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Effect Of Mode Of Delivery On Maternal Satisfaction, Anxiety, Stress And Depression In Primiparous Postnatal Mothers.

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Abstract
Background: *Childbirth is life-transforming event followed by time of heightened psychological vulnerability in mother.*
Aims of study: *To assess effect of mode of delivery on maternal satisfaction, anxiety, stress & depression in primiparous postnatal mothers.*
Methodology: *A cross-sectional correlational research study was conducted on 102 Primiparous postnatal mothers admitted in Postnatal care ward of Department of Obstetrics and Gynaecology, King George Medical University, Lucknow. Sample were selected through Purposive sampling with inclusion criteria of age group (21-39 years). Data was collected by socio-demographic & clinical variables, followed by Depression, anxiety and stress scale (DASS-21) & scale for measuring maternal satisfaction in normal birth (SMMS- normal birth).*
Result: *Overall average score for DASS-21 was 17.1275, which indicate moderate overall level of emotional distress in all participants, totaling 102 were classified as having high satisfaction representing 100.0% of the sample. Mean score was 176.10 with standard deviation (SD) of 7.269, indicating average level of satisfaction. Caesarean section were associated with higher levels of depression, anxiety, stress compared to both normal & vaginal operative deliveries, with all significant differences marked at 0.05 level.*
Conclusion: *It is evident from present study showed that Normal vaginal deliveries were associated with higher satisfaction and lower levels of psychological distress.*
Keywords: *Mode of delivery, maternal satisfaction, anxiety, stress, depression, primiparous postnatal mother.*

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I. Introduction

The World Health Organization (WHO) describes the postpartum period as the most critical and yet the most neglected phase in the lives of mothers and babies; most maternal and newborn deaths occur during this period.[1] The postpartum period represents a significant time of change and challenge for women, often carrying consequences for physical and mental health.[2]

The WHO (World Health Organization) recognizes that promoting a positive childbirth experience is a very important factor in the care of mothers and provides a global list of recommendations for Intrapartum Care for a Positive Childbirth Experience. Some of these recommendations are directly related to lower incidence of PPD (postpartum depression), such as choosing the support person who is not a member of hospital staff.[3]

Mode of delivery is a method through which a mother delivers a baby depend on mother and baby condition, it can be either vaginal or caesarean section, many options for childbirth are also type of mode of delivery such as: forceps delivery and vacuum delivery.[4] Mode of delivery has been investigated as a possible risk factor for postnatal depression. The postpartum period represents a significant time of change and challenge for women, often carrying consequences for physical and mental health. Childbirth satisfaction is one of the

main factors that reflects the work of medical institutions.[5]

According to the CDC, approximately 25% of women experience postpartum mental health issues, such as anxiety and depression symptoms.[6] Postpartum depression is a depressive disorder that occurs after childbirth and can last for a year after childbirth. The global prevalence of postpartum depression in mothers ranges from 0.5% and 63.3%. The global prevalence of Postpartum Depression is estimated to range from 10 to 30%.[7]

In India, about 22% of mothers suffer from postpartum depression.[8] Positive childbirth experience scan act as an effective prevention of psychological postpartum trauma. High- quality and individualized maternity care during childbirth is a factor associated with very positive birth satisfaction.[9] The prevalence of Postpartum depression is estimated to be between 7 - 30% across low- middle- and high-income countries. Indeed, a recent review showed that, 22 of 28 low- and middle- income countries, postnatal depression prevalence was higher than in high-income countries.[10] So, the present study was aimed to assess the effect of mode of delivery on maternal satisfaction, anxiety, stress, depression in primiparous postnatal mothers and also assess the association between mode of delivery and maternal satisfaction, anxiety, stress, depression in primiparous postnatal mothers and to assess the association between sociodemographic factors, clinical variables and research variable.

II. Methodology:

A cross sectional study was conducted at the Department of Obstetrics and Gynaecology, Queen Mary Lucknow, U.P. India. Purposive sampling technique was employed to draw the sample. Patients willing to participate in the study with age group (21-39 year), Primiparous postnatal mothers were included in this study. Patients with any severe medical disease and those having serious psychiatric condition were excluded.

Assessment Instruments

- Socio- demographic and clinical variable
- Scale for measuring maternal satisfaction in normal birth (SMMS- normal birth)
- Depression, Anxiety and Stress scale- 21 items (DASS-21)

Socio- demographic and clinical variables:

To assess the baseline data. It consists of total 26 items such as Age, Religion, Marital status, Education, Type of family, Occupation, Birth center, Family income, Type of birth, episiotomy, nature of cesarean, time of delivery, duration of labour, family history of psychiatric illness, support person during delivery, illness during pregnancy, preterm labor, perinatal loss, domestic violence, unplanned pregnancy, substance use during pregnancy, feeling regarding childbirth.

Scale for measuring maternal satisfaction in normal birth (SMMS- normal birth):

To measure maternal satisfaction with birth to evaluate women's experiences in labor and the early postpartum period. This questionnaire evaluates satisfaction with the care you received during labor and birth as well as your hospital stay after birth. It consists of 43 items and 10 subscales. The authors of the Scale for Measuring Maternal Satisfaction in Normal Birth (SMMS-normal birth) are Ilkay Gungor and Nezihe Kizilkaya Beji. The scale was developed and psychometrically tested as part of a study published in Midwifery in 2012.

Depression, Anxiety and Stress scale- 21 items (DASS-21):

To assess the anger, depression and stress among working women. DASS-21 is a set of three self-report scales designed to measure the emotional state of depression, anxiety and stress. Each of the three DASS-21 scales contain 7 items divided into subscales with similar content. DASS is a valid and reliable tool having Cronbach internal consistency of 0. 89.34 . The Depression Anxiety Stress Scale-21 (DASS-21) was developed by S.H. and P.F. Lovibond in 1995. permission was obtained from the concerned authorities. Sample were draw from Departments of obstetrics and gynaecology, QMH, KGMU, Lucknow. Primiparous Postnatal mothers were selected according to the inclusion and exclusion criteria of the study.

Researcher introduced herself and explained the purpose of the study. Informed consent was obtained from the women before initiating study. Almost 30 minutes were provided for each and every sample to carry out the adequate data collection procedure. After that patient were assessed for standardized tools and data were obtained for analysis. Researcher was with the participant throughout the study. The primary investigator had done all the assessment in order to avoid assessment biases. Validated tools were used. Sample size was calculated 102, so screening of the patients was done until the desired sample.

Data Analysis:

The collected data were code and entered into master data sheet which was tabulated using computer software. Statistical analysis was done by using Statistical package for the social Sciences (SPSS, version 16) according to the objectives of the study. Both descriptive and inferential statistics was used to analyze the data. Descriptive statistics was used to calculate mean, standard deviation, range and frequency of socio-demographic and clinical variables. Inferential statistics was used to calculate ANOVA test for identifying the association between research variables with selected demographical variables and clinical variables, Karl Pearson's Correlation Coefficient was used to identify the association between mode of delivery and maternal satisfaction, anxiety, stress and depression in primiparous postnatal mothers.

III. Results

The age distribution of mothers showed that 10.8% were below 20 years, 30.4% were between 21-25 years, 29.4% were between 26-30 years, and 29.4% were above 31 years. 59.8% of the mothers were Hindu, while 40.2% were Muslim. There were no participants from Christian or other religions. 58.8% of the participants were from rural areas, and 41.2% were from urban- areas. Among the participants, 19.6% were illiterate, 19.6% had primary education, 30.4% had secondary education, and 30.4% had graduation or higher education. 59.8% of the participants were from nuclear families, and 40.2% were from joint families. 30.4% of the mothers were housewives, 9.8% had government jobs, 50% were in business or private jobs, and 9.8% were laborers. 9.8% of the families had an income below ₹15,000, 51% had an income between ₹15,000-₹50,000, and 39.2% had an income between ₹50,000-₹1,00,000. 51% of the mothers delivered in booked wards, while 49% delivered in unbooked wards. **(Table 1)** In present clinical variables, the data set includes 30.4% had normal deliveries, 20.6% had vaginal operative deliveries and 49% had caesarean sections, 41.2% had episiotomies, while 9.8% did not. 9.8% had elective caesareans, and 39.2% had emergency caesareans. Deliveries were spread across different times, with 19.6% between 6 AM and 12 noon, 9.8% between 12 noon and 6 PM, 30.4% between 6 PM and 12 midnight, and 40.2% between 12 midnight and 6 AM. 39.2% had no labor, 9.8% had labor for less than 6 hours, 30.4%had labor between 6- 12 hours, and 20.6% had labor for more than 12 hours. 9.8% had a family history of psychiatric illness. 79.4% had a support person present during delivery, while20.6% did not. 19.6% had an illness during pregnancy.

Both conditions were experienced by 9.8% of the participants. All babies were aged between 0-7 days. 19.6% reported a history of domestic violence. 9.8% reported their pregnancies as unplanned or unwanted. 20.6% used alcohol, and 79.4% smoked. 80.4% had a positive feeling, while 19.6% had a negative feeling. 30.4% were married within 1 year, 50% between 1-2 years,and 9.8% for both 2-3 years and more than 3 years. 40.2% received explanations about childbirth during the antenatal period. **(Table 2).** Depression: 90.2% of mothers had normal depression levels, and 9.8% had mild depression. Anxiety: 50% had normal anxiety levels, and 50% had moderate anxiety. Stress: 90.2% had normal stress levels, and 9.8% had mild stress. **(Table 3).** Satisfaction level: All mothers reported high satisfaction, with a mean score of 176 ± 7.269. The score ranged from 158 to 184.**(Table 4).** The mode of delivery significantly impacted maternal depression, anxiety, and stress. Mothers who underwent caesarean sections reported higher levels of depression, anxiety, and stress compared to those who had normal or vaginal operative deliveries. For depression, 40 mothers with caesarean sections had normal levels, and 10 had mild depression (F value = 291.87, P value < 0.001). For anxiety, 50 mothers with caesarean sections experienced moderate anxiety (F value = 778.33, P value < 0.001). For stress, 40 mothers with caesarean sections had normal stress levels, and 10 had mild stress (F value = 778.33, P value < 0.001). **(Table 5).** Maternal satisfaction levels varied significantly based on the mode of delivery. All mothers reported high satisfaction, but the levels were higher for normal and caesarean deliveries compared to vaginal operative deliveries. For instance, 31 mothers with normal deliveries and 50 with caesarean sections reported high satisfaction, while 21 with vaginal operative deliveries also reported high satisfaction (F value = 20.187, P value < 0.001). Multiple comparisons showed significant differences between normal and vaginal operative deliveries (Mean Difference = 10.04, P value = 0.001, 95% CI: 6.57 to 13.51), and between vaginal operative deliveries and caesarean sections (Mean Difference = -9.324, P value = 0.001, 95% CI: -12.517 to -6.131). **(Table 6).**

IV. Discussion

Main finding of this present study highlighted several socio-demographic and clinical variables significantly associated with maternal depression, anxiety, and stress. Razurel found that socio- demographic factors such as maternal education, socio- economic status, and support from partners were significant in moderating the relationship between stress and psychological health outcomes.[11] Their study showed that women with higher satisfaction with social support reported fewer depressive symptoms and lower levels of anxiety, emphasizing the importance of social support in mitigating postnatal psychological distress. The mode of delivery significantly impacts maternal satisfaction, anxiety, stress, and depression in primiparous postnatal

mothers. Normal vaginal deliveries are associated with higher satisfaction and lower levels of psychological distress. Several socio- demographic and clinical variables also play crucial roles in maternal psychological outcomes. In this present study, it was found that the mode of delivery had a significant impact on maternal satisfaction, anxiety, stress, and depression. Specifically, mothers who underwent caesarean sections reported higher levels of depression, anxiety, and stress compared to those who had normal or vaginal operative deliveries.

This finding aligns with Al- Kubaisi who observed that elective caesarean section or instrumentation resulted in lower maternal satisfaction scores than normal delivery and emergency caesarean section.[12] This study also found that satisfaction was inversely related to depression, anxiety, and stress, supporting the present study's findings. The study revealed a significant association between the mode of delivery and maternal psychological outcomes. Mothers who had caesarean sections experienced higher levels of depression, anxiety, and stress compared to those who had normal or vaginal operative deliveries. This finding is supported by Clout and Brown, who found that caesarean delivery was associated with high postpartum depression, anxiety, and stress levels. Their study showed that women who underwent caesarean delivery had higher antenatal stress, anxiety, and depression levels compared to those who had vaginal deliveries.[13] Our study demonstrates a significant association between maternal depression and various socio-demographic factors such as age, marital status, residence, level of education, and occupation. This finding is supported by several other studies across different contexts, which further emphasize the critical role of these variables in influencing maternal mental health. A study by Tse et al. examined the impact of prenatal depressive symptoms on child cognitive outcomes and found that maternal depressive symptoms during pregnancy were associated with lower cognitive performance in children, which may reflect the broader clinical and environmental stressors these mothers face.[14]

V. Limitations Of Study

One of the limitations of the study was that purposive sampling technique was employed. Moreover, the study was conducted in a single hospital, which may not represent the experiences of mothers in different geographic or healthcare settings. The study did not track long-term psychological outcomes, limiting understanding of how delivery method impacts mothers beyond the immediate postpartum period. Other limitation was not extensively explore how different socioeconomic factors may interact with delivery methods to influence maternal mental health.

VI. Conclusion

Normal vaginal deliveries were associated with higher satisfaction and lower levels of psychological distress. The presence of support persons during delivery and prior planning also contributed to better maternal outcomes. These findings highlight the need for healthcare providers to consider the psychological impacts of delivery methods and to support mothers through the birthing process to improve maternal health outcomes. By addressing the psychological needs of mothers, particularly those undergoing emergency caesarean sections, healthcare systems can improve overall maternal well- being and reduce the incidence of postpartum psychological issues.

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Table 1: Demographic Variables (N-102)

Variables	Number(n)	Percentage(%)
Age of mother		
<20 years	11	10.8
21 -25 years	31	30.4
26 -30 years	30	29.4
>31 years	30	29.4
Religion		
Hindu	61	59.8
Muslim	41	40.2
Residence		
Rural	60	58.8
Urban	42	41.2
Educational status		
Illiterate	20	19.6
Primary	20	19.6
Secondary	31	30.4
Graduationand above	31	30.4
Type of family		
Nuclear	61	59.8
Joint	41	40.2
Occupation ofthe mother		
House wife	31	30.4
Government job	10	9.8
Business / Private job	51	50.0
Labourer	10	9.8
Family income		
Below 15000	10	9.8
15000 - 50000	52	51.0
50000 – 1 lakh	40	39.2
Birth centre		
Booked ward*	52	51.0
Unbooked ward**	50	49.0

*Bookedward: to arrangeor have bed in hospitalfor one's future use

**Unbooked ward: not reserved any bed in hospital

Table:2 Clinical Variables (N-102)

Clinical variables	Number(n)	Percentage (%)
Type of birth		
Normal	31	30.4
VaginalOperative	21	20.6

Caesarean section	50	49.0
Episiotomy		
Yes	42	41.2
No	10	9.8
Nature of Caesarean		
Elective	10	9.8
Emergency	40	39.2
Time of Delivery		
6 – 12 noon	20	19.6
12 noon – 6 pm	10	9.8
6 pm – 12 am	31	30.4
12 am – 6 am	41	40.2
Duration of labour		
No labour	40	39.2
Less than 6 hours	10	9.8
6 – 12 hours	31	30.4
More than 12 hours	21	20.6
Family history of psychiatric illness		
Yes	10	9.8
No	92	90.2
Support person present during delivery		
Yes	81	79.4
No	21	20.6
Illness during pregnancy		
Yes	20	19.6
No	82	80.4
Pre term labour		
Yes	10	9.8
No	92	90.2
Perinatal loss		
Yes	10	9.8
No	92	90.2
Age of the baby		
0 – 7 days	102	100.0
Domestic violence / history of abuse		
Yes	20	19.6
No	82	80.4
Unplanned / Unwanted pregnancy		
Yes	10	9.8
No	92	90.2
Substance used		
Alcohol	21	20.6
Smoking	81	79.4
Feeling regarding child birth		
Positive	82	80.4
Negative	20	19.6
Duration of marriage		
Within 1 year	31	30.4
1 – 2 years	51	50.0
2 -3 years	10	9.8
More than 3 years	10	9.8
During antenatal period, did anyone explained about process of childbirth?		
Yes	41	40.2
No	41	40.2
Peer's say that painful process	10	9.8
Peer's say that Comfortable process	10	9.8
Any recreational activity during pregnancy?		
Walking	11	10.8
Meditation	10	9.8

Others, specify	10	9.8
None	71	69.6

Table:3 Level Of Depression, Anxiety And Stress (Dass – 21) Among Primiparous(N-102)

POSTNATAL MOTHERS (N=102)						
Categories	**Depression**			**Anxiety**	**Stress**	
	f	%	f	%	f	%
Normal	92	90.2	51	50.0	92	90.2
Mild	10	9.8	0	0.0	10	9.8
Moderate	0	0.0	51	50.0	0	0.0

Table 4: Level Of Maternal Satisfaction (N-102)

Level of maternal satisfaction	Scoring criteria	Frequency{n }	Percentage(%)
High satisfaction	Morethan 150.5	102	100.0

Table 5: Effect Of Mode Of Delivery On Maternal Depression, Anxiety And Stress (N-102)

Level of Depression

Mode of delivery	Normal	Mild	F value	P value	Result
Normal	31	0			
Vaginal Operative	21	0	291.87	<0.001	S
Caesarean section	0	50			

Level of anxiety

	Normal	Moderate			
Normal	31	0			
Vaginal Operative	21	0	778.33	<0.001	S
Caesarean section	40	10			
Level of Stress					
	Normal	**Mild**			
Normal	31	0			
Vaginal Operative	21	0	778.33	<0.001	S
Caesarean section	40	10			

Table 6: Effect Of Mode Of Mode Of Delivery On Maternal Satisfaction (N=102)

Level of maternal satisfaction		F value	P value	Result	Low	High
Mode of delivery	Normal	0	31			
	Vaginal Operative	0	21	20.187	<0.001	S
	Caesarean section	0	50			
	Total	0	102			

S = P value significant at 0.05 levelofsignificance