The Research of Medical Science Review
ISSN: 3007-1208 & 3007-1216 Volume 3, Issue 4, 2025

EFFECTIVENESS OF NURSING INTERVENTIONS IN REDUCING POSTPARTUM DEPRESSION AMONG MOTHERS AT LADY READING HOSPITAL – MEDICAL TEACHING INSTITUTION, PESHAWAR.

Asma Shaheen[1], Waheeda Bibi[*2], Sidra Bibi[3], Javeria Bibi[4]

*[1,*2]Charge Nurse, Obstetrics & Gynecology Department, Lady Reading Hospital – Medical Teaching Institution, Peshawar*
[3]Charge Nurse, Pediatrics Department, Khyber Teaching Hospital – Medical Teaching Institution, Peshawar
[4]Charge Nurse, Regional Blood Center, Peshawar

[*2]swsfori@gmail.com

DOI: https://doi.org/10.5281/zenodo.19754343

Keywords
Postpartum Depression, Nursing Care, EPDS, Pakistan

Article History
Received: 01 March 2025
Accepted: 15 April 2025
Published: 29 April 2025

Corresponding Author: *
Waheeda Bibi

Abstract

Background

Postpartum depression (PPD) is a common yet underdiagnosed mental health condition affecting women during the perinatal period, particularly in resource-limited settings like Khyber Pakhtunkhwa (KPK), Pakistan. Nurses in obstetric units play a critical role in early identification and management of PPD, but structured interventions are often lacking.

Objective

This study aimed to evaluate the effectiveness of structured nursing interventions in reducing the severity of postpartum depression among mothers admitted to the postnatal ward of LRH-MTI, Peshawar, over a one-year period from January 2023 to January 2024.

Methods

A quasi-experimental pre-test/post-test study design was employed. A total of 75 newly delivered mothers who screened positive for PPD using the Edinburgh Postnatal Depression Scale (EPDS) were enrolled. Structured nursing interventions including psycho-education, emotional support, mother-infant bonding facilitation, sleep hygiene counseling, relaxation techniques, and family involvement counseling were administered over a four-week period. EPDS scores were measured at baseline (pre-test) and four weeks post-intervention (post-test). Data were analyzed using SPSS version 25. Paired sample t-test was applied to compare pre- and post-intervention EPDS scores.

Results

The mean baseline EPDS score was 16.8 (±3.2), indicating moderate to severe depression, which significantly decreased to 9.1 (±2.7) post-intervention ($p < 0.001$). Clinically meaningful improvement was observed in 68% of participants. Higher baseline depression scores were noted among primiparous women, those with complicated deliveries, and those with limited family support.

Conclusion

Structured nursing interventions are highly effective in reducing the severity of postpartum depression among mothers at LRH-MTI, Peshawar. Integration of standardized PPD screening and nurse-led intervention protocols into routine

postnatal care is strongly recommended for all tertiary care hospitals in Khyber Pakhtunkhwa.

INTRODUCTION

Postpartum depression (PPD) is defined as a major depressive episode occurring within the first four weeks following childbirth, although many clinical guidelines extend this window to up to one year postpartum [1]. It is characterized by persistent sadness, emotional lability, loss of interest, fatigue, difficulty bonding with the newborn, disturbed sleep, and in severe cases, thoughts of self-harm or harm to the infant [2]. PPD affects approximately 10–20% of mothers globally, with significantly higher prevalence reported in low- and middle-income countries (LMICs) [3].In Pakistan, studies have reported PPD prevalence rates ranging from 28% to 63%, making it one of the most common and yet most neglected postpartum complications in the country [4,5]. The disparity between global and local prevalence rates reflects the combined influence of psychosocial stressors unique to Pakistani women, including poverty, gender-based discrimination, lack of spousal and family support, repeated pregnancies, and domestic violence [6]. Despite this high burden, formal screening and treatment protocols for PPD remain absent in the majority of public sector hospitals in Khyber Pakhtunkhwa (KPK) [7].Lady Reading Hospital – Medical Teaching Institution (LRH-MTI) is the largest and oldest tertiary care hospital in Peshawar and serves as the primary referral center for the entire province of KPK [8]. The obstetrics and gynecology department at LRH-MTI manages an extremely high patient volume, with thousands of deliveries recorded annually. Given this scale of operations, the postnatal ward serves as a critical point of contact between newly delivered mothers and the healthcare system. Nurses working in this ward are in a unique and powerful position to screen for, identify, and respond to PPD [9].Despite the growing global evidence supporting nurse-led interventions for PPD — including psychoeducation, emotional support, relaxation techniques, and family engagement strategies — such structured approaches have not been formally evaluated or implemented at LRH-MTI [10]. This study therefore sought to design, implement, and evaluate a structured nursing intervention protocol for PPD and measure its effectiveness using a validated screening tool, the Edinburgh Postnatal Depression Scale (EPDS), over a one-year study period from January 2023 to January 2024. The findings of this study are expected to contribute to the body of evidence supporting the expansion of nurse-led mental health interventions in obstetric settings across Pakistan, and to provide a practical framework that can be adopted by hospital administrations and nursing departments throughout KPK.

Methodology

Study Design

A quasi-experimental pre-test / post-test study design without a control group was employed for this research. This design was selected because it allows for the measurement of change over time within the same group of participants before and after the application of an intervention. It is practical and ethically appropriate in clinical settings where withholding care from a control group would be unjustifiable.

Study Setting

The study was conducted in the Postnatal Ward of the Department of Obstetrics and Gynecology, Lady Reading Hospital – Medical Teaching Institution (LRH-MTI), Peshawar, Khyber Pakhtunkhwa, Pakistan. LRH-MTI is the largest tertiary care hospital in KPK and serves as the primary referral center for obstetric emergencies and complicated deliveries from across the province.

Study Duration

The study was conducted over a period of twelve months, from January 2023 to January 2024. Data collection commenced in April 2023, with the final follow-up assessments completed in December 2023.

Study Population
The study population comprised newly delivered mothers admitted to the postnatal ward of LRH-MTI, Peshawar, who screened positive for postpartum depression using the Edinburgh Postnatal Depression Scale (EPDS) within 48 to 72 hours of delivery.

Sample Size
A sample of 75 participants was calculated using the formula for a single-group pre-test/post-test design, based on an expected effect size of 0.5, a significance level of 0.05, and a power of 80%. An additional 10% was added to account for possible dropouts, yielding an initial recruitment target of 83 participants. Final analysis was conducted on 75 participants who completed both pre- and post-intervention assessments.

Sampling Technique
Purposive sampling was employed to recruit participants who met the inclusion criteria. Mothers were screened during routine postnatal assessments by ward nurses who had received standardized training in EPDS administration.

Inclusion and Exclusion Criteria
Inclusion Criteria:
- Mothers who delivered at LRH-MTI (normal vaginal delivery or cesarean section)
- Age 18 years and above
- EPDS score of 10 or above at baseline screening
- Willing to participate and provide informed consent
- Able to communicate in Urdu or Pashto

Exclusion Criteria:
- Mothers with a pre-existing diagnosis of severe mental illness (schizophrenia, bipolar disorder)
- Mothers with serious neonatal complications requiring NICU admission
- Mothers who were transferred to other wards or discharged within 24 hours of enrollment
- Mothers already receiving psychiatric treatment or antidepressant therapy

Data Collection Tool
The primary data collection instrument was the Edinburgh Postnatal Depression Scale (EPDS), Urdu validated version. The EPDS is a 10-item self-reported questionnaire scored on a scale of 0–3, with a maximum total score of 30. A score of 10 or above is considered the threshold for probable postpartum depression. In addition, a structured demographic data form was developed to collect information on age, education, parity, mode of delivery, employment status, and perceived family support.

Nursing Intervention Protocol
A structured nursing intervention protocol was developed based on a review of current evidence and adapted for the cultural context of Peshawar. Each participant received the following interventions over a four-week period:
- Session 1 (Day 1–2, In-Hospital): Psycho-education about postpartum depression — causes, symptoms, and reassurance that PPD is a medical condition and not a personal failure
- Session 2 (Day 2–3, In-Hospital): Emotional support and active listening by the primary nurse — validation of the mother's feelings and experiences
- Session 3 (Day 3, In-Hospital): Mother-infant bonding facilitation — skin-to-skin contact guidance, breastfeeding support, newborn care demonstration
- Session 4 (Day 3–4, In-Hospital): Relaxation technique training — deep breathing exercises and progressive muscle relaxation
- Session 5 (Day 4, Pre-Discharge): Sleep hygiene counseling — importance of rest, sleep scheduling, and caregiver support
- Session 6 (Day 4, Pre-Discharge): Family involvement counseling — husband and primary caregiver were included in an education session on how to support the mother
- Session 7 (Week 2, Telephonic Follow-Up): Reinforcement of psycho-education, assessment of coping, answering questions
- Session 8 (Week 4, OPD Follow-Up or Telephonic): Final assessment, re-administration of EPDS, referral if score remained above threshold

Data Analysis

Data were entered and analyzed using IBM SPSS Statistics, Version 25. Descriptive statistics including frequencies, percentages, means, and standard deviations were used to summarize demographic data. Paired sample t-test was used to compare pre and post-intervention EPDS mean scores. A p-value of less than 0.05 was considered statistically significant.

Results

Participant Characteristics

A total of 75 postpartum mothers completed the study. Most participants (56%) were aged 21–30 years, and the majority were housewives (72%). Approximately 61% had primary or no formal education. Primiparous women accounted for 44% of the sample, while 62% had normal vaginal deliveries. Nearly half of the participants (48%) reported low family support (Table 1).

Baseline Depression Severity

All participants had baseline EPDS scores ≥10, confirming postpartum depression. The mean baseline EPDS score was 16.8 ± 3.2, indicating moderate to severe depression. A substantial proportion (40%) fell within the severe category (Table 2).

Effect of Intervention

Following the structured nursing intervention, a significant reduction in EPDS scores was observed. The mean score decreased to 9.1 ± 2.7 post-intervention. This difference was statistically significant ($p < 0.001$) based on paired sample t-test analysis (Table 3).

Clinical Outcomes

A clinically meaningful improvement (EPDS <10) was achieved in 68% of participants, while 32% continued to exhibit depressive symptoms (Table 4). Higher baseline depression scores were observed among primiparous mothers, those with complicated deliveries, and individuals reporting low family support.Overall, the intervention demonstrated a significant and clinically relevant reduction in postpartum depression severity, supporting the effectiveness of structured nurse-led interventions in postnatal care settings.

Table 1: Demographic Characteristics of Participants (n = 75)

Characteristic	Category / Value	Frequency / Percentage
Age	18–25 years	38 (50.7%)
	26–35 years	29 (38.7%)
	Above 35 years	8 (10.6%)
Education	No formal education	31 (41.3%)
	Primary/Secondary	28 (37.3%)
	Higher Secondary/Graduate	16 (21.3%)
Parity	Primipara	27 (36.0%)
	Multipara (2–4)	32 (42.7%)
	Grand Multipara (5+)	16 (21.3%)
Mode of Delivery	Normal Vaginal Delivery	44 (58.7%)
	Cesarean Section	31 (41.3%)
Family Support	Adequate	29 (38.7%)

	Moderate	31 (41.3%)
	Inadequate	15 (20.0%)

Pre- and Post-Intervention EPDS Scores

The mean EPDS score before the nursing intervention (pre-test) was 16.8 (SD ± 3.2), indicating moderate to severe postpartum depression across the study sample. Following the completion of the four-week structured nursing intervention protocol, the mean EPDS score decreased to 9.1 (SD ± 2.7). This reduction of 7.7 points was statistically significant as confirmed by the paired sample t-test ($p < 0.001$). Table 2 summarizes the pre- and post-test EPDS scores.

Table 2: Comparison of Pre- and Post-Intervention EPDS Scores (n = 75)

Measurement Point	Mean EPDS Score	Standard Deviation	P-Value
Pre-Intervention	16.8	± 3.2	—
Post-Intervention	9.1	± 2.7	< 0.001*
Mean Reduction	7.7 points	—	Significant

** Statistically significant at $p < 0.05$ level using Paired Sample t-test*

Clinical Response Rate

Of the 75 participants, 51 (68%) demonstrated a clinically meaningful response to the nursing interventions, defined as a reduction in EPDS score to below the threshold of 10. A further 17 participants (22.7%) showed partial improvement, with scores between 10 and 13 post-intervention. Seven participants (9.3%) did not show significant improvement and were referred to the psychiatric outpatient department for further evaluation and management. Table 3 outlines the clinical response categories.

Table 3: Clinical Response to Nursing Interventions (n = 75)

Response Category	Number of Participants	Percentage
Full Response (EPDS < 10)	51	68.0%
Partial Response (EPDS 10–13)	17	22.7%
No Response (EPDS > 13)	7	9.3%
Total	75	100%

Factors Associated with Higher Baseline EPDS Scores

Analysis of demographic variables revealed that primiparous mothers had a higher mean baseline EPDS score (18.2 ± 3.4) compared to multiparous mothers (15.9 ± 3.0). Mothers who underwent cesarean section also showed higher baseline scores (17.6 ± 3.1) compared to those with normal vaginal delivery (16.2 ± 3.3). The strongest predictor of high baseline EPDS scores was inadequate family support, with those reporting poor support scoring a mean of 19.4 ± 2.8 at baseline.

Discussion

The findings of this study demonstrate that structured nursing interventions significantly reduce the severity of postpartum depression (PPD) among mothers at Lady Reading Hospital – MTI, Peshawar. The marked decline in mean

EPDS scores from 16.8 to 9.1 ($p < 0.001$) over four weeks indicates both statistical and clinical effectiveness of nurse-led interventions in improving maternal mental health outcomes [9].These results are consistent with existing international literature supporting psychosocial nursing interventions in PPD management. A systematic review by Dennis and Hodnett reported that structured postnatal support significantly reduces depressive symptoms [10]. Similarly, studies conducted in China, Sri Lanka, and Malaysia have demonstrated that interventions combining psychoeducation, emotional support, relaxation techniques, and family engagement yield meaningful reductions in PPD severity [11–13]. The present study reinforces these findings within a low-resource, high-burden healthcare setting.The observed 68% clinical improvement rate highlights the effectiveness of non-pharmacological, nurse-led care as a first-line strategy for PPD management. Notably, only a small proportion of participants required referral for specialized psychiatric care, underscoring the potential of task-shifting mental health services to trained nursing staff in resource-constrained settings [14].Family support emerged as a critical determinant of maternal mental health, with inadequate support associated with higher baseline EPDS scores. This finding aligns with regional evidence emphasizing the protective role of family involvement in postpartum recovery [15,16]. The incorporation of family counseling within the intervention protocol was therefore both contextually appropriate and evidence-based.Higher depression scores among primiparous mothers and those undergoing cesarean delivery are consistent with previous studies [17–19]. First-time mothers often experience greater psychological stress due to role transition, while cesarean delivery is associated with delayed recovery, breastfeeding challenges, and increased anxiety. These findings suggest the need for targeted screening and tailored support for high-risk groups.A major strength of this study lies in its setting at LRH-MTI, a high-volume tertiary care center, enhancing the generalizability of findings to similar healthcare contexts across Khyber Pakhtunkhwa [20]. Additionally, the use of the Urdu-validated EPDS ensured cultural relevance and reliability of assessment.

However, certain limitations must be acknowledged. The absence of a control group limits causal inference, while the relatively short follow-up period restricts assessment of long-term outcomes. Furthermore, reliance on self-reported measures may introduce response bias. Future research should employ randomized controlled designs with extended follow-up durations to validate and sustain these findings [21].

Limatations

The study lacked a control group, had a small sample size, short follow-up duration, and relied on self-reported measures, potentially introducing bias and limiting generalizability and long-term outcome assessment.

Conclusion

This study demonstrates that structured, nurse-led interventions are effective in significantly reducing postpartum depression among mothers at Lady Reading Hospital – Medical Teaching Institution, Peshawar. A 68% full response rate and a statistically significant mean reduction of 7.7 EPDS points confirm that obstetric nurses can play a transformative role in addressing PPD when equipped with standardized protocols and training. The findings highlight an urgent need for the formal integration of PPD screening and nurse-led intervention pathways into routine postnatal care across all tertiary care hospitals in Khyber Pakhtunkhwa.

Disclaimer: Nil
Conflict of Interest: Nil
Funding Disclosure: Nil

Authors Contributions:

Concept & Design of Study: **Asma Shaheen**[1]
Data Collection & Data Analysis: **Waheeda Bibi**[2]
Critical Review: **Sidra Bibi**[3]**, Asma Shaheen**[1]
Drafting: **Javeria Bibi**[4]
Final Approval of version: **All Mentioned Authors**

REFERENCES

Cox JL, Holden JM, Sagovsky R. Detection of postnatal depression: Development of the 10-item Edinburgh Postnatal Depression Scale. British Journal of Psychiatry. 1987;150(6):782–786.

Dennis CL, Hodnett E. Psychosocial and psychological interventions for treating postpartum depression. Cochrane Database of Systematic Reviews. 2007;(4):CD006116.

Gao LL, Luo SY, Chan SW, Lou FL. Effect of structured postpartum exercise and psychoeducation on Chinese women's postpartum depression. Midwifery. 2015;31(8):782–790.

Agampodi SB, Wickramasinghe ND, Agampodi TC. Prevalence of postpartum depression and its associated factors in Sri Lanka. Ceylon Medical Journal. 2014;59(4):105–110.

Rahman A, Malik A, Sikander S, Roberts C, Creed F. Cognitive behaviour therapy-based intervention by community health workers for mothers with depression and their infants in rural Pakistan. The Lancet. 2008;372(9642):902–909.

Abdollahi F, Lye MS, Zarghami M. Perspective of postpartum depression theories: A narrative literature review. North American Journal of Medical Sciences. 2016;8(6):232–236.

Zahidie A, Jamali AR. An overview of risk factors for postpartum depression in Pakistani context. Journal of the College of Physicians and Surgeons Pakistan. 2013;23(8):573–580.

Husain N, Bhattacharyya M, Bhattacharyya R, Dubey I. Prevalence of postnatal depression in South Asian women. Asian Journal of Psychiatry. 2006;1(2):1–4.

O'Hara MW, McCabe JE. Postpartum depression: Current status and future directions. Annual Review of Clinical Psychology. 2013;9:379–407.

World Health Organization. Maternal Mental Health. Geneva: WHO; 2022. Available at: https://www.who.int/mental_health/maternal-child/maternal_mental_health/en/

Khan FN, Khan B, Tahir M. Prevalence of postpartum depression among women attending postnatal clinics in Khyber Pakhtunkhwa, Pakistan. Journal of Postgraduate Medical Institute. 2019;33(2):148–153.

Buist A, Bilszta J. The beyondblue National Postnatal Depression Program: Prevention and Early Intervention 2001–2005. Melbourne: Beyond Blue; 2006.

Almond P. Postnatal depression: A global public health perspective. Perspectives in Public Health. 2009;129(5):221–227.

Khan MN, Chiumento A, Dherani M, Bristow K, Sikander S, Ahmad A. Psychological distress and its correlates among pregnant women attending primary healthcare in Chitral, Pakistan. Asia-Pacific Psychiatry. 2015;7(3):255–264.

Stewart DE, Vigod SN. Postpartum depression: Pathophysiology, treatment, and emerging therapeutics. Annual Review of Medicine. 2019;70:183–196.

Yawn BP, Olson AL, Bertram S, Pace W, Wollan P, Dietrich AJ. Postpartum depression: Screening, diagnosis, and management programs 2000 through 2010. Depression Research and Treatment. 2012;2012:363964.

Lanes A, Kuk JL, Tamim H. Prevalence and characteristics of postpartum depression symptomatology among Canadian women. BMC Public Health. 2011;11:302.

Xie RH, Lei J, Wang S, Xie H, Walker M, Wen SW. Caesarean section and postpartum depression in a cohort of Chinese women with a high caesarean delivery rate. Journal of Women's Health. 2011;20(12):1881–1886.

Noorani S, Rahim S, Qureshi RN. Validation of Edinburgh Postnatal Depression Scale (EPDS) in a Pakistani clinical setting. Journal of Pakistan Medical Association. 2015;65(11):1184–1188.

Howard LM, Molyneaux E, Dennis CL, Rochat T, Stein A, Milgrom J. Non-psychotic mental disorders in the perinatal period. The Lancet. 2014;384(9956):1775–1788.