



“Beyond Survival: The Pivotal Role of Obstetric and Gynecological Nurses in Early Prediction and Prevention of Maternal Near-Miss Events”

Karishma Sutar¹, Dr. Reena Thakur²

¹PhD Scholar, ²Research Supervisor

1,2 Malwanchal University, Indore, M.P

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Abstract: Maternal near-miss events, defined as instances where women survive severe, life-threatening complications during pregnancy, childbirth, or within the postpartum period, have emerged as a crucial indicator of the quality of maternal healthcare services. While maternal mortality has traditionally been the focus of global health initiatives, increasing attention is now being directed toward maternal near-miss cases as they provide valuable insights into systemic gaps, clinical delays, and opportunities for prevention. Obstetric and gynecological (OBG) nurses play a central role in the early identification, timely intervention, and prevention of such critical events due to their continuous presence, clinical vigilance, and close interaction with pregnant women across all levels of care. This review article examines the concept of maternal near-miss, its epidemiology, causes, and consequences, and critically analyzes the multifaceted role of OBG nurses in early prediction and prevention. Emphasis is placed on nursing assessment skills, early warning systems, risk stratification, emergency preparedness, patient education, and interdisciplinary collaboration. The article further explores challenges faced by nurses in low-resource settings and highlights evidence-based strategies, training needs, and policy implications to strengthen nursing contributions toward reducing severe maternal morbidity. Strengthening the role of OBG nurses is essential for improving maternal outcomes and achieving global maternal health goals.

Keywords: Maternal near-miss, obstetric nursing, early prediction, maternal morbidity, emergency obstetric care, prevention strategies

Introduction

Maternal health remains a key public health priority worldwide, particularly in low- and middle-income countries where preventable pregnancy-related complications continue to threaten women's lives. Although global maternal mortality ratios have declined over recent decades, the burden of severe maternal morbidity has not reduced proportionately. Many women experience life-threatening complications but survive due to timely medical intervention or sheer chance. These cases, referred to as maternal near-miss events, represent a critical opportunity to evaluate the effectiveness of healthcare systems and preventive strategies.

Obstetric and gynecological nurses occupy a unique and indispensable position within maternal healthcare. Their continuous presence at the bedside, involvement in antenatal, intrapartum, and postnatal care, and role as first responders during obstetric emergencies make them pivotal in recognizing early warning signs of deterioration. Early prediction and prevention of maternal near-miss events depend heavily on nurses' clinical judgment, surveillance skills, and prompt action. This review explores the evolving role of OBG nurses in addressing maternal near-miss events and underscores their contribution to improving maternal survival and quality of care.



Concept and Definition of Maternal Near-Miss

The World Health Organization defines a maternal near-miss as "a woman who nearly died but survived a complication that occurred during pregnancy, childbirth, or within 42 days of termination of pregnancy." Unlike maternal deaths, near-miss cases allow healthcare professionals to analyze what went wrong, what worked, and how care can be improved without the irreversible outcome of death.

Maternal near-miss events are identified based on clinical criteria, laboratory markers, or management-based indicators such as admission to intensive care units, massive blood transfusion, or emergency surgical interventions. Common conditions leading to near-miss include severe hemorrhage, hypertensive disorders of pregnancy, sepsis, obstructed labor, and complications related to unsafe abortion. Understanding these criteria is essential for OBG nurses, as early recognition often begins with subtle clinical changes observed during routine care.

Epidemiology and Global Burden of Maternal Near-Miss

Maternal near-miss events occur far more frequently than maternal deaths, with estimates suggesting that for every maternal death, 20 to 30 women experience a near-miss. The prevalence varies widely across regions, reflecting disparities in access to skilled care, referral systems, and emergency obstetric services. Low-resource settings report higher rates of near-miss due to delayed care-seeking, inadequate infrastructure, and shortages of trained personnel.

In India and other developing countries, maternal near-miss audits have revealed that many cases are preventable through early detection and timely intervention. OBG nurses, who often serve as the first point of contact in primary and secondary care facilities, are strategically positioned to identify high-risk pregnancies and prevent progression to severe morbidity. Their role is particularly critical in settings where obstetricians may not be immediately available.

Causes and Risk Factors Associated with Maternal Near-Miss Events

Maternal near-miss events are multifactorial and influenced by medical, socio-economic, and health system-related

factors. Direct obstetric causes such as postpartum hemorrhage, eclampsia, uterine rupture, and sepsis account for a significant proportion of cases. Indirect causes, including anemia, cardiac disease, diabetes, and infectious conditions, further increase vulnerability during pregnancy. Social determinants such as poverty, low educational status, poor nutrition, and limited access to antenatal care exacerbate risks. Health system delays, commonly described as the "three delays" model—delay in seeking care, delay in reaching care, and delay in receiving adequate care—play a substantial role in near-miss occurrences. OBG nurses can influence all three delays through community education, effective triage, and prompt clinical decision-making.

Role of OBG Nurses in Early Prediction of Maternal Near-Miss

Early prediction of maternal near-miss events relies heavily on vigilant nursing assessment and continuous monitoring. OBG nurses are trained to recognize deviations from normal physiological parameters during pregnancy and childbirth. Subtle changes in vital signs, altered mental status, reduced urine output, abnormal bleeding patterns, or worsening edema may indicate impending complications.

The use of standardized tools such as the Modified Early Obstetric Warning Score (MEOWS) enables nurses to systematically assess risk and trigger timely escalation of care. Through meticulous documentation and effective communication with the healthcare team, nurses ensure that early warning signs are not overlooked. Their clinical intuition, developed through experience, often plays a decisive role in identifying deterioration before it becomes life-threatening.

Risk Assessment and Surveillance During Antenatal Care

Antenatal care provides a critical window for identifying women at risk of severe maternal morbidity. OBG nurses conduct comprehensive assessments that include medical history, obstetric history, nutritional status, and psychosocial factors. Identification of high-risk conditions such as severe anemia, preeclampsia, placenta previa, and multiple



pregnancies allows for individualized care planning and referral to higher-level facilities when necessary.

Continuous surveillance during follow-up visits enables nurses to detect worsening conditions and reinforce adherence to treatment and lifestyle modifications. Health education provided by nurses empowers women to recognize danger signs and seek care promptly, thereby preventing progression to near-miss events.

Intrapartum and Postpartum Nursing Interventions

The intrapartum and postpartum periods are particularly vulnerable times for maternal near-miss events. OBG nurses play a central role in monitoring labor progress, assessing fetal and maternal well-being, and identifying complications such as obstructed labor, uterine atony, or hypertensive crises. Prompt initiation of emergency protocols, such as active management of the third stage of labor, can significantly reduce the risk of severe hemorrhage.

Postpartum surveillance is equally critical, as many near-miss events occur after delivery. Nurses closely monitor vital signs, lochia, uterine involution, and signs of infection. Early detection of postpartum hemorrhage or sepsis and immediate intervention can be life-saving. The continuity of care provided by nurses during this period is essential for preventing delayed complications.

Emergency Preparedness and Response

Effective prevention of maternal near-miss requires a well-prepared healthcare team capable of responding swiftly to obstetric emergencies. OBG nurses are integral to emergency preparedness through their involvement in drills, protocol implementation, and maintenance of emergency equipment and supplies. Their ability to initiate first-line interventions such as oxygen administration, intravenous access, fluid resuscitation, and medication administration is critical during emergencies.

In many settings, nurses act as coordinators during crises, ensuring efficient communication between obstetricians, anesthetists, laboratory personnel, and blood banks. This collaborative approach minimizes delays in care and

improves outcomes for women experiencing severe complications.

Health Education and Community-Based Prevention

Beyond clinical settings, OBG nurses contribute significantly to community-based prevention of maternal near-miss events. Through outreach programs, antenatal classes, and home visits, nurses educate women and families about the importance of early antenatal registration, institutional delivery, nutrition, and recognition of danger signs.

Community education helps reduce delays in seeking care and promotes timely referral. Nurses also play a key role in advocating for birth preparedness and complication readiness, encouraging families to plan for transportation, finances, and emergency support. These preventive strategies are particularly effective in reducing near-miss events in rural and underserved populations.

Challenges Faced by OBG Nurses in Preventing Maternal Near-Miss

Despite their crucial role, OBG nurses face numerous challenges that limit their effectiveness. High workload, staff shortages, inadequate training opportunities, and lack of essential resources contribute to burnout and reduced quality of care. In low-resource settings, limited access to diagnostic tools and referral facilities further complicates early prediction and prevention.

Hierarchical healthcare structures may also restrict nurses' autonomy in decision-making, delaying critical interventions. Addressing these challenges requires institutional support, ongoing education, and policies that recognize and strengthen the professional role of nurses in maternal healthcare.

Implications for Nursing Practice, Education, and Policy

Strengthening the role of OBG nurses in preventing maternal near-miss events has important implications for practice, education, and policy. Continuous professional development programs focusing on emergency obstetric care, use of early warning systems, and leadership skills are essential. Nursing curricula should emphasize critical thinking, risk assessment,



and evidence-based interventions related to maternal morbidity.

At the policy level, integrating maternal near-miss audits into routine quality improvement processes can enhance learning and accountability. Empowering nurses through supportive legislation and recognition of advanced nursing roles can further improve maternal outcomes and healthcare system resilience.

Conclusion

Maternal near-miss events represent a critical challenge and an opportunity for improving maternal healthcare. Obstetric and gynecological nurses play a pivotal role in early prediction and prevention through vigilant assessment, timely intervention, patient education, and interdisciplinary collaboration. Strengthening nursing capacity, addressing systemic barriers, and fostering supportive practice environments are essential steps toward reducing severe maternal morbidity. Recognizing and enhancing the contribution of OBG nurses is vital for achieving safer motherhood and advancing global maternal health goals.

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