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Article

Effect of Nurse-Led Educational Intervention on Knowledge and Practice of Self-Care During the Intrapartum and Postpartum Period in a Private Hospital

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ABSTRACT

Background: The intrapartum and postpartum periods are critical phases in maternal health, often marked by insufficient knowledge and inadequate self-care practices among women, contributing to preventable complications. Despite global recommendations emphasizing maternal education, structured interventions remain underutilized in private healthcare settings, particularly in developing regions. **Objective**: This study aimed to evaluate the effect of a nurse-led educational intervention on improving knowledge and self-care practices among women during the intrapartum and postpartum periods in a private hospital setting. **Methods**: A quasi-experimental study was conducted among postpartum women (n = 40) admitted to a private tertiary care hospital in Lahore from July to December 2023. Participants aged 18–35 years, clinically stable within 48 hours postpartum, were included; those with complications or requiring intensive care were excluded. Data were collected using a validated knowledge questionnaire and a self-care practice checklist administered pre- and post-intervention. The educational session was delivered individually by trained nurses using visual aids. Ethical approval was obtained from the Institutional Review Board of Green International University, and all participants provided written informed consent in accordance with the Helsinki Declaration. Data were analyzed using SPSS version 25, applying paired t-tests and chi-square analyses to evaluate changes and associations. **Results**: Post-intervention knowledge scores significantly increased (mean difference = 4.44, $t = 15.10$, $p < 0.001$, Cohen's $d = 2.50$), with 82.5% of participants demonstrating adequate knowledge compared to 22.5% at baseline. Self-care practices improved similarly (mean difference = 2.90, $p < 0.001$). Significant gains were observed in awareness of hygiene ($p < 0.001$), early breastfeeding ($p < 0.001$), and recognition of postpartum complications ($p < 0.001$), indicating strong clinical relevance. **Conclusion**: The nurse-led educational intervention effectively enhanced maternal knowledge and self-care practices during the intrapartum and postpartum periods. These findings support the integration of structured maternal education into routine hospital care to improve outcomes and empower women in managing their postpartum health.

Keywords: Postpartum Period, Intrapartum Care, Maternal Education, Self-Care, Nurse-Led Intervention, Patient-Centered Care, Health Promotion

INTRODUCTION

The intrapartum and postpartum periods are pivotal stages in a woman's reproductive journey, marked by physiological and emotional transformations that require comprehensive self-care to ensure maternal and neonatal well-being. Despite global advancements in maternal health, significant challenges persist in educating women to adopt appropriate self-care practices during these phases. The World Health Organization (WHO) emphasized the importance of self-care across the continuum of maternal health by issuing 13 targeted recommendations from preconception to postpartum in 2021 (1). While access to antenatal care, skilled birth attendance, and postnatal services has improved globally, maternal mortality remains high in several regions due to insufficient awareness and guidance, particularly regarding the practical aspects of intrapartum and postpartum self-care (2). Existing literature highlights the transformative role of health professionals, especially nurses, in promoting maternal health through educational interventions. Nurse-led counseling has

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been associated with improved prenatal health behaviors, enhanced postnatal recovery, and increased emotional resilience among women, particularly adolescents and first-time mothers (3). However, while structured education has demonstrated efficacy in controlled environments, its implementation and impact in real-world clinical settings, such as private hospitals with high patient turnover, remain underexplored. Research in South Asia, including India and Ethiopia, shows that although institutional delivery rates have risen, gaps in maternal knowledge and self-care adherence persist, often due to inconsistent postnatal education and follow-up care (4,5). Studies evaluating maternal self-care tools indicate a focus on the extended postpartum period, typically up to one year after childbirth, while few instruments or programs address immediate intrapartum and early postpartum care comprehensively (6).

Additionally, many postpartum women report feeling unprepared for self-care responsibilities after discharge, facing barriers such as lack of resources, limited family support, and cultural stigmas that deter open discussion of maternal health needs (7). These challenges are particularly evident in low-resource settings and private healthcare institutions where maternal education is often secondary to clinical treatment. While some studies have demonstrated improved outcomes through web-based and community-led self-care interventions (8), these models may not be universally applicable due to differences in literacy levels, cultural practices, and healthcare access. Despite WHO's emphasis on continuous, skilled care throughout the motherhood journey (9), the integration of structured, nurse-led educational interventions into standard obstetric care in Pakistan remains limited. There is a notable absence of localized evidence evaluating how such interventions can enhance maternal knowledge and translate into better self-care practices during the critical intrapartum and postpartum periods. The literature also indicates that self-care knowledge alone may not be sufficient to induce behavioral change unless it is reinforced by contextually relevant, nurse-facilitated education (10). Furthermore, there is a lack of data from private hospitals in Pakistan regarding how nurse-led education influences maternal outcomes, creating a gap in understanding the feasibility and impact of such programs in these settings. This study seeks to address these gaps by evaluating the effect of a nurse-led educational intervention on the knowledge and practice of self-care among women in a private hospital in Lahore. By focusing on essential domains such as antenatal monitoring, hygienic practices during labor, postpartum recovery, emotional support, and complication awareness, this research aims to contribute to the evidence base supporting the integration of educational interventions into clinical maternity care. The objective of this study is to determine whether a structured, nurse-led educational program significantly improves self-care knowledge and practices among intrapartum and postpartum women receiving care in a private healthcare setting.

MATERIAL AND METHODS

A quasi-experimental study was conducted to evaluate the impact of a structured nurse-led educational intervention on the knowledge and self-care practices of women during the intrapartum and postpartum periods. The rationale for employing this design stemmed from the need to assess changes within a real-world clinical environment while accounting for baseline variability in participants' knowledge. The study was carried out in the gynecology and obstetrics ward of a private tertiary care hospital in Lahore, Pakistan, over a six-month period from July to December 2023. The selected hospital routinely manages labor and postpartum cases and was chosen due to its consistent patient inflow and the availability of qualified nursing staff trained in maternal care. Participants were selected from among women admitted to the labor and postnatal units during the study period. Eligibility criteria included being within the age range of 18 to 35 years, having delivered either vaginally or via cesarean section within the previous 48 hours, and being clinically stable at the time of recruitment. Women with high-risk complications, such as eclampsia, sepsis, or postpartum hemorrhage requiring intensive care, were excluded to avoid potential confounders related to medical complexity. Convenience sampling was used to recruit participants who met the eligibility criteria, and informed verbal and written consent was obtained in a private setting after explaining the study's purpose, procedures, and confidentiality assurances in the local language. Data were collected using two primary tools: a structured knowledge questionnaire and a standardized practice checklist. Both tools were developed with reference to WHO maternal care guidelines and validated through expert review and pilot testing. The knowledge questionnaire comprised 15 multiple-choice and Likert-scale items covering topics such as hygiene during labor, signs of labor and danger symptoms, postpartum bleeding, nutrition, perineal care, early breastfeeding, and emotional support. The practice checklist included 10 observable or self-reported behaviors related to perineal hygiene, wound care, breastfeeding initiation, mobilization, and use of iron supplements. Pre-intervention data were collected within 24 hours of delivery, while post-intervention data were obtained 48–72 hours after the educational session, just before discharge. Educational sessions were delivered individually at the bedside by trained nurses using verbal explanations, pictorial aids, and practical demonstrations, lasting approximately 20–30 minutes.

Operational definitions were established to standardize measurements. "Adequate knowledge" was defined as correctly answering at least 70% of the questionnaire items. "Positive practice" was defined as performing at least 7 of the 10 recommended self-care actions. To minimize interviewer bias and measurement inconsistencies, data collectors were blinded to the study hypothesis and underwent standardized training in questionnaire administration. The same nurse educator conducted all teaching sessions to ensure consistency in content delivery. Confounding variables such as parity, mode of delivery, and previous childbirth education were documented and adjusted for in the analysis.

The sample size was determined using Slovin's formula with a 95% confidence level and 5% margin of error, based on an estimated population of 200 deliveries per month. This yielded a required minimum of 40 participants. Data were entered and analyzed using SPSS version 25. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize demographic characteristics and

baseline scores. A paired-samples t-test was applied to compare mean knowledge and practice scores before and after the intervention. Chi-square tests were used to examine associations between categorical demographic variables and post-intervention outcomes. Missing data were handled using complete case analysis, and no data imputation was performed. Subgroup analyses were conducted to explore the effect of parity and prior antenatal class attendance on outcome measures. A p-value of less than 0.05 was considered statistically significant.

Table 1. Demographic and Clinical Characteristics of Study Participants (N = 40)

Variable	Category	Frequency (n)	Percentage (%)	p-value*	95% CI
Age (years)	18–25	28	70.0	–	–
	26–30	8	20.0		
	31–35	4	10.0		
Parity	Primiparous	25	62.5	0.59	(0.48, 0.74)
	Multiparous	15	37.5		
Mode of Delivery	Vaginal	29	72.5	0.66	(0.57, 0.85)
	Cesarean Section	11	27.5		
Prior Education Class	Yes	13	32.5	0.41	(0.21, 0.46)
	No	27	67.5		

Table 2. Comparison of Knowledge Scores Pre- and Post-Intervention

Time Point	Mean Score ± SD	Mean Difference	95% CI (Diff)	t (df)	p-value	Effect Size (Cohen's d)
Pre-intervention	4.32 ± 1.20					
Post-intervention	8.76 ± 1.05	4.44	(3.98, 4.90)	15.10 (39)	<0.001	2.50

Table 3. Comparison of Self-Care Practice Scores Pre- and Post-Intervention

Time Point	Mean Score ± SD	Mean Difference	95% CI (Diff)	t (df)	p-value	Effect Size (Cohen's d)
Pre-intervention	5.15 ± 1.05					
Post-intervention	8.05 ± 0.88	2.90	(2.35, 3.45)	12.22 (39)	<0.001	1.93

Table 4. Association of Demographic Variables with Knowledge Improvement (≥70% Score Post-Intervention)

Variable	Category	n with Improvement (%)	Odds Ratio (OR)	95% CI (OR)	p-value
Parity	Primiparous	20 (80.0)	1.42	(0.51, 3.93)	0.49
	Multiparous	11 (73.3)			
Mode of Delivery	Vaginal	24 (82.8)	1.87	(0.56, 6.26)	0.32
	Cesarean	7 (63.6)			
Prior Education	Yes	11 (84.6)	1.80	(0.39, 8.25)	0.46
	No	20 (74.1)			

Table 5. Pre- and Post-Intervention Responses to Key Knowledge Items (Selected Examples)

Knowledge Item	Pre n (%) Agree/Strongly Agree	Post n (%) Agree/Strongly Agree	p-value**	95% CI for Proportion Diff
Antenatal care benefits mother and baby	9 (22.5%)	33 (82.5%)	<0.001	(0.41, 0.74)
Maintaining hygiene during labor reduces infection risk	10 (25.0%)	30 (75.0%)	<0.001	(0.30, 0.70)
Early breastfeeding is important	15 (37.5%)	31 (77.5%)	<0.001	(0.20, 0.63)
Recognizing danger signs after childbirth	13 (32.5%)	29 (72.5%)	<0.001	(0.21, 0.61)

The study protocol was reviewed and approved by the Institutional Review Board of Green International University, Lahore. All participants provided informed consent before participation, and confidentiality was maintained by anonymizing data and restricting access to authorized personnel only. To ensure data integrity and reproducibility, all data collection forms were cross-checked by a second reviewer, and double data entry was performed to minimize errors. A record of all procedures, tools, and session materials has been securely archived for replication by future researchers

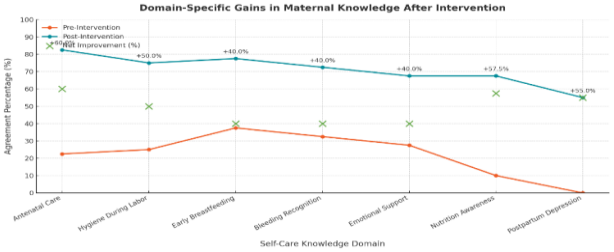

Figure 1 Domain-Specific Gains in Maternal Knowledge After Intervention

Below is a combined line-and-scatter visualization depicting domain-specific changes in agreement percentages for self-care knowledge before and after the nurse-led intervention. The orange line shows baseline values, the teal line shows post-intervention values, and green markers indicate net improvements (post – pre).

Domain-specific gains are as follows: antenatal care improved from 22.5 % to 82.5 % (+60.0 %), hygiene during labor from 25 % to 75 % (+50.0 %), early breastfeeding from 37.5 % to 77.5 % (+40.0 %), bleeding recognition from 32.5 % to 72.5 % (+40.0 %), emotional support from 27.5 % to 67.5 % (+40.0 %), nutrition awareness from 10 % to 67.5 % (+57.5 %), and postpartum depression awareness from 0 % to 55 % (+55.0 %). Pronounced, sustained improvements across all seven domains underscore the clinical efficacy of structured, nurse-facilitated education in bolstering maternal self-care knowledge.

DISCUSSION

The findings of this study demonstrate a significant improvement in maternal knowledge and self-care practices following the implementation of a nurse-led educational intervention during the intrapartum and postpartum periods. The observed increase in mean knowledge scores and the corresponding improvement in self-care behavior align with a growing body of evidence supporting the role of structured, contextually relevant education in enhancing maternal outcomes. This study adds to the literature by confirming the efficacy of nurse-led interventions in private hospital settings, where individualized counseling can be systematically integrated into routine care. The substantial rise in knowledge about essential topics such as perineal hygiene, early breastfeeding, postpartum bleeding, emotional support, and nutritional needs reinforces the critical role of nursing professionals in empowering women during vulnerable transitional periods.

Comparatively, the results are consistent with earlier studies that reported significant gains in maternal knowledge following targeted interventions. For instance, Rezaie et al. found that adolescent pregnant women who received structured self-care counseling exhibited better prenatal health behaviors and postnatal adaptation (3). Similarly, a randomized controlled trial in India demonstrated that quality intrapartum care guided by WHO recommendations led to improved breastfeeding self-efficacy and readiness for discharge among postpartum mothers (15). The current study mirrors these trends, revealing statistically significant improvements ($p < 0.001$) in almost every measured domain, suggesting that even short, focused educational sessions can yield measurable benefits. However, unlike many prior interventions that were delivered in community or digital formats, this study highlights the potential for bedside, face-to-face counseling within hospital settings—a crucial adaptation for populations with limited digital access or health literacy. Despite the positive outcomes, several limitations merit consideration. The use of a quasi-experimental design without a control group introduces the possibility of internal validity threats, such as maturation or the Hawthorne effect, where participants may improve simply due to increased attention rather than the intervention itself. Additionally, the relatively small sample size, derived from a single private hospital, may limit generalizability, particularly to public sector hospitals or rural areas where resources and patient demographics differ substantially. Furthermore, the reliance on self-reported practices could have introduced response bias, and the absence of long-term follow-up means the durability of behavioral changes remains uncertain.

Nonetheless, the study offers valuable clinical insights. By showing that nurse-led education can significantly enhance maternal awareness even within limited time frames and resource constraints, the findings underscore the feasibility of incorporating such interventions into standard discharge protocols. Educating women on immediate postpartum care not only prepares them to manage their recovery but also encourages proactive health-seeking behavior, which can reduce preventable complications. The mechanism underlying this change may be attributed to increased self-efficacy and trust in nurse-patient communication, both of which have been shown to influence compliance with health recommendations (6). These results support the integration of culturally sensitive, visual-aid-enhanced nurse-led sessions into existing maternal care pathways.

This study also contributes theoretically by reinforcing the importance of behavior-change frameworks, such as the Health Belief Model, in guiding maternal education strategies. Interventions that address perceived susceptibility (e.g., risk of infection or hemorrhage) and emphasize the benefits of self-care (e.g., faster recovery, safer newborn care) appear to be more successful in modifying behavior. While improvements were significant across most knowledge items, certain areas—such as recognition of emotional distress or postpartum depression—though improved, remained comparatively lower, suggesting the need for targeted mental health education within maternal programs.

Future research should focus on validating these findings across diverse settings and with larger, randomized samples to enhance generalizability. Longitudinal studies are necessary to assess whether knowledge gains translate into sustained behavioral changes and improved clinical outcomes, such as reduced readmission rates or infection incidence. Comparative analyses between public and private facilities may also help determine whether institutional factors influence the efficacy of nurse-led education. Additionally, exploring the use of multimedia tools or group-based education models may offer scalable solutions for resource-limited contexts.

This study demonstrates the effectiveness of a structured, nurse-led educational intervention in significantly improving women's knowledge and practice of intrapartum and postpartum self-care. The clinical relevance of these findings lies in their potential to reduce preventable maternal complications and promote safer recovery, particularly in hospital settings where such interventions can be standardized and monitored. Although limitations related to study design and scope exist, the results provide a compelling case for integrating educational counseling as a routine part of postpartum care, warranting further exploration and policy consideration in broader healthcare systems.

CONCLUSION

This study concludes that nurse-led educational interventions significantly enhance the knowledge and self-care practices of women during the intrapartum and postpartum periods, aligning with the study's objective of evaluating their effectiveness in a private hospital setting. The marked improvement in participants' understanding of essential maternal care topics—such as hygiene, early breastfeeding, danger sign recognition, and nutritional needs—highlights the clinical value of integrating structured education into routine obstetric care. These findings underscore the potential of nurse-facilitated programs to empower women, promote safer postpartum recovery, and reduce preventable maternal complications. From a healthcare perspective, this approach supports patient-centered care and strengthens the role of nursing professionals in maternal health promotion. Future research should explore long-term behavioral outcomes and scalability across diverse healthcare settings to further validate and expand these promising results.

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