



# THE ROLE OF NURSE-LED INTERVENTIONS IN REDUCING POSTPARTUM HEMORRHAGE: A COMPARATIVE CLINICAL STUDY

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## Abstract

Postpartum hemorrhage (PPH) remains one of the leading causes of maternal mortality and morbidity worldwide, especially in low- and middle-income countries where access to timely medical interventions is limited. Evidence suggests that nurse-led interventions, such as early identification of risk factors, standardized protocols for active management of the third stage of labor (AMTSL), and consistent monitoring, play a pivotal role in reducing the incidence and severity of PPH. This study examines the effectiveness of nurse-led interventions in preventing and managing PPH through a comparative analysis across clinical settings. The research highlights that hospitals employing structured nurse-led protocols reported a significant reduction in PPH cases compared to those following physician-led or ad hoc management strategies. The findings also emphasize the importance of training, protocol adherence, and patient education in achieving favorable maternal outcomes.

**Keywords:** *Postpartum hemorrhage, Nurse-led interventions, Maternal health, Clinical nursing, Active management of third stage of labor, Maternal morbidity prevention.*

## INTRODUCTION

Postpartum hemorrhage (PPH) is defined as excessive bleeding exceeding 500 ml after vaginal delivery or 1,000 ml after cesarean section within the first 24 hours of birth. Globally, it accounts for approximately 25–30% of maternal deaths, making it one of the most critical

emergencies in obstetric care (WHO, 2020) [1-5]. Despite advancements in obstetric technologies and pharmacological interventions, many health systems continue to struggle with preventing and effectively managing PPH [6].

Nurses and midwives often serve as the first responders during delivery, especially in resource-limited settings [7]. Their role extends beyond supportive care to include critical decision-making, risk assessment, immediate interventions such as uterine massage, timely administration of uterotonic drugs, and rapid escalation when complications arise. The concept of nurse-led interventions emphasizes structured, evidence-based protocols and empowers nursing professionals to act decisively within their scope of practice [8, 9].

This paper aims to evaluate the role of nurse-led interventions in reducing PPH, comparing outcomes in clinical environments that adopt structured nurse-driven practices against those reliant primarily on physician-driven responses [10-14].

## METHODOLOGY

The study adopted a mixed-method approach, combining quantitative clinical data with qualitative insights from healthcare professionals. Two tertiary care hospitals and two community-based maternity units were selected for comparison [15].

1. Sample Population – 400 postpartum women were observed, 200 in hospitals practicing nurse-led protocols and 200 in conventional physician-led units.
2. Intervention Strategy – Nurse-led interventions included AMTSL, uterine massage, prompt



administration of oxytocin, blood loss monitoring, and immediate escalation if bleeding exceeded set thresholds.

3. Data Collection – Quantitative data included blood loss measurement, transfusion rates, and maternal morbidity indicators. Qualitative data involved semi-structured interviews with 25 nurses and 15 physicians on their experiences and challenges.
4. Analysis Tools – Statistical analysis was conducted using SPSS software, with chi-square tests for categorical variables and regression analysis for risk adjustment. Thematic analysis was applied to qualitative data [16-21].

**Case Study**

**Data Analysis**

**Table 1: Comparative Outcomes of PPH in Nurse-led vs. Physician-led Units.**

Parameters	Nurse-led Units (n=200)	Physician-led Units (n=200)
Average Blood Loss (ml)	420 ml	610 ml
PPH Incidence (%)	12%	28%
Blood Transfusion Requirement (%)	8%	20%
Maternal Morbidity Rate (%)	5%	14%
Maternal Mortality Rate (%)	0.5%	2%

**Table 2: Nurses’ Perspectives on Effectiveness of Interventions (Survey, n=25)**

Intervention	Very Effective (%)	Moderately Effective (%)	Less Effective (%)
Active Management of Third Stage of Labor	88%	12%	0%
Uterine Massage	72%	20%	8%
Early Oxytocin Administration	80%	16%	4%
Standardized Monitoring Protocols	76%	24%	0%
Patient Education & Counseling	68%	28%	4%

**Questionnaire (Sample)**

1. How confident are you in implementing AMTSL as part of routine delivery care?
2. What challenges do you face while administering uterotonic drugs promptly?
3. Do you believe standardized protocols improve patient outcomes in PPH management?
4. How frequently do you encounter difficulties in escalating PPH cases to physicians?
5. In your opinion, what additional training is required to improve nurse-led interventions?

**CONCLUSION**

The study reinforces the vital role of nurse-led interventions in reducing postpartum

hemorrhage. One of the maternity units under study, located in a semi-urban region, implemented a nurse-led PPH prevention program in 2019 [22-26]. Nurses were trained in AMTSL, standardized documentation, and patient counseling. Over a two-year period, the unit recorded a 45% reduction in PPH cases and a 30% decrease in emergency blood transfusions [27]. Comparatively, the nearby physician-led unit without standardized nurse-led protocols showed only a 10% reduction in PPH cases during the same period [28].

Interviews with nurses revealed that empowerment, confidence in evidence-based protocols, and teamwork significantly improved their ability to respond quickly [29, 30]. Patients also reported greater satisfaction due to enhanced communication and reassurance during delivery.

hemorrhage. The comparative analysis clearly demonstrates that structured, evidence-based nursing protocols significantly lower blood loss, reduce transfusion needs, and improve maternal outcomes compared to physician-led approaches without standardized nurse involvement. Empowering nurses through training, autonomy, and adherence to globally recommended practices like AMTSL has the potential to reduce maternal morbidity and mortality worldwide.

Investing in nurse-led care models, especially in resource-limited regions, should be a priority for policymakers, as it not only saves lives but also improves overall patient satisfaction and healthcare efficiency.

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