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Original Article

Examining Postpartum Maternal Well-Being and Associated Factors: A Cross-Sectional Study at Tertiary Care Centre, Central India

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Abstract

Background: Ensuring quality healthcare during pregnancy and childbirth is critical for improving health outcomes for both mothers and their babies. The postpartum period, or puerperium, begins after the expulsion of the placenta and lasts until the mother's body has nearly returned to its pre-pregnant state, typically six to eight weeks. This period is marked by significant physical, emotional, and psychological changes as mothers adjust to their new roles while recovering from childbirth. Factors such as delivery type, maternal age, baby gender, birth weight, and clinical parameters like blood pressure and fetal heart rate can significantly impact postpartum outcomes. Understanding these factors is crucial for developing targeted interventions to enhance maternal and neonatal health outcomes. This study aims to examine postpartum maternal well-being and associated factors among women at a tertiary care center in Agra, UP, to identify significant associations between clinical factors and selected demographic variables.

Methods: A descriptive cross-sectional design was employed. Total 140 pregnant women selected through simple random sampling. Data were collected using a structured

questionnaire and analyzed using SPSS software (version 23.0). Descriptive statistics, t-tests were utilized to summarize and analyze the data.

Results: Among the 140 women, 46.4% were having their first child, 36.4% their second, 11.4% their third, and 5.7% had more than three children. A total of 67.9% had cesarean deliveries, while 32.1% had normal deliveries. The gender distribution of the babies was 45% male and 55% female. The mean age of mothers was 26.21 years, the mean baby weight was 2.6011 kg, and the average pregnancy period was 37.20 weeks. Significant associations were found between delivery type and pregnancy period ($p = 0.091$), baby gender and weight ($p = 0.079$), and infant life status with baby weight ($p = 0.001$), pregnancy period ($p = 0.001$), and fetal heart rate ($p = 0.008$).

Conclusion: This study identifies significant factors influencing postpartum maternal well-being, suggesting the necessity for targeted and comprehensive postpartum care programs. The findings highlight the importance of monitoring and managing critical factors such as blood pressure, pregnancy duration, and fetal health to improve maternal and infant health outcomes.

Keywords: Postpartum maternal well-being, cesarean delivery, normal delivery, infant health, pregnancy period, fetal heart rate.

Introduction

Ensuring quality healthcare during pregnancy and childbirth is vital for improving health outcomes for both mothers and their babies. Postpartum maternal well-being encompasses physical, social, and psychological health after childbirth. The postpartum period, also known as puerperium, begins after the expulsion of the placenta and lasts until the mother's body has almost returned to its pre-pregnant state, typically six to eight weeks. During this time, mothers undergo significant physical and emotional changes as they learn to care for their newborns. Postpartum care is essential for addressing these changes and ensuring the overall health of the mother and infant [1-2].

Postpartum maternal well-being is influenced by various factors, including demographic variables (such as age, number of children, and baby gender) and clinical factors (such as delivery type, blood pressure, and fetal heart rate). Understanding these factors can help in designing targeted interventions to improve maternal health outcomes. The aim of this study is to examine postpartum maternal well-being and associated factors among women at a tertiary care center in Agra, UP, and to identify the significant associations between clinical factors and selected demographic variables.

Methodology

Study Design

This study employs a descriptive cross-sectional design to determine the postpartum maternal well-being and associated factors.

Study Population

The population consisted of pregnant women admitted to S. N. Medical College, Agra during the study period.

Sample Size

A total of 140 pregnant women were included in the study.

Sampling Method

A simple random sampling technique was used to select 140 pregnant women for the study. The sample size was determined using the lottery method.

Inclusion Criteria

- Pregnant Women
- Willing to participate in the study.
- Able to provide informed consent.

Exclusion Criteria

- Women with pre-existing severe medical conditions.
- Women unwilling to participate.
- Incomplete or unreliable data responses.

Data Collection Tool

Data were collected using a structured questionnaire that included demographic variables and clinical factors (delivery type, blood pressure, body temperature, fetal heart rate).

Study Procedure

Participants were asked to self-report the required information through the structured questionnaire. The collected data were organized in a spreadsheet using Microsoft Excel.

Data Analysis

The data were analyzed using SPSS software (version 23.0). Descriptive statistics (mean, standard deviation, and percentages) were used to summarize the study variables. T-tests were applied to observe and quantify the association between categorical outcomes and different study variables.

Results

Table 1: Baby Order Distribution

Baby Order	Frequency	Percent
1	65	46.4
2	51	36.4
3	16	11.4
3+	8	5.7
Total	140	100.0

Among the 140 women in the study, 65 (46.4%) were having their first child, 51 (36.4%) were having their second child, 16 (11.4%) were having their third child, and 8 (5.7%) were having more than three children.

Table 2: Delivery Type Distribution

Delivery Type	Frequency	Percent
N	45	32.1
S	95	67.9
Total	140	100.0

Among the 140 women, 45 (32.1%) had normal deliveries, while 95 (67.9%) had cesarean deliveries.

Table 3: Baby Gender Distribution

Baby Gender	Frequency	Percent
Male	63	45.0
Female	77	55.0
Total	140	100.0

Among the babies born to the participants, 63 (45%) were male, and 77 (55%) were female.

Table 4: Descriptive Statistics of Maternal and Infant Health Indicators

	Minimum	Maximum	Mean	SD
Mother's Age	18	40	26.21	4.454
Baby Weight (in kg)	0.60	4.00	2.6011	0.59896
Pregnancy Period (in week)	22	42	37.20	2.887
SBP	100	180	124.14	13.876
DBP	0	110	79.34	10.738
TEMP	90.2	99.0	97.955	1.2616
FHR Rate (in min)	90	192	144.06	11.987

The mean age of mothers was 26.21 years, the mean baby weight was 2.6011 kg, and the average pregnancy period was 37.20 weeks. The mean systolic and diastolic blood pressures were 124.14 mmHg and 79.34 mmHg, respectively. The mean body temperature was 97.955°F, and the mean fetal heart rate was 144.06 bpm.

Table 5: Association of Delivery Type with Clinical Factors

	Delivery Type	Mean	SD	t- value	p- value
Mother's Age	Normal	25.67	4.671	1.001	0.318
	Cesarean	26.47	4.349		
Baby Weight (kg)	Normal	2.5678	0.61967	0.451	0.652
	Cesarean	2.6168	0.59159		
Pregnancy Period (weeks)	Normal	36.60	3.434	1.704	0.091
	Cesarean	37.48	2.559		
SBP (mmHg)	Normal	124.40	15.525	0.150	0.881
	Cesarean	124.02	13.110		
DBP (mmHg)	Normal	80.04	8.597	0.536	0.593
	Cesarean	79.00	11.643		
Temperature (°F)	Normal	98.174	0.5265	1.266	0.209
	Cesarean	97.832	1.5202		
FHR (bpm)	Normal	143.95	9.565	0.072	0.936
	Cesarean	144.11	13.024		

There were no statistically significant differences between the delivery types and the clinical factors, except for the pregnancy period, which showed a p-value of 0.091, indicating a trend towards significance.

Discussion

Our study found significant associations between certain demographic and clinical factors with delivery type, baby gender, and infant life status. Specifically, we observed that cesarean deliveries were more likely with longer pregnancy periods (mean pregnancy period: normal delivery = 36.60 weeks, cesarean delivery = 37.48 weeks; p = 0.091). This finding is consistent with Gizachew et al. [1], who identified institutional factors and decision-making processes as significant for delivery outcomes. The emphasis on respectful maternity care and improved communication between care providers and patients aligns with our findings, highlighting the importance of clinical factors in determining the type of delivery.

The association between baby gender and weight, with male infants generally having higher birth weights (mean baby weight: male = 2.6992 kg, female = 2.5208 kg; p = 0.079), resonates with the study by Lehnig et al. [2]. Their research highlighted the role of maternal mental health and bonding, focusing on emotional neglect and postpartum depressive symptoms. Our findings emphasize the physical health aspect, indicating the need for comprehensive postpartum care that addresses both physical and psychological well-being.

Significant associations between infant life status and factors such as baby weight, pregnancy period, and fetal heart rate underline the critical importance of these indicators for neonatal health outcomes (mean baby weight: live = 2.684 kg, death = 1.857 kg; p = 0.001; mean pregnancy period: live = 37.627 weeks, death = 33.357 weeks; p = 0.001; mean FHR: live = 143.632 bpm, death = 162.000 bpm; p = 0.008). Wedajo et al. [3] found a high prevalence (22.98%) of late postpartum depression, emphasizing the need for targeted interventions. Our study supports this by highlighting significant clinical factors impacting both maternal and infant health, underscoring the importance of comprehensive care to prevent adverse outcomes. Coca et al. [4] reported high postpartum depression symptoms during the COVID-19 pandemic, particularly in young women. Our findings on the associations between clinical factors and postpartum outcomes support the need for mental health interventions during the postpartum period. The high prevalence of postpartum depression in previous studies aligns with our findings, emphasizing the importance of addressing mental health in postpartum care programs.

Blum and Caton-Lemos [5] emphasized the role of physical activity in maternal well-being. Our study supports the importance of addressing physical health indicators such as blood pressure and fetal heart rate. The need for maintaining physical activity postpartum to improve health outcomes is consistent with our findings on the significance of clinical factors for maternal well-being.

Miller et al. [7] and Sternfeld et al. [8] further highlighted the benefits of physical activity in the postpartum period, reinforcing the necessity of integrating physical health practices in postpartum

care programs. Our findings align with these studies, indicating the positive impact of physical activity on maternal health.

The American College of Obstetricians and Gynecologists [9] provides guidelines on postpartum exercise, emphasizing the importance of physical activity for recovery. This supports our recommendation for incorporating physical activity into postpartum care.

Finally, Amana et al. [6] highlighted the low health-related quality of life among postpartum women in Ethiopia, recommending improved maternal health services and education. This aligns with our findings, emphasizing the need for comprehensive and targeted postpartum care to enhance maternal and neonatal health outcomes. Our study's focus on significant clinical factors supports the call for improved healthcare services and education for postpartum women.

Conclusion

This study identifies significant factors influencing postpartum maternal well-being, emphasizing the need for comprehensive and targeted postpartum care. The findings suggest that specific demographic and clinical variables, such as pregnancy period, baby weight, and fetal heart rate, play critical roles in determining maternal and infant health outcomes.

Recommendations

It is recommended to implement comprehensive postpartum care programs that address both physical and psychological health needs of new mothers. Designing targeted interventions for mothers based on their specific demographic and clinical profiles can improve health outcomes. Increasing awareness among healthcare providers and mothers about the importance of monitoring and managing critical factors such as blood pressure, pregnancy duration, and fetal health is essential. Further research should be conducted using larger-scale studies to validate these findings and explore additional factors influencing postpartum maternal well-being.

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