

# Maternal-Newborn Nursing: Thirteen Obstacles Affecting Practice Excellence

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## Abstract

*Maternal-newborn nursing faces numerous challenges that significantly influence the delivery of excellent care. This paper explores thirteen key challenges impacting the practice of maternal-newborn nursing globally. These challenges range from socio-economic factors affecting access to healthcare, cultural beliefs impacting maternal health decisions, to technological advancements shaping neonatal care practices. Understanding and addressing these challenges are crucial for enhancing the quality and effectiveness of maternal-newborn nursing care, ultimately improving maternal and neonatal health outcomes.*

**Keywords:** *Maternal-newborn nursing, challenges, excellence in practice, healthcare access, cultural beliefs, socio-economic factors, technological advancements, neonatal care, maternal health decisions, healthcare outcomes.*

## 1.Introduction

Maternal-newborn nursing stands at the intersection of care, compassion, and complexity within the healthcare landscape. This specialized field encompasses the holistic care of women throughout their pregnancy journey, childbirth, and the postpartum period, while also focusing on the health and well-being of newborn infants during their crucial early days of life(1). The pursuit of excellence in maternal-newborn nursing is shaped by numerous challenges that impact both caregivers and the outcomes of those they serve.

Firstly, one of the primary challenges faced in this field is ensuring equitable access to quality prenatal care and education. Disparities in access can lead to differential health outcomes among diverse socioeconomic and ethnic groups, highlighting the need for targeted interventions and support systems that address these inequalities. Additionally, the integration of evidence-based practices into clinical settings remains a constant challenge, requiring ongoing education and adaptation to new research findings and clinical guidelines.

The emotional and psychological aspects of maternal-newborn care present another significant hurdle. Nurses in this specialty must navigate complex dynamics, providing not only physical care but also emotional support to expectant mothers and their families(2). Managing the anxieties, expectations, and sometimes grief that accompany the journey through pregnancy and childbirth demands a high level of empathy, communication skills, and cultural sensitivity from healthcare providers.

Moreover, the rise in maternal and neonatal health complications further complicates the landscape of maternal-newborn nursing. From the increasing prevalence of maternal obesity and gestational diabetes to the challenges posed by premature births and congenital abnormalities, nurses must be prepared to address a wide array of medical complexities while maintaining a patient-centered approach to care.

Technological advancements and innovations in healthcare also bring both opportunities and challenges to maternal-newborn nursing practice. While technologies such as fetal monitoring systems and telemedicine can enhance patient monitoring and access to care, their integration into practice requires ongoing training and adaptation to ensure safe and effective use(3).

Furthermore, ethical dilemmas often arise in maternal-newborn care, such as decisions around fetal viability, maternal autonomy in childbirth choices, and the use of advanced medical interventions. Balancing the principles of beneficence, autonomy, and justice in these situations requires nurses to navigate sensitive discussions and collaborate closely with interdisciplinary teams to provide patient-centered care.

## 2.Literature Survey

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Maternal-newborn nursing is a dynamic and evolving specialty that faces numerous challenges influencing the delivery of quality care. According to recent literature, one of the significant challenges is the persistence of disparities in maternal and neonatal health outcomes across different populations(4). Research indicates that socioeconomic status, race, ethnicity, and geographical location play crucial roles in determining access to prenatal care, which in turn impacts maternal and neonatal morbidity and mortality rates (ACOG, 2020; Bryant et al., 2021). Additionally, the integration of evidence-based practices into clinical settings is essential but often hindered by barriers such as outdated protocols, resistance to change among healthcare providers, and limited resources for continuing education (Ostrowski et al., 2019; WHO, 2020). Moreover, the emotional and psychological aspects of maternal-newborn care, including maternal mental health disorders and postpartum depression, present complex challenges that require comprehensive support systems and interdisciplinary collaboration (Beck, 2018; Kingston et al., 2021)(5). Technological advancements, while beneficial, also pose challenges such as ensuring proper training for nurses and addressing concerns related to data privacy and patient autonomy (Koch et al., 2022). Furthermore, ethical dilemmas in maternal-newborn care, such as decisions regarding fetal interventions and maternal autonomy in childbirth choices, underscore the need for clear ethical guidelines and effective communication among healthcare teams (Lyndon et al., 2018; NMC, 2021). These challenges, highlighted in the literature, underscore the multifaceted nature of maternal-newborn nursing and the ongoing need for innovative solutions and evidence-based practices to ensure excellence in care delivery.

### **3.Existing and Proposed System**

Maternal-newborn nursing faces a myriad of obstacles that impact the delivery of high-quality care. Existing systems often struggle with disparities in access to care, outdated protocols, and inadequate support structures for maternal mental health(6). Socioeconomic factors, geographic location, and cultural disparities contribute to uneven healthcare access, affecting maternal and neonatal outcomes (ACOG, 2020; Bryant et al., 2021). The integration of evidence-based practices is hampered by resistance to change among healthcare providers and insufficient resources for continuing education (Ostrowski et al., 2019; WHO, 2020). Emotional and psychological challenges, including maternal mental health disorders, require comprehensive support systems and interdisciplinary collaboration (Beck, 2018; Kingston et al., 2021). Technological advancements offer promising solutions but require training for nurses and considerations for data privacy (Koch et al., 2022). Ethical dilemmas, such as decisions on fetal interventions and maternal autonomy, necessitate clear guidelines and effective communication (Lyndon et al., 2018; NMC, 2021). Proposed systems aim to address these obstacles by advocating for equitable healthcare access, implementing updated protocols based on current research, enhancing educational resources, and promoting interdisciplinary teamwork(7). Initiatives to improve maternal mental health support include integrating screening tools into routine care and providing access to counseling services (Beck, 2018; Kingston et al., 2021). Technological innovations, such as telemedicine and remote monitoring, expand access to specialized care and facilitate communication between healthcare providers and patients (Koch et al., 2022). Ethical frameworks promote shared decision-making and patient-centered care, ensuring that maternal autonomy and ethical considerations guide clinical practices (Lyndon et al., 2018; NMC, 2021).

### **4. Obstacles Associated with Maternity Care Models**

Maternity care models encompass a spectrum of approaches, from traditional obstetrician-led care to midwifery-led care and various shared care models. Each model presents unique challenges that impact the delivery and quality of care for pregnant women and their newborns.

**Access and Equity:** Access to maternity care remains a critical challenge globally, influenced by socioeconomic factors, geographic location, and healthcare infrastructure. Rural and underserved areas often face shortages of maternity care providers, leading to disparities in access to prenatal, intrapartum, and postpartum services. These disparities can result in delayed care initiation, increased maternal and neonatal morbidity, and poorer health outcomes overall (Brown et al., 2020).

**Continuity of Care:** Fragmentation of care due to different maternity care models can disrupt continuity and coordination of care(8). Transitioning between different providers and settings (e.g., hospital-based care, home birth, birth centers) can lead to gaps in communication, inconsistent management of care plans, and increased risk of adverse events. Achieving seamless continuity of care requires effective communication strategies, standardized protocols, and collaborative care models that prioritize patient safety and satisfaction (Sandall et al., 2016).

**Quality and Safety:** Ensuring consistent adherence to evidence-based practices and clinical guidelines across diverse maternity care models is crucial for optimizing maternal and neonatal outcomes. Variability in practice standards, provider skill levels, and facility resources can affect the quality and safety of care delivery(9). Standardizing protocols, implementing quality improvement initiatives, and promoting ongoing education and training for healthcare providers are essential strategies to enhance quality and safety in maternity care (Sandall et al., 2020).

**Workforce Challenges:** Maternity care models are heavily reliant on a skilled and adequately staffed workforce, including obstetricians, midwives, nurses, and support staff. Shortages of maternity care providers, particularly in rural and underserved areas, pose significant challenges in meeting the demand for services and maintaining continuity of care. Addressing workforce shortages requires strategic recruitment efforts, retention incentives, professional development opportunities, and support for interdisciplinary collaboration (Koblinsky et al., 2021).

**Cost and Resource Allocation:** Financial constraints and resource allocation issues present ongoing challenges in the sustainability of maternity care models. Balancing cost-effectiveness with the provision of high-quality, equitable care requires innovative financing mechanisms, efficient resource allocation strategies, and advocacy for adequate funding and reimbursement for maternity services. Collaborative efforts between policymakers, healthcare administrators, insurers, and community stakeholders are essential to address these economic challenges (UNFPA, 2019).

**Patient-Centered Care:** Achieving patient-centered maternity care models involves respecting and responding to the preferences, values, and cultural beliefs of pregnant women and their families. Empowering women to make informed decisions about their care, promoting shared decision-making with healthcare providers, and fostering compassionate, respectful relationships are fundamental principles of patient-centered care. Integrating culturally competent care practices and supporting diversity in maternity care settings are essential for improving patient satisfaction, health outcomes, and overall care experiences (Renfrew et al., 2014).

#### **4.1 Expanding and Integrating Family-Centered and Midwifery Models of Care**

- The integration and expansion of midwifery and family-centered models of care represent pivotal advancements in maternity care, aimed at improving outcomes through personalized, holistic, and supportive approaches(10). Midwifery, grounded in the principles of continuity of care, empowerment, and shared decision-making, aligns closely with family-centered care models, which prioritize the involvement of families in decision-making and emphasize a supportive environment for both physiological and emotional aspects of childbirth.
- Midwifery-led care models are characterized by the provision of care throughout the maternity continuum, from preconception to postpartum, by trained midwives who focus on promoting normal birth processes and reducing unnecessary interventions. These models emphasize the importance of building trusting relationships between midwives and women, fostering open communication, and respecting women's autonomy in decision-making about their care options (Sandall et al., 2016).
- Family-centered care extends this approach by recognizing the critical role of families and support persons in the childbirth experience. It encourages the inclusion of partners, relatives, or chosen support individuals in prenatal visits, labor, and postpartum care, promoting a collaborative and nurturing environment that enhances maternal and newborn well-being. Family-centered care models recognize and support diverse family structures, cultural practices, and individual preferences, aiming to create a comfortable and inclusive care environment (Shaw et al., 2019).
- The integration and expansion of these models into mainstream maternity care systems are associated with several benefits. Research suggests that midwifery-led and family-centered care models are associated with lower rates of interventions such as cesarean sections, episiotomies, and medical inductions, without compromising maternal or neonatal safety (Sandall et al., 2016; Shaw et al., 2019). These models also contribute to improved maternal satisfaction, increased breastfeeding initiation and continuation rates, and enhanced emotional support for women and their families throughout the childbirth journey (Walsh et al., 2019).
- Expanding access to midwifery-led and family-centered care requires systemic changes in healthcare policies, education, and workforce development. Integrating midwifery care into collaborative practice models within multidisciplinary healthcare teams facilitates seamless continuity of care and ensures that women receive

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comprehensive support that meets their physical, emotional, and cultural needs. This integration also involves promoting midwifery education and training programs, fostering interdisciplinary collaboration, and advocating for policy reforms that recognize and support midwifery as a key component of maternity care systems (Renfrew et al., 2014).

- Moreover, expanding midwifery-led and family-centered care models requires addressing barriers such as limited reimbursement structures, professional hierarchies within healthcare systems, and resistance to change among stakeholders. Advocacy efforts aimed at increasing public awareness, promoting evidence-based practices, and demonstrating the cost-effectiveness of these models can facilitate their integration into mainstream healthcare settings.

#### **4.2 Minimization of Superfluous or Dubious-Benefit Technology Use**

- The reduction in the use of unnecessary or questionable-benefit technology in maternity care is increasingly recognized as a crucial step towards improving outcomes, enhancing patient satisfaction, and optimizing resource allocation within healthcare systems(11). Unnecessary interventions and technologies in childbirth can lead to increased healthcare costs, higher rates of medical interventions, and potential risks for mothers and newborns.
- One of the primary areas of concern is the overuse of cesarean sections (C-sections), which can be influenced by various factors including provider practice patterns, fear of litigation, and maternal request without medical indication. While C-sections are essential in certain medical situations, their overuse is associated with higher rates of maternal complications, longer recovery times, and increased healthcare costs without necessarily improving outcomes (Betrán et al., 2016).
- Similarly, the routine use of continuous electronic fetal monitoring (EFM) during labor has been questioned for its efficacy in improving neonatal outcomes compared to intermittent auscultation. Continuous EFM can lead to increased rates of unnecessary interventions such as C-sections, without reducing rates of cerebral palsy or other neonatal outcomes (ACOG, 2022). Intermittent auscultation, when performed by skilled healthcare providers, is considered a safe and effective alternative in low-risk pregnancies, offering women greater mobility and autonomy during labor (ACOG, 2022).
- In addition to monitoring technologies, the routine use of episiotomies, induction of labor without medical indication, and early cord clamping are examples of practices that have been increasingly scrutinized for their necessity and potential harms. Episiotomies, once routinely performed to expedite delivery and prevent severe perineal tears, are now recommended selectively due to evidence suggesting increased risk of perineal trauma and long-term pelvic floor dysfunction (ACOG, 2017)(12). Similarly, early cord clamping, previously standard practice to prevent postpartum hemorrhage, has been found to deprive newborns of placental blood and essential nutrients, potentially impacting their long-term health (WHO, 2014).
- Efforts to reduce the use of unnecessary or questionable-benefit technology in maternity care focus on promoting evidence-based practices, shared decision-making between healthcare providers and patients, and continuous professional education and training. Guidelines and protocols that emphasize the importance of informed consent, individualized care plans based on maternal and fetal conditions, and the integration of midwifery-led care models can help mitigate unnecessary interventions and promote physiologic birth processes (WHO, 2018).
- Moreover, addressing the drivers of unnecessary technology use requires a multifaceted approach that includes healthcare policy reforms, quality improvement initiatives, and public education campaigns. Healthcare systems can benefit from adopting value-based care models that prioritize patient-centered outcomes, reduce healthcare disparities, and ensure equitable access to high-quality maternity care services.

### **5. Family-Centered and Patient Instruction**

Patient and family teaching in maternity care plays a vital role in empowering expectant parents with the knowledge and skills they need to make informed decisions, promote health and well-being, and effectively navigate the childbirth experience. Effective patient and family teaching encompasses a broad range of topics and strategies tailored to meet the diverse needs of individuals and families throughout the prenatal, intrapartum, and postpartum periods.

#### **Antenatal Education:**

Antenatal education begins early in pregnancy and focuses on preparing expectant parents for the physical, emotional, and lifestyle changes associated with pregnancy and childbirth. Key topics include prenatal nutrition, exercise, and self-care practices to support maternal and fetal health. Expectant parents are educated about common discomforts during pregnancy, warning signs of complications, and when to seek medical attention. Childbirth preparation classes provide information on labor and delivery, pain management options, relaxation techniques, and birth preferences, promoting active participation and informed decision-making during childbirth (Hodnett et al., 2012).

#### **Intrapartum Education:**

Education during labor and childbirth aims to support women and their partners in understanding the stages of labor, coping strategies for labor pain, and the role of healthcare providers in monitoring maternal and fetal well-being. Techniques such as breathing exercises, relaxation techniques, and labor positions are taught to help manage pain and facilitate progress in labor. Information about medical interventions, such as epidurals and induction of labor, is provided to promote informed consent and shared decision-making between the woman and her healthcare team (Simkin et al., 2019).

#### **Postpartum Care and Infant Care:**

Postpartum education focuses on promoting maternal recovery, breastfeeding support, newborn care, and postpartum emotional health. Topics include breastfeeding techniques, infant feeding cues, newborn hygiene, safe sleep practices, and recognizing signs of postpartum complications such as mastitis or postpartum depression. Family members are encouraged to participate in postpartum education to support the new mother and optimize infant care practices at home. Education on contraception options and family planning is also provided to assist women in making informed decisions about their reproductive health (World Health Organization, 2018).

#### **Role of Patient and Family Teaching:**

Patient and family teaching in maternity care promotes empowerment, autonomy, and active participation in healthcare decisions, fostering a positive childbirth experience and enhancing maternal and neonatal outcomes. Effective teaching strategies include individualized education plans based on cultural beliefs, language preferences, and health literacy levels. Visual aids, demonstrations, interactive activities, and multimedia resources are utilized to enhance learning and retention of information. Continuous assessment of learning needs and evaluation of teaching outcomes ensure that information is comprehended and applied effectively (Jafari et al., 2019).

#### **Barriers and Challenges:**

Barriers to effective patient and family teaching in maternity care include language barriers, cultural differences, health literacy limitations, and time constraints within healthcare settings. Addressing these barriers requires culturally competent care, interpreter services, plain language materials, and flexible scheduling of education sessions. Collaborative partnerships between healthcare providers, educators, and community resources can enhance access to educational resources and support ongoing learning throughout the maternity care continuum (Renfrew et al., 2014).

#### **5.1 The Dubious Utility of a Typical Newborn Nursery**

- The traditional concept of a normal newborn nursery, where healthy infants are routinely separated from their mothers shortly after birth for observation and care, is increasingly being questioned within maternity care practices. Historically, newborn nurseries were established to provide a controlled environment for monitoring newborns, offering routine assessments, and facilitating care by nursing staff separate from the mother's room. However, contemporary evidence and evolving guidelines suggest reconsidering the necessity and benefits of this practice.
- One of the primary concerns raised about traditional newborn nurseries is the potential disruption of early bonding and breastfeeding initiation between the newborn and mother. Skin-to-skin contact immediately after birth has been shown to have numerous benefits, including stabilizing the infant's temperature and heart rate, promoting breastfeeding success, and enhancing maternal-infant attachment (Moore et al., 2016). Separation from the mother shortly after birth can delay these critical bonding experiences and may impact breastfeeding initiation rates.
- Moreover, newborn nursery practices have been associated with increased risks of unnecessary medical interventions, such as formula supplementation and unnecessary testing, which can lead to breastfeeding difficulties and parental anxiety (DiGirolamo et al., 2015). Research indicates that rooming-in, where mothers and newborns stay together in the same room throughout their hospital stay, supports breastfeeding

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exclusivity, improves maternal satisfaction, and reduces neonatal complications compared to routine nursery care (Brown et al., 2015).

- Advocates for eliminating or reducing the use of traditional newborn nurseries argue for promoting family-centered care models that prioritize keeping mothers and newborns together from birth onwards. Rooming-in not only supports breastfeeding but also facilitates early recognition of infant feeding cues, promotes parental confidence in newborn care, and enhances the overall birth experience for families (World Health Organization, 2018). Family-centered care models recognize the critical role of parental involvement in newborn care decisions and support shared decision-making between healthcare providers and families.

## **6. Obstacles in Maintaining Current Maternity Practices**

- Keeping maternity practice current involves addressing several challenges to ensure healthcare providers are equipped with the latest evidence-based practices and innovations. These challenges include:
- **Rapidly Evolving Evidence:** The field of maternity care is dynamic, with new research findings and clinical guidelines continually emerging. Healthcare providers must stay updated on current evidence-based practices to deliver safe and effective care. However, the volume and pace of new evidence can be overwhelming, making it challenging to integrate new knowledge into practice (ACOG, 2022).
- **Variability in Practice:** There may be variability in the adoption of new practices among healthcare providers and institutions. Factors such as institutional culture, provider preferences, and resource availability can influence the uptake of evidence-based guidelines. Achieving consensus and standardizing practices across diverse healthcare settings can be challenging (Sandall et al., 2020).
- **Continuing Education and Training:** Continuous professional development is essential for healthcare providers to maintain competence and stay abreast of advancements in maternity care. However, access to ongoing education and training opportunities may be limited, particularly in rural or underserved areas. Healthcare systems need to invest in accessible and comprehensive training programs to support staff development (Koblinsky et al., 2021).
- **Technological Advancements:** Rapid advancements in medical technology, such as fetal monitoring systems, telemedicine, and minimally invasive surgical techniques, offer opportunities to improve maternal and neonatal outcomes. However, integrating these technologies into practice requires investment in training, infrastructure, and ongoing support to ensure safe and effective implementation (Koch et al., 2022).
- **Resource Constraints:** Healthcare systems often face resource constraints, including budget limitations, staffing shortages, and competing priorities. Allocating resources for professional development, research initiatives, and technology upgrades can be challenging amidst competing healthcare demands. Strategic planning and advocacy are essential to secure resources necessary to keep maternity practice current (UNFPA, 2019).
- **Regulatory and Policy Changes:** Changes in healthcare policies, regulations, and reimbursement models can impact maternity practice. Healthcare providers must navigate evolving regulatory requirements while maintaining quality care standards. Keeping abreast of regulatory changes and understanding their implications for practice requires ongoing education and collaboration with regulatory bodies (NMC, 2021).
- Addressing these challenges requires a multifaceted approach involving collaboration among healthcare providers, educators, researchers, policymakers, and professional organizations. Strategies to keep maternity practice current include establishing robust continuing education programs, fostering a culture of lifelong learning and quality improvement, promoting interdisciplinary collaboration, leveraging technology for knowledge dissemination, and advocating for supportive policies and resource allocation. By addressing these challenges proactively, healthcare systems can ensure that maternity care remains evidence-based, patient-centered, and responsive to the evolving needs of women and newborns.

### **6.1 Research Incorporation into Practice**

The integration of research into practice is essential for advancing evidence-based care in maternity and newborn health. This process involves translating research findings into clinical guidelines, policies, and daily healthcare practices to improve outcomes for mothers and infants. However, several challenges must be addressed to effectively bridge the gap between research and practice in this field.

#### **Challenges in Integrating Research into Practice:**

- **Knowledge Translation:** One of the primary challenges is effectively translating research findings into actionable practices that healthcare providers can implement. Research findings are often published in academic journals and may not reach frontline clinicians in a timely or accessible manner. Bridging this gap requires effective knowledge translation strategies, such as creating plain-language summaries, practice guidelines, and educational resources tailored to different healthcare settings and provider groups (Gagliardi et al., 2016).
- **Resistance to Change:** Healthcare systems and providers may exhibit resistance to adopting new practices, particularly if they challenge existing norms or require significant changes in clinical workflows. Overcoming resistance to change involves addressing concerns about feasibility, resource implications, and perceived benefits of adopting new evidence-based practices. Building consensus among stakeholders, providing supportive implementation strategies, and demonstrating the positive impact of research findings on patient outcomes are crucial steps in promoting practice change (Greenhalgh et al., 2004).
- **Resource Constraints:** Limited resources, including funding, staffing, and infrastructure, can hinder the implementation of research findings into practice. Healthcare organizations may face challenges in investing in new technologies, training programs, or quality improvement initiatives needed to support evidence-based care. Advocating for resource allocation, leveraging external funding opportunities, and prioritizing investments in research-driven initiatives are essential strategies for overcoming resource constraints (Green et al., 2009).
- **Time Constraints:** Healthcare providers often face time constraints in their clinical practice, which may limit their ability to engage in continuous learning and integrate new research findings into their daily routines. Incorporating research into practice requires dedicated time for professional development, ongoing education, and quality improvement activities. Integrating research findings into clinical practice guidelines and decision support tools can help streamline decision-making processes and optimize time efficiency (Boaz et al., 2011).
- **Interdisciplinary Collaboration:** Effective integration of research into practice necessitates collaboration among multidisciplinary teams, including researchers, clinicians, educators, policymakers, and administrators. Interdisciplinary collaboration facilitates the exchange of knowledge, promotes shared decision-making, and ensures that research findings are relevant and applicable across different healthcare settings and patient populations (Damschroder et al., 2009).

#### **Strategies for Enhancing Integration of Research into Practice:**

- **Knowledge Mobilization Platforms:** Developing platforms that facilitate access to research findings, practice guidelines, and educational resources can enhance knowledge dissemination and uptake among healthcare providers. These platforms may include online repositories, clinical decision support systems, and virtual learning environments that promote continuous learning and professional development.
- **Quality Improvement Initiatives:** Implementing quality improvement initiatives based on research findings can foster a culture of evidence-based practice within healthcare organizations. Quality improvement frameworks, such as Plan-Do-Study-Act (PDSA) cycles, enable iterative testing and refinement of new practices, promoting sustainability and scalability across different clinical settings (Langley et al., 2009).
- **Educational Programs:** Offering continuing education programs, workshops, and webinars that focus on evidence-based practices can empower healthcare providers with the knowledge and skills needed to integrate research findings into clinical care. Collaborating with academic institutions, professional associations, and industry partners can broaden access to educational opportunities and promote lifelong learning among healthcare professionals.
- **Policy and Advocacy:** Advocating for policy changes that support the adoption of evidence-based practices is essential for driving systemic improvements in maternity and newborn health. Engaging policymakers, healthcare administrators, and stakeholders in discussions about the impact of research on health outcomes can influence funding priorities, regulatory frameworks, and organizational policies that facilitate practice change (Damschroder et al., 2009).
- **Patient and Family Engagement:** Involving patients and families in decision-making processes and care planning can enhance the relevance and effectiveness of research integration efforts. Patient-centered



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approaches that prioritize shared decision-making, informed consent, and personalized care plans promote patient satisfaction and improve adherence to evidence-based practices (Ocloo et al., 2016).

### **7. Enhancement of Genetic Technology and Guidance**

The further development of genetic technology and counseling holds significant promise for advancing personalized healthcare in maternity and newborn health. Genetic technology encompasses a range of advancements, including prenatal screening and diagnostic tests, genomic sequencing, and genetic counseling services, aimed at identifying and managing genetic conditions that may impact maternal health, fetal development, and newborn outcomes. Here are some key aspects and considerations in the further development of genetic technology and counseling:

#### **Advancements in Genetic Technology:**

**Prenatal Screening and Diagnostic Tests:** Genetic screening tests, such as non-invasive prenatal testing (NIPT) and maternal serum screening, are used to assess the risk of chromosomal abnormalities (e.g., Down syndrome) and genetic conditions (e.g., cystic fibrosis) in the fetus. These tests offer early detection and inform decision-making regarding further diagnostic testing, such as chorionic villus sampling (CVS) or amniocentesis, which provide more definitive genetic information (American College of Obstetricians and Gynecologists, 2020).

**Genomic Sequencing:** Advances in genomic sequencing technologies have revolutionized the ability to analyze an individual's genetic code comprehensively. Whole genome sequencing (WGS) and whole exome sequencing (WES) can identify genetic variants associated with inherited disorders, complex diseases, and pharmacogenetic considerations. In maternity care, genomic sequencing may be used to diagnose rare genetic disorders, predict recurrence risks in future pregnancies, and personalize medical management based on genetic predispositions (Kalia et al., 2017).

**Expanded Carrier Screening:** Carrier screening tests identify individuals at risk of passing on genetic conditions to their offspring, such as cystic fibrosis, sickle cell disease, and Tay-Sachs disease. Expanded carrier screening panels encompass a broader range of genetic conditions, allowing prospective parents to make informed reproductive decisions and consider options such as preimplantation genetic testing or prenatal diagnosis (Edwards et al., 2015).

#### **Role of Genetic Counseling:**

- **Preconception Counseling:** Genetic counselors play a crucial role in providing preconception counseling to individuals and couples considering pregnancy. They assess familial and personal medical histories, discuss reproductive risks, and offer guidance on genetic testing options. Preconception counseling helps individuals understand their genetic risks, explore family planning options, and make informed decisions to optimize reproductive outcomes (Langlois et al., 2019).
- **Prenatal Counseling:** During pregnancy, genetic counselors provide prenatal counseling to interpret genetic test results, discuss implications for fetal health, and support decision-making regarding diagnostic testing and pregnancy management. Prenatal genetic counseling addresses parental concerns, provides emotional support, and facilitates informed choices about pregnancy continuation, medical interventions, or preparation for the birth of a child with special healthcare needs (Levy et al., 2021).
- **Postnatal Counseling:** Genetic counseling extends into the postnatal period to assist families in understanding genetic conditions diagnosed in their newborns. Postnatal counseling addresses the implications of genetic test results, guides families in accessing medical and support services, and provides resources for managing genetic conditions throughout the child's development. Counseling also includes discussions about recurrence risks in future pregnancies and family members (O'Leary et al., 2015).

#### **Challenges and Considerations:**

- **Ethical and Social Implications:** The integration of genetic technology raises ethical considerations related to informed consent, confidentiality, and the potential for genetic discrimination. Ensuring patient autonomy, confidentiality of genetic information, and equitable access to genetic services are essential principles in genetic counseling and testing (Bombard et al., 2019).
- **Education and Training:** Healthcare providers, including obstetricians, midwives, and nurses, require education and training in genetics to effectively integrate genetic counseling and testing into routine maternity care. Continuing education programs and interdisciplinary collaboration with genetic counselors and geneticists are essential for enhancing provider competence and promoting patient-centered genetic care (Middleton et al., 2020).



- **Healthcare System Integration:** The integration of genetic technology into healthcare systems requires infrastructure support, including laboratory facilities, bioinformatics expertise, and electronic health record systems capable of managing and interpreting genetic data. Collaborative partnerships between healthcare institutions, academic centers, and industry stakeholders are necessary to optimize the implementation and utilization of genetic technologies in maternity care (Johansen Taber et al., 2014).

## 8. Conclusion and Future Work

Maternal-newborn nursing faces a myriad of challenges that impact the delivery of high-quality care to women and infants. These obstacles include staffing shortages, healthcare disparities, technological integration complexities, ethical dilemmas, and the ongoing need for continuing education. Addressing these challenges is crucial for achieving practice excellence and improving maternal and newborn outcomes. Despite these obstacles, nurses in this specialty demonstrate resilience, compassion, and a commitment to advancing care standards through evidence-based practice and patient-centered approaches.

### Future Work:

Looking forward, several critical areas warrant attention to enhance practice excellence in maternal-newborn nursing. First, there is a pressing need to advocate for improved staffing levels and supportive work environments that prioritize nurse well-being and patient safety. Additionally, efforts should focus on addressing healthcare disparities by advocating for equitable access to care and culturally sensitive practices. Embracing technological advancements while ensuring nurses receive adequate training and support is essential for optimizing patient care delivery.

Ethical education and resources should be expanded to help nurses navigate complex dilemmas ethically and promote patient advocacy effectively. Investing in continuing education, leadership development, and research initiatives will empower nurses to stay current with best practices and contribute to evidence-based care advancements. Finally, fostering interdisciplinary collaboration and promoting patient-centered care models are critical for enhancing care coordination, patient outcomes, and overall healthcare quality in maternal-newborn nursing.

By prioritizing these areas for future work, the maternal-newborn nursing profession can overcome existing challenges, elevate practice standards, and ultimately improve the health and well-being of women, newborns, and their families. This collective effort will ensure that maternal-newborn nurses continue to play a pivotal role in shaping the future of healthcare delivery and advancing excellence in care.

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### Conflicts of interest

The authors have no conflicts of interest to declare

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