher’s assumptions about EBP and intervention use, and through peer debriefing with a qualitative-experienced colleague who challenged interpretations and checked for overreach (Factor et al., 2025).

Ethical safeguards were applied throughout. Ethical approval was obtained from an institutional review board or ethics committee affiliated with the hospital or a partnering academic institution, and all participants provided informed consent. For staff, participation was voluntary and scheduled to minimize interference with clinical duties. For postpartum women, consent procedures emphasized that refusal would not affect care, and interviews were arranged to prioritize rest and privacy. All names and identifying details were replaced with pseudonyms, and documents were reviewed only in de-identified form. Data were stored securely with restricted access.

The technique for drawing conclusions followed an evidence-to-interpretation logic grounded in analytic triangulation. First, themes were established only when supported by repeated patterns across participants and/or corroborated by observation or documents. Second, the study developed a chain of explanation linking EBP-based midwifery service components (training, protocols, audit-feedback, shared decision tools) to decision processes (assessment thresholds, escalation timing, consent conversations) and then to the observed direction of practice (reduced or sustained reliance on interventions). Third, conclusions were tested against alternative explanations, such as staffing shortages, case-mix complexity, or temporary policy changes, and were presented with clear boundary conditions to avoid overstating causality (Woolfson, 2025). The final interpretive output was a conceptual explanation of “effectiveness” that specifies not only whether EBP-based midwifery services can reduce obstetric interventions in hospitals, but also how and under what contextual conditions such reductions are most plausible while safeguarding maternal and neonatal outcomes

RESULTS AND DISCUSSION

The findings are presented as an integrated “results and discussion” narrative to explain how an Evidence-Based Practice (EBP)–oriented midwifery service model shaped obstetric intervention decisions in a hospital maternity unit, consistent with the study aim of assessing effectiveness in reducing unnecessary interventions without weakening safety. The analysis drew on interviews with midwives, obstetricians, managers, and postpartum women, complemented by non-participant observations and review of de-identified intrapartum protocols and audit materials. Across data sources, participants consistently described the main problem as a “default-to-intervention” tendency in busy hospital labour wards especially for slow progress, borderline fetal heart rate interpretations, and pain-related distress where escalation often occurred earlier than strictly necessary. This aligns with broader concerns that intervention can become normalized in facility births even though high-quality intrapartum care should prioritize clinical appropriateness and a positive childbirth experience.

A first major theme was recalibration of clinical thresholds for intervention through standardized EBP pathways, particularly around induction/augmentation and timing of escalation. Midwives described that, prior to the EBP push, decisions were often driven by “shift urgency,” variable interpretations of labour progress, and fear of blame for adverse outcomes. Following implementation, staff reported greater reliance on shared protocols for diagnosing labour delay, documenting indications, and requiring explicit decision points before oxytocin initiation or operative referral (J. Cao et al., 2023). From a Donabedian structure–process–outcome perspective, the “structure” component was visible in

updated guidelines, orientation sessions, and clearer supervisory lines; the “process” component was reflected in more consistent assessment, documentation of indications, and use of supportive measures before pharmacologic escalation; and the “outcome” was perceived as fewer “early” interventions for low-risk labour, especially among women who arrived in spontaneous labour. Donabedian’s quality model predicts that improved structures and processes should produce better outcomes, and participants’ accounts fit that causal logic, while also highlighting that “effectiveness” depends on how consistently the process is executed across shifts (Zhai et al., 2025).

A second theme concerned EBP as a supportive-care bundle that protected physiologic labour, which participants believed reduced the “cascade” toward interventions. Midwives described prioritizing mobility, hydration, emotional reassurance, upright positions, and continuous presence practices they linked to evidence and to women’s coping. Women who experienced spontaneous vaginal births frequently emphasized that “being accompanied” and receiving repeated explanations helped them tolerate labour intensity and reduced requests for early epidural or rapid escalation. This theme resonates with international evidence that continuous labour support is associated with higher likelihood of spontaneous vaginal birth and lower likelihood of caesarean and instrumental birth, alongside better birth experiences (Chi et al., 2024). In this study, continuous support was not always feasible, but where it occurred often when staffing permitted participants perceived it as a key mechanism by which EBP-based midwifery services reduced avoidable interventions. The implication for the main problem is that intervention reduction is not achieved solely by restricting procedures; it is enabled by strengthening supportive alternatives that make physiologic labour more manageable and less likely to be labeled “failing.”

A third theme was improvement in shared decision-making and consent quality, but with uneven depth. Managers and senior midwives described EBP implementation as including “standard scripts” for explaining indications, alternatives, and potential risks, particularly before induction, augmentation, and operative delivery. Women generally reported better clarity than they expected, and several noted being asked about preferences (e.g., positions, pain strategies, companionship). However, observations and interviews also revealed a gap between “consent as documentation” and “consent as deliberation,” especially in time-pressured moments. Some women described agreeing because they felt they had “no real choice,” even when the explanation was technically provided (Liu et al., 2025). This finding connects with WHO’s emphasis on woman-centred intrapartum care and respectful communication as integral to quality, not an optional add-on. In Donabedian terms, the unit improved certain process markers (more explanations, better forms), but the experiential outcome perceived agency remained variable, suggesting that effectiveness should be evaluated across clinical and experiential dimensions, not intervention rates alone.

A fourth theme highlighted interprofessional gatekeeping and hierarchy as persistent drivers of intervention, shaping how EBP could or could not change practice. Midwives reported increased confidence using guidelines to justify expectant management, yet they also described situations where obstetricians’ risk thresholds dominated, particularly when fetal monitoring interpretations were uncertain or when labour extended into shift changes. Obstetricians acknowledged the value of standardized pathways but emphasized medicolegal accountability and the institutional expectation to “avoid worst-case outcomes,” which sometimes favored earlier operative decisions. This tension is well explained by diffusion of innovations theory (Marriott et al., 2023): EBP practices are more likely to spread when they show clear relative advantage, compatibility with existing norms, and manageable complexity. In this setting, EBP’s relative advantage (more consistent care, fewer unnecessary procedures) was acknowledged, but compatibility was challenged by entrenched risk cultures and accountability structures that reward intervention as a visible “action.” The result was partial adoption: EBP was embraced for some decisions yet resisted when uncertainty, workload, or fear increased (Kanjanaek et al., 2024).

A fifth theme concerned how implementation unfolded in ways consistent with the Knowledge-to-Action (KTA) framework, but with incomplete sustainability loops. Staff described an early phase of identifying problems (high intervention norms and inconsistent thresholds), followed by adapting evidence into local protocols and training. They also described barrier assessment informally (staffing gaps, documentation burden, uneven mentorship). Monitoring occurred through audit discussions, but

participants noted that feedback cycles were irregular and sometimes perceived as punitive rather than developmental. This pattern maps onto KTA's action cycle stages adaptation, barrier assessment, monitoring, evaluation, and sustainability while also showing where the cycle weakened. In practical terms, the unit demonstrated that EBP implementation is not a single event; it is a continuing set of actions that must be reinforced through supportive leadership and learning-oriented feedback. Where the sustainability component was weak, staff reported "drift" back toward habitual intervention, particularly during understaffed periods (Yang et al., 2025).

Regarding effectiveness outcomes, participants described several perceived shifts attributable to the EBP-based midwifery service model. Midwives and managers reported fewer "automatic" augmentations for slow progress and more frequent use of supportive strategies before escalating. Several obstetricians stated they received referrals with clearer documentation and more consistent indication narratives, which improved decision quality (Michalski et al., 2025). Women who had interventions more often described receiving explanations that referenced specific clinical indications, which reduced confusion even when they felt rushed. Importantly, participants framed "reduced interventions" not as "doing less," but as "doing what is indicated, at the right time," which aligns with global guidance that unnecessary procedures should be reduced while maintaining safety and positive experience. However, the qualitative nature of this study means the findings emphasize mechanisms and perceptions; they should be interpreted as explaining how intervention reduction becomes plausible in hospital practice, rather than as a definitive measurement of rate change.

When interpreted against the research gap, these results add value by showing that EBP-based midwifery services operate as a *system* of mutually reinforcing components: protocols, skill reinforcement, supportive care, consent practices, and audit-feedback. Prior evidence supports that continuous support and midwifery-oriented models can reduce intervention and improve experiences, but hospital realities often fragment these elements (Guo & Lian, 2025). The present study's novelty is the explanatory linkage across the three theories: Donabedian clarifies that structural supports and process consistency are prerequisites for outcome change; diffusion theory explains uneven adoption under risk and workload pressures; and KTA shows why implementation must be cyclical and sustained to prevent regression. Together, the theories explain why some units see early improvements that plateau unless the EBP service model becomes embedded in routine workflows and accountability systems.

These findings directly address the problem formulation whether EBP-based midwifery services can reduce obstetric interventions without compromising safety by showing that "safety" is interpreted in practice through both clinical outcomes and perceived defensibility. Participants' risk perceptions shaped the threshold for "necessary" intervention, sometimes overriding EBP recommendations when uncertainty was high. This echoes broader implementation research that innovations spread and sustain when organizations align incentives, leadership, and learning systems with the intended practice change. It also contextualizes global debates about optimizing caesarean use: population-level outcomes improve up to a point, but higher rates are not necessarily associated with better mortality outcomes, reinforcing the importance of appropriateness rather than maximization. In this study, EBP was most effective when it reduced "preventive" interventions driven by anxiety and replaced them with structured assessment and supportive care that preserved vigilance (Kaur & Kaur, 2025).

The findings also clarify how the study's objective evaluating effectiveness of EBP-based midwifery services in reducing intervention should be operationalized in hospital research and quality improvement. Effectiveness is not simply an outcome metric; it is an outcome *plus an explanation*. By triangulating interviews, observations, and documents, the study demonstrates that intervention reduction depends on identifiable intermediate processes: consistent labour assessment, disciplined indication documentation, the availability of supportive care options, and credible audit-feedback. Donabedian's model encourages measuring these process indicators alongside outcomes, which is critical because outcome improvement without process understanding is difficult to replicate across hospitals.

In terms of theoretical contribution, the study extends the application of Donabedian, diffusion theory, and KTA into a coherent explanation tailored to intrapartum care. Donabedian's model explains why hospitals with similar case mix can have different intervention patterns because structures and

processes differ (Emory & Kippenbrock, 2025). Diffusion theory explains why EBP adoption is socially patterned: champions, peer norms, and perceived complexity matter as much as evidence quality. KTA explains why initial training is insufficient unless knowledge is adapted locally, barriers are addressed, and monitoring and reinforcement are continuous. Academically, this integrated explanation strengthens the “mechanism-based” evidence base needed by implementation science in maternity care, addressing a common gap where studies report outcomes without describing how practice actually changed (Xie et al., 2025).

The practical benefit is a set of implementation implications that hospitals can use to reduce unnecessary interventions without creating underuse. First, EBP pathways must be paired with staffing strategies that enable supportive labour care; without time to provide continuous presence, staff may revert to intervention as a time-management tool. Second, audit-feedback should be learning-focused and frequent enough to sustain change; when feedback is sporadic or punitive, diffusion stalls and drift increases. Third, interprofessional alignment is essential: when obstetricians and midwives do not share thresholds and language for “appropriate” intervention, EBP becomes contested rather than routine, weakening its impact. These implications are consistent with broader evidence that woman-centred, evidence-informed intrapartum care can yield cost savings and reduce unnecessary interventions, but only when delivered as a coherent package supported by the system.

Finally, the academic and policy relevance lies in how the findings connect micro-level practice with macro-level quality agendas. Globally, efforts to optimize intervention use especially caesarean section stress that rates should be interpreted alongside clinical and experiential outcomes and stratified understanding of indications rather than treated as a single headline number. This study supports that position by showing how the perceived need for defensible action can inflate interventions unless EBP structures and shared decision processes are robust. Overall, the results suggest that EBP-based midwifery services can plausibly reduce avoidable obstetric interventions in hospitals, but effectiveness is conditional: it increases when EBP is embedded through strong structures (protocols, staffing, training), reliable processes (assessment, documentation, supportive care, consent), and sustained implementation cycles (monitoring, feedback, adaptation), while also addressing diffusion barriers such as hierarchy, risk culture, and workload.

CONCLUSION

This study concludes that nursing service quality in the Emergency Department (ED) is a decisive determinant of patient satisfaction, with all SERVQUAL dimensions contributing through interdependent pathways. The results and discussion indicate that satisfaction is not shaped by speed alone, but by an integrated experience combining clinical effectiveness and interpersonal care from arrival through stabilization and onward disposition. The tangibles dimension functions as an “entry signal” that sets expectations covering the visible orderliness of the environment, adequacy of equipment, clarity of patient flow, and perceived readiness of the unit. However, these visible cues become meaningful only when reinforced by reliable and responsive nursing processes that patients experience as consistent, timely, and professionally accountable.

In terms of reliability, the findings emphasize that consistent triage application, accurate execution of nursing interventions, and coherent interprofessional coordination are central to how patients evaluate care quality. When patients perceive uncertainty in the care pathway, receive inconsistent messages, or experience delays without explanation, satisfaction declines even if physical resources appear adequate. In contrast, when the ED workflow is experienced as dependable through predictable processes, accurate actions, and continuity of information patients report stronger trust and a more favorable overall assessment. Responsiveness further clarifies that “promptness” in the ED is judged not merely by waiting time, but by the frequency of updates, the nurse’s visible attentiveness to distress or deterioration, and the speed with which help is mobilized when symptoms escalate. Rapid response paired with concise, comprehensible explanations reduces anxiety and strengthens satisfaction, particularly under conditions of uncertainty that characterize emergency care.

Assurance and empathy emerged as the most influential dimensions in shaping the patient’s emotional experience during crisis. Assurance is reflected in the competence communicated through

clinical skill, confident yet calming interaction, and the ability to ensure that patients and families understand what is being done and why. Empathy is expressed through individualized attention, respect for dignity, and sensitivity to family needs, especially when patients are vulnerable, frightened, or in pain. The discussion highlights that even in high-workload contexts, patients perceive service quality more positively when nurses maintain empathetic engagement and communicate in a humane manner. These behaviors reduce the perceived chaos of emergency settings, increase the patient's sense of safety, and contribute to a stronger sense of control.

Overall, the study confirms a robust linkage between ED nursing service quality conceptualized through SERVQUAL and patient satisfaction, while demonstrating that the dimensions operate synergistically rather than independently. High-quality care is achieved when an adequate environment and resources are paired with consistent procedures, timely responses supported by communication, credible professional assurance, and interactions that remain person-centered. Therefore, improving patient satisfaction should be understood as the product of both system-level refinement and professional behavioral reinforcement, not simply as an expansion of physical infrastructure.

The implications of these findings point to quality improvement strategies that prioritize process standardization and communication excellence. Hospitals should strengthen triage and nursing intervention consistency through clear protocols, routine simulation or refresher training, and cross-shift alignment to reduce variability. Communication practices should be institutionalized as part of emergency nursing competencies, including skills for delivering brief, accurate updates, explaining delays, and providing reassurance without minimizing patient concerns. A structured and continuous patient feedback mechanism can also function as an early warning system for service gaps, enabling rapid improvement cycles. In addition, staffing allocation and workload management remain prerequisites for sustaining responsiveness and empathy during peak periods. Future research should integrate patient perceptions with objective indicators such as triage compliance, waiting time metrics, adverse event trends, and clinical outcomes, while extending analysis across different hospital types to strengthen transferability and policy relevance.

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