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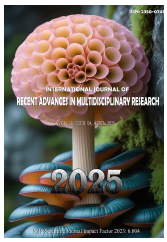

# RESEARCH ARTICLE

## A REVIEW ARTICLE ON EVIDENCE BASED PERINATAL CARE PRACTICES: EVIDENCES IN LIGHT OF CURRENT PRACTICES IN INDIA

**[1*]Manita Dalal and [2]Dr. Lekha Viswanath**

[1]Tutor, College of Nursing, All India Institute of Medical Sciences, New Delhi, India
[2]Principal, Amrita College of Nursing and Deputy Nursing, Director, Amrita Hospital, Faridabad, Haryana, India

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***Corresponding author:***
***Manita Dalal***

**ABSTRACT**

Many maternity care practices, initially developed to address specific clinical issues, are now frequently applied routinely, even among healthy women. This widespread use of interventions—often without clear medical indication—can expose mothers and newborns to unnecessary risks with minimal or no therapeutic benefit. Conversely, several interventions with proven efficacy remain underutilized.Evidence-based maternity care emphasizes the adoption of practices that are both effective and minimally invasive, prioritizing approaches with established benefits and minimal harm. Bridging the gap between current clinical practices and research evidence is essential to improving the quality of maternity care and reducing out-of-pocket-expenditures for the public.Achieving this requires the promotion and implementation of evidence-based perinatal care. However, several barriers hinder this transition, including organizational constraints, individual resistance, communication challenges, lack of high-quality research, and insufficient evidence in certain areas.To overcome these challenges, it is necessary to establish dedicated national, regional, and local frameworks that support the production, dissemination, and implementation of evidence-based knowledge. These structures should aim to standardize clinical practices and support the ongoing professional development of nurses and midwives.Given that nurses represent the largest segment of the healthcare workforce, they play a pivotal role as both generators and users of research evidence. Their active involvement in the development and application of evidence-based maternity care practices is essential to ensuring the health and well-being of mothers and infants.



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## INTRODUCTION

Women are the central foundation of families, communities, nations, and the broader global society. Strengthening the health of mothers and children represents a vital strategic investment in improving a country's overall social and developmental outcomes. In 2015, India joined 192 other countries in committing to the Sustainable Development Goals (SDGs), which aim to create a healthier, safer world by 2030 (1). These goals include ambitious targets related to maternal, newborn, and child health, all framed within the broader vision of achieving Universal Health Coverage by the end of the decade.Beyond ensuring access to healthcare for all, enhancing the quality of care is fundamental in lowering maternal and neonatal mortality rates and in meeting the SDG health targets. Over the past decade, India has made considerable progress in terms of improved maternal and neonatal indicators. The country's Maternal Mortality Ratio (MMR) declined from 113 per 100,000 live births in 2016–18 to 97 per 100,000 live births during 2018–2020 (2). The rate of institutional deliveries also rose significantly, from 79% in 2015–16 to 89% in 2019–21 (3).Despite progress made during the Millennium Development Goals era, the global burden of maternal and neonatal mortality remains alarming. Every day, approximately 830 women and 7,000 newborns die due to complications related to pregnancy and childbirth. Notably, over 50% of maternal deaths and more than 60% of neonatal deaths are linked to substandard care quality (4).Addressing these preventable deaths requires a critical re-evaluation of existing maternity care practices. It is imperative to shift toward a model grounded in robust scientific evidence—replacing outdated or less effective interventions with those that are proven to be beneficial. This highlights the urgent need to promote evidence-based perinatal care as a cornerstone of quality improvement in maternal and newborn health services.

**CONCEPT OF EVIDENCE BASED PERINATAL CARE:** Evidence-based practice refers to the careful, transparent, and thoughtful application of the current and reliable evidence when making decisions regarding the care of individuals or

populations. It involves a balanced integration of clinical expertise, patient values, and the best available scientific research (5). In healthcare, practicing evidence-based medicine entails combining a clinician's personal experience with high-quality external research to inform clinical decisions. Within maternal and newborn health, terms such as Evidence-based Maternity Care, Evidence-based Perinatal Care, and Evidence-based Obstetric Care are often used interchangeably, all referring to the same foundational concept. Evidence-based maternity care relies on the most credible research regarding the safety and effectiveness of various practices to support clinical decision-making. Its aim is to achieve the best possible outcomes for both mothers and infants by prioritizing interventions that are proven, minimally invasive, and associated with little to no risk of harm whenever feasible (6).

## HISTORY OF EVIDENCE BASED PERINATAL CARE

The use of evidence to guide human decisions dates back to the earliest historical records. The ability to observe and infer cause-and-effect relationships is fundamental to human reasoning. However, the application of this principle to reproductive healthcare was relatively delayed. In the 1960s, the UK Medical Research Council (MRC) regarded reproductive medicine as lacking scientific rigor. This sentiment was echoed by Archie Cochrane in the 1970s, who criticized the field for its unstructured approach to care delivery. By 1989, however, reproductive medicine had evolved into a leading discipline in evidence-based clinical practice, thanks in large part to the work of Iain Chalmers (7).

The formal emergence of evidence-based medicine is commonly traced back to 1972 with the publication of 'Effectiveness and Efficiency: Random Reflections on Health Services' by Archie Cochrane, a London-based physician (8). His experiences as a prisoner-of-war medical officer and the post-World War II pressures on the UK's National Health Service inspired him to emphasize the critical need for well-documented, reliable evidence in healthcare. Cochrane's call for systematic research summaries led to the founding of the Cochrane Centre in Oxford in 1993 and the establishment of the Cochrane Collaboration—now a globally recognized network producing high-quality, evidence-based health information (9). Around the same period, faculty at McMaster University in Canada, led by Dr. David Sackett, introduced the concept of evidence-based medicine as a structured clinical learning model. This approach emphasized the use of the best available evidence in conjunction with clinical expertise, eventually evolving into a multidisciplinary standard of care applicable across all areas of healthcare (9). In an essay published in 1979, Cochrane criticized obstetrics and gynecology for lacking a robust scientific foundation, referring to it as "the least scientific" of medical specialties (10). This critique was also reflected in the archives of the MRC and the Royal College of Obstetricians and Gynaecologists (RCOG) during the 1960s (10,11). Reports from both RCOG and MRC identified multiple challenges in generating reliable evidence in obstetrics, including the prioritization of clinical training over research, ethical dilemmas, and inadequate funding for studies involving pregnant women and assisted reproductive technologies like in vitro fertilization (10,11). Furthermore, the lack of rigorous research in reproductive medicine was not limited to the UK, as historical analyses of practices in the United States revealed similar patterns (7). Despite these early limitations, the field began to shift. A turning point came in 1982 with the publication of 'Effectiveness and Satisfaction in Antenatal Care', edited by Murray Enkin and Iain Chalmers. Chalmers also played a pivotal role in founding the National Perinatal Epidemiology Unit in Oxford in 1978, a Department of Health–funded initiative under the NHS. This effort laid the groundwork for the establishment of the UK Cochrane Centre in 1992 and later the broader Cochrane Collaboration, which became an authoritative global repository of evidence-based healthcare information. Notably, one of the earliest Cochrane interest groups focused on reproductive health (7). With these developments, the foundations of evidence-based perinatal care were firmly established. Today, maternity care providers have access to a wealth of high-quality evidence, including WHO guidelines, the Cochrane Database, and the WHO Reproductive Health Library.

## EVIDENCE BASED PERINATAL CARE – CURRENT SCENARIO

Numerous maternity practices that were initially intended to manage specific complications are now frequently applied to healthy women, often without necessity (12). This widespread and sometimes unnecessary use increases the risk of harm for both mothers and newborns, while offering minimal or no medical benefit (6). Conversely, several interventions that have demonstrated effectiveness are not being sufficiently utilized. These contrasting issues emphasize the importance of promoting evidence-based perinatal care. The table below outlines WHO's recommended guidelines for antenatal (13) and intranatal care (14) aimed at ensuring a positive pregnancy experience, along with research findings that illustrate the extent to which these guidelines are currently being followed—or not followed—in India.

As per the World Health Organization (WHO) guidance 2015, "at a population level, C- Section rates higher than 10% are not associated with reductions in maternal and newborn mortality rates The rate of C-section deliveries in India ,almost doubled from 9 percent in 2005-06 to 17 percent in 2015-16. C-sections are particularly common in private sector health facilities (41% of deliveries)" [(29)].Prevalent practices deviate substantially from a wide range of national and international evidence-based guidelines, which emphasizes the need of Promotion of Evidence based Perinatal care.

## NEED TO PROMOTE EVIDENCE BASED PERINATAL CARE

Evidence-based maternity care holds critical value due to the sensitivity of the perinatal phase, which has lasting implications for health—both positive and negative—and is characterized by a significant degree of uncertainty around the impact of many possible exposures (6). This importance is further elaborated in the subsequent section.

**Bridging the gap between evidence and practice:** Continuous advancements in healthcare technology and methods offer promising avenues for enhancing patient safety and outcomes. However, findings from research conducted in the USA and the Netherlands highlight that approximately 30–40% of patients do not receive care that aligns with current

**Table 1. WHO Recommendations on Antenatal Care (ANC) for a Positive Pregnancy Experience – 2016**

| S.No. | WHO Recommendation | Current Scenario |
|---|---|---|
| 1 | Pregnant women should receive counselling on healthy eating habits and maintaining physical activity to support maternal health and avoid excessive weight gain. | Despite being cost-effective, counselling during the perinatal period remains underutilized. A study from Chandigarh showed that only 28.1% of women received guidance on diet and rest, and merely 7.5% were informed about pregnancy danger signs [15]. |
| 2 | Consistent physical activity during pregnancy is recommended to reduce the risk of lower back and pelvic pain. Treatment options such as physiotherapy, support garments, and acupuncture can be considered based on individual preference and local availability. | |
| 3 | Lifestyle and dietary advice should be provided to manage and prevent heartburn during pregnancy. If symptoms persist, antacids may be considered. | |
| 4 | Remedies such as ginger, chamomile, vitamin B6, and acupuncture are suggested to ease early pregnancy nausea, considering the woman's choices and resources. | |
| 5 | Continuity of care led by midwives—where the same midwife or team is involved throughout antenatal to postnatal care—is advised in systems with effective midwifery services. | Until recently, Indian government failed to recognise and support independent midwifery. The latest government initiatives have introduced Nurse Practitioners in Midwifery (NPMs), but practical implementation is still awaited [4]. |
| 6 | Daily iron (30–60 mg) and folic acid (400 µg) supplementation is advised to prevent maternal anaemia, sepsis, preterm birth, and low birth weight. | Data reveals only 30.8% of pregnant women consumed iron-folic acid (IFA) tablets for a minimum of 100 days [3]. |
| 7 | A single ultrasound before 24 weeks gestation is advised to confirm gestational age, detect anomalies, and improve pregnancy outcomes. | Private hospital patients underwent more scans (average of 4.3) compared to those in public hospitals (average of 2.5) [16]. |

**Table 2. WHO Recommendations on Intrapartum Care for a Positive Childbirth Experience – 2018**

| S.No. | WHO Recommendation | Revised Scenario Description |
|---|---|---|
| 1 | All women should receive respectful maternity care. | Contrary to this guidance, many maternity facilities demonstrate high levels of disrespect and lack communication during care [17-22]. |
| 2 | Maternity care providers should communicate effectively using simple, culturally sensitive methods. | |
| 3 | Women should be supported by a companion of their choice during labour and childbirth. | A survey in Delhi found that only about 1% of women had a labour companion [23]. |
| 4 | Labour typically doesn't accelerate until the cervix dilates to 5 cm, and the use of medical interventions to accelerate labour and birth (such as oxytocin augmentation or caesarean section) before this threshold is not recommended, provided fetal and maternal conditions are reassuring. | Induction or augmentation of labour without clinical indication is widespread. In Rajasthan, 93% of deliveries involved such interventions. In Karnataka, oxytocin was administered to 76.4% of home births and 23% of institutional births [24][26]. |
| 5 | Routine shaving of the perineal or pubic area before vaginal delivery is not advised. | Harmful interventions, including pubic shaving, enema, fundal pressure, and non-indicated episiotomy, were avoided in just 4.3% of deliveries in studies from Uttar Pradesh and Rajasthan [25][26]. |
| 6 | Enema use for preventing labour augmentation is not recommended. | |
| 7 | Epidural analgesia should be available to women who desire pain relief during labour. | A Tamil Nadu study revealed that 86% of women were unaware of epidural options. Labour analgesia was utilized in only 11% of cases, mainly in urban areas, with a mere 0.8% usage in government facilities [27]. |
| 8 | Relaxation methods like breathing exercises, music, mindfulness, and progressive muscle relaxation are recommended for labour pain relief. | Awareness and use of non-drug pain relief methods among antenatal women are generally low, affecting their application [28]. |
| 9 | Manual pain relief techniques, such as massage or warm compresses, can be offered during labour. | |
| 10 | Women should be encouraged to choose their preferred birth position during the second stage of labour. | Studies from Uttar Pradesh and Rajasthan indicate that 92% of women weren't given a choice in birthing positions [25][26]. |
| 11 | Episiotomy should not be routinely performed during spontaneous vaginal delivery. | Across 18 tertiary hospitals in India, 63% of vaginal births included an episiotomy. In Rajasthan, 77% of first-time mothers underwent the procedure [26][49]. |
| 12 | Newborns born through clear amniotic fluid who breathe spontaneously should not undergo routine suctioning. | Despite recommendations, suctioning of all newborns, regardless of fluid status, was observed in 75% of deliveries in Rajasthan [26]. |

scientific recommendations, while 20–25% of administered care may be unnecessary or potentially harmful (30,31). Disparities between established guidelines and clinical practice have been documented in various aspects of perinatal care, including labour support, nutrition, infection control, screening protocols, and the management of respiratory and cardiovascular conditions (32–35). When high-quality evidence exists but remains under- or over-utilized in real-world settings, it becomes essential to promote the adoption of evidence-based approaches in perinatal care to bridge this gap.

**Enhancing Quality in Perinatal Services:** Healthcare practices that were once standard two decades ago may now be obsolete and potentially detrimental to care quality. Persisting with outdated interventions compromises the safety and well-being of mothers and newborns—among the most vulnerable groups in healthcare. In his 1972 report, Cochrane emphasized that clinical services, particularly within the UK's NHS, should be informed by scientific research, with randomized controlled trials playing a pivotal role in shaping best practices (8). The dissemination of such trial outcomes can directly impact clinical care. WHO's Quality of Care

Framework for maternal and newborn health underscores the importance of evidence-based interventions alongside other key elements such as respectful care and efficient referral systems (36).

**Reducing Costs in Perinatal Healthcare:** High out-of-pocket expenditure (OOPE) remains a significant contributor to financial strain, often pushing families below the poverty line—a point well documented in health economics literature (37,38). According to NFHS data, the average OOPE for facility-based childbirth in India is INR 7,938, with private facilities charging around five times more (INR 16,522) compared to public facilities (INR 3,198). Given India's birth rate of 20.4 per 1,000 population, maternity care represents a substantial portion of healthcare-related expenses. Non-compliance with evidence-based practices can lead to preventable complications, increased resource utilization, and inflated healthcare costs for both families and the broader healthcare system. Implementing evidence-based guidelines provides a path to more effective and affordable maternal care, benefiting both health outcomes and economic sustainability.

## BARRIERS TO EVIDENCE BASED PRACTICE

Even when healthcare providers such as doctors and nurses are aware of and open to applying evidence-based practices, modifying long-standing clinical routines can be quite challenging—especially within environments that do not foster or support change.

**Organisational Barriers:** Barriers at the organizational level are often linked to the environment in which the evidence is to be applied. One of the most significant limitations identified is lack of time (39,40). Nurses across various countries have cited limited time for reading, critically evaluating, applying, and disseminating research findings as a major obstacle. Additionally, Hutchinson and Johnston's study in Australia and similar findings from nurses in Hong Kong reveal that the biggest barrier was the lack of authority to initiate changes in clinical settings (39,40). Poor infrastructure (39,41) and insufficient institutional support for applying research findings (41) also emerge as critical impediments to implementation.

**Professional and Individual-Level Barriers:** On an individual level, several factors hinder the adoption of evidence-based practices. These include insufficient understanding of research methodologies, limited exposure to current research, and unfavorable attitudes toward research itself (42). In a study by Moreno Casbas et al., an inability to assess the quality of research emerged as the most significant hurdle (43). In some instances, healthcare providers also report lacking the skills or confidence to carry out new practices—for instance, many birth attendants in Rajasthan stated they were not capable of facilitating deliveries in upright positions (26).

**Communication Barriers:** The way research is communicated significantly affects its uptake. Numerous studies highlight issues such as poor access to published research, fragmentation of literature across various platforms (39,41), limited awareness of where to find research (41), and the complexity of statistical language used in publications, which often makes interpretation difficult for non-experts.

**Issues with Research Quality:** The quality of research itself can serve as a barrier. Methodological weaknesses, unclear conclusions, and contradictory results are all challenges that make it difficult for less experienced practitioners to rely on published findings. Delays in publishing and uncertainties surrounding research outcomes also contribute to the perception that research lacks practical value or reliability.

**Gaps in Available Evidence:** Despite the continual growth in medical research, key clinical questions often remain unanswered. Frequently, the available evidence does not address the complexities healthcare providers face when treating patients with non-specific or overlapping conditions. Much of the research is commercially driven, prioritizing pharmaceutical treatments over behavioural or preventive interventions. For example, while there is extensive data on drug therapy for secondary prevention of cardiovascular issues, evidence regarding the effectiveness of non-pharmacological measures like smoking cessation remains limited. This creates a risk that evidence-based medicine will focus more on what is readily available and quantifiable, rather than what is most clinically meaningful or necessary (44).

## STRATEGIES TO PROMOTE EVIDENCE BASED PERINATAL CARE

Reforming healthcare management practices at the national, regional, and local levels is essential to advance evidence-based nursing and midwifery.

**This transformation necessitates the establishment of dedicated structures aimed at:**

- Generating, sharing, and implementing research-based knowledge,
- Promoting consistency in clinical practices,
- Supporting the continuous development of nursing and midwifery competencies.

Healthcare organizations hold a vital responsibility in building and maintaining systems that support evidence-based practice (EBP). This includes ensuring staff competency, monitoring care outcomes, and making practice adjustments when necessary. Additionally, organizations should create tools grounded in evidence to provide managers with feedback on EBP adherence. A crucial component of effective evidence dissemination is the presence of robust communication systems within the organization. For EBP to become an integral part of nursing and midwifery, it is important that practitioners are well-informed about clinical guidelines, systematic reviews, and evidence-based recommendations that guide consistent and high-quality care. Fostering a workplace culture that embraces EBP is equally critical (45).

**Role of Clinical Audit in Quality Improvement:** Clinical audits serve as a key quality enhancement mechanism, offering insight into the gap between existing practices and optimal standards. The underlying principle is that when practitioners are presented with data indicating deviations from desired performance levels, they are more likely to revise their practices accordingly (46).

**Impact of Educational Interventions:** Educational interventions can positively influence clinical behaviors and outcomes. In one institutional study, such an intervention led to a 5.3 percentage point (p.p.) increase in the rate of normal deliveries. Feedback from patients indicated a notable rise in

the presence of companions during labor (10.0 p.p.) and greater use of upright or squatting birth positions (31.4 p.p.).

At the same time, there were significant reductions in the use of amniotomy (16.8 p.p.), the lithotomy position (24.3 p.p.), and intravenous oxytocin (17.1 p.p.). From the clinicians' perspective, a 29.6 p.p. decrease was noted in oxytocin usage. Medical record analysis also showed a decline in amniotomy (29.5 p.p.) and lithotomy position use (1.5 p.p.), while the application of upright or squatting positions increased by 2.2 p.p. (47).

## ROLE OF NURSE IN EVIDENCE BASED PERINATAL CARE

With the growing focus on evidence-based approaches in perinatal care, nurses are increasingly expected to participate in various aspects of research application and generation. Their involvement spans a broad continuum—from being informed users of research to active contributors in its production.At one end of this continuum are research consumers—nurses who regularly engage with scholarly literature to enhance their knowledge, refine clinical skills, and stay current with evidence that may influence their practice. These nurses play a vital role in applying research findings to improve perinatal care. The effectiveness of evidence-based practice (EBP) relies heavily on such well-informed nursing professionals. At the opposite end are nurse researchers—those who design and conduct original studies. While academic faculty traditionally led this area, increasing numbers of clinical nurses are now initiating research projects to determine the most effective interventions for their patient populations.

**Ways Nurses Can Contribute to Evidence-Based Perinatal Practice:**

- Nurses can support and promote EBP in perinatal settings through a variety of actions, including:
- Taking part in journal clubs that facilitate group discussions and critiques of current research articles.
- Attending research-focused presentations at nursing or interdisciplinary conferences.
- Making clinical decisions guided by high-quality, research-based evidence.
- Collaborating on the development of ideas for clinical research projects.
- Reviewing proposed research protocols and offering clinical insights to enhance study design.
- Assisting research teams by identifying eligible participants and gathering data.
- Engaging clients in discussions about the meaning and practical relevance of research findings.

# CONCLUSION

Nurses being the largest health workforce plays a crucial role both as a creator and consumer of research evidence. Active participation of nurses in generation and utilisation of Evidence- based maternity practices is crucial for healthy mother and babies.

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