

# A Descriptive Study to Assess the Sleep, Mood and Cognitive Functions of Mothers during Immediate and Late Postpartum Period in Holy Cross Hospital, Ambikapur, Chhattisgarh

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**Abstract:** *The study examines the sleep, mood, and cognitive functions of postnatal mothers during immediate and late postpartum periods at Holy Cross Hospital Ambikapur. Using a non - experimental quantitative approach and purposive sampling, data from 30 mothers were analysed. Structured questionnaires assessed these functions, revealing significant improvements in mood and cognitive function, while sleep showed varying disturbances. Statistical tests demonstrated notable differences between the two periods, emphasizing the need for targeted interventions to enhance maternal health". It was conducted by Jiji. P. J at Holy Cross Hospital, Ambikapur, Chhattisgarh in partial fulfilment of the requirement for the degree of PHD Nursing Scholar from Malwanchal University, Indore. The objective of the study was to assess the sleep, mood, and cognitive function of post - partum mothers during the immediate and late postpartum periods, to determine the relationship among the variable of sleep mood cognitive function of postpartum mothers during immediate and late postpartum period, to find out the association of sleep, mood and cognitive function with selected demographic variables and to compare the sleep mood cognitive function of postpartum mothers during immediate and late period. The Research approach used in this study is non - experimental quantitative approach, purposive sampling technique was used to select the sample. The sample size comprised of 30 postnatal mothers in Holy Cross Hospital, at Ambikapur. Data was collected by using structured questionnaire for assessing the sleep, mood, and cognitive functions. Analysis was done by using descriptive and inferential statistics. The findings revealed that there was a significant difference between sleep, mood and cognitive functions during immediate and late postpartum period, where sleep pattern during immediate period scores reports the maximum number of postnatal mothers 73.33% had mild sleep disturbance and 26.66% had moderate sleep disturbance whereas sleeping patten scores during late period reports the maximum number of postnatal mothers 76.66% had mild sleep disturbance and 23.33% had normal sleeping pattern. Mood assessment scores during immediate period reports the maximum number of postnatal mothers 90% had normal mood pattern and 10% had mild impairment in mood pattern whereas sleep pattern scores during late period reports the maximum number of postnatal mothers 96.66% had normal mood pattern and 3.33% had mild impairment in mood pattern. Cognitive function assessment score during immediate period reports the maximum number of postnatal mothers 60% had mild cognitive impairment and 40 % had normal cognitive function whereas cognitive function scores during late period reports the maximum number of postnatal mothers 76.66% had normal cognitive function and 23.33% had mild impairment in cognitive function. There was no significant of the sleep, mood and cognitive functions during immediate period scores with the selected demographic variables as calculated by Chi - square test.*

**Keywords:** Postnatal mothers, sleep patterns, cognitive function, maternal mood postpartum health

## 1. Introduction: Background of the study

Childbirth marks remarkable changes in a woman's life. Mother feels immediate relief of pain and tremendous sense of peace and excitement, soon after the birth. The physical of labor as well as the excitement brings fatigue. Providing adequate rest and promoting sleep during postnatal period are essential for improving cognitive function and prevent mood disorders.

Women experience dramatic changes during the postpartum period involving not only hormones and physiology, but also changes in lifestyle, sleep patterns, responsibilities, and interpersonal relationship. All of these changes can influence sleep patterns and sleep quality. Indeed, new mothers generally experience sleep disruptions for up to 1 year or more, of particular concern are postpartum depression and psychosis, which may not reach peak intensity until 3 - 5 months after delivery. These conditions should be treated aggressively but cautiously, and in consultation with a

specialist who is familiar with these conditions and their treatment

An intellectual process by which one becomes aware of, perceives, or comprehends ideas. It involves all aspects of perception, thinking, reasoning, and remembering. Cognitive function refers to a person's ability to process thoughts, Cognition primarily refers to things like memory, the ability to learn new information, speech and reading comprehension. In most healthy individuals the brain is capable of learning new skill in each of these areas, especially in early childhood, and of developing personal and individual thoughts about the world. Factors such as aging and disease may affect cognitive function over time resulting in issues like memory loss and trouble of the right words while speaking or writing.

Humans are generally equipped with a capacity for cognitive function at birth, meaning that each person is capable of learning or remembering a certain amount of information. This is generally measured using tests like the intelligence quotient (IQ) test, although these can be inaccurate at fully measuring a person's cognitive abilities. Infanthood and early

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childhood are the periods of time when most people are best able to absorb and use new information, with most children learning new words, concepts, and ways to express oneself on a weekly or even daily basis. Capacity to learn slows down little by little as one gets older, but overall cognitive function should not deplete on a large scale in healthy individuals. (D Nagarajappa 2008)

Cognition is a faculty for the processing of information, applying knowledge, and changing preferences. Cognition, or cognitive processes, can be natural or artificial, conscious or unconscious. These processes are analyzed from different perspectives within different contexts, notably in the fields of linguistics, anesthesia, neurology and psychiatry, psychology, philosophy, anthropology, systemic. Within psychology or philosophy, the concept of cognition is closely related to abstract concepts such as mind, intelligence. It encompasses the mental functions mental processes (thoughts), and states of intelligent entities (humans, collaborative groups, human organizations, and artificial intelligences. The three categories commonly used in classify alterations in postpartum mood are: 1) postpartum blues, 2) postpartum depression, and 3) postpartum psychosis. (Hopkins, Marcus, & Campbell, 1984).

## 2. Need for the study

Maternal and child health care are well advanced in developed countries. Scientific advancement and technology have reduced the infant and maternal mortality rate.

Dawn. C. S (2009). reports that the caesarean section rate increases each day in India. In developed countries it is 6 - 25% in developing countries like India it is 15 - 25% in city hospitals

The puerperium is a period of psychological stress for many women. The mother is now forced with the need to provide primary care for helpless and demanding client. Transient and chronic fatigue is a common problem. Fatigue lowers the psychological reserve and leads to irritability.

Rubin (1975), delineated several stages and phases that new mother goes through during recovery These include taking in, taking hold and let go.

The first days after delivery - even up to 10 or 14 days - could be considered a period of 'normal' crisis and disequilibrium, especially for the first time mother. (Rubin 1977). It is a time of transition, readjustment reappraisal of roles, added responsibility, excitement, fatigue and recovery from pregnancy labor and delivery.

It was observed that during puerperium the mothers expressed more psychological problem than during the rest of the period. Therefore, the midwives working with the clients have a high responsibility to take care of the emotional aspect of mothers. Psychological aspects of mothers play an important role in maintaining good health during postpartum period. Mothers with psychological problems have various changes or bad effects on health of herself and her baby.

The investigator has personally come across mothers expressing more psychological problems during puerperium than during the rest of the period. This personal experience has been a strong motivating factor in pursuing this study.

So, the investigator felt the need to explore in this area by assessing the sleep, mood and cognitive functions of postnatal mothers which will help us to find out preventive measures and to reduce the problems experienced by the women and this will add on the body of knowledge.

### Objectives

- To assess the sleep mood and cognitive function of post - partum mothers during immediate and late postpartum period.
- To determine the relationship among the variable of sleep, mood, and cognitive function in immediate and late postpartum period.
- To find out the association of sleep, mood and cognitive function with selected demographic variables.
- To compare the sleep mood cognitive function of postpartum mothers during immediate and late period.

### Assumption

- There will be difference among postnatal mothers during immediate and late postpartum period on the basis of sleep, mood and cognitive functions.
- There will be significant difference between an association of sleep, mood and cognitive functions of postnatal mothers with demographic variable

## 3. Methods

The researcher's critique strategy to assess the sleep, mood and cognitive functions of mothers during immediate and late postpartum period in Holy Cross Hospital Ambikapur. As its research approach, this study employed a non - experimental quantitative research strategy. The current study used a descriptive research design. The research was conducted at Holy Cross Hospital Ambikapur, Chattisgarh. The setting was entirely dependent on the sample's availability and feasibility. The population consists of all Postnatal mothers enrolled in Holy Cross Hospital Ambikapur. The study included 30 postnatal mothers as participants. The current study's sampling method was purposive sampling strategy. Postnatal mothers eager to participate in the study, Postnatal mothers from a selected hospital in Ambikapur, Chattisgarh, who could read, write, and interpret English and Hindi, Postnatal mothers who just delivered as Normal Vaginal Delivery were included in the study.

### Instruments:

Questionnaires were constructed based on the objectives of the study. The tool made for data collection consists of two sections.

- Section A – Socio demographic data of mother.
- Section B – Questionnaire on sleep, mood and cognitive function of postnatal mothers during postnatal periods.

Both descriptive and inferential statistics were used.

**Descriptive statistics: -**

- Frequency and percentage distribution was used to describe the demographic variables.
- Frequency and percentage distribution was used to assess the sleep mood and cognitive function of postnatal mothers.

**Inferential statistics: -**

- ‘t’ test was used to compare the sleep mood and cognitive functions of postnatal mothers during immediate and late postpartum period.
- Chi square test will be used to analyze the association of sleep mood and cognitive functions of postnatal mothers with selected demographic variables.

**Data Collection:**

The researcher obtained permission from Holy Cross Hospital Ambikapur, Chattisgarh, Recognized Dissertation Committee before collecting data. A purposive sampling method was used to select 30 postnatal mothers who delivered recently as Normal Vaginal Delivery. Informed consent was sought before enrolling patients, and privacy, dignity, and respect for religious and cultural views were ensured throughout the data

collection process. A study involved respondents who were given a demographic profile and questionnaire on mood, sleep and cognitive function using frequency, percentage, mean, standard deviation. First assessment of sleep, mood and cognitive function of postnatal mothers were done during the immediate period then after 5 days again assessment is done about sleep, mood and cognitive functions of postnatal mothers during late postpartum period. Data analysis was done using descriptive and inferential statistics. No problems were faced during the study.

**Ethical Consideration**

The research committee has approved the research problem and objectives stated for the present study. Explanation was given regarding the purpose of the study. Confidentiality was ensured. Permission from higher authority was obtained. Any individual participant has the right to leave from the study at any time without assigning any reason there of the investigator.

**4. Results**

**Table 1 shows “Demographic variables, Sample Characteristics, Frequency, Percentage**

S. No	Demographic variable	Sample characteristics	Frequency (F)	Percentage (%)
1.	Age in years	21 - 25 years	19	63.33
		26 - 30 years	10	33.33
		31 - 35 years	1	3.33
		36 and above	0	0
2.	Religion	Christian	4	13.33
		Hindu	22	73.33
		Muslim	4	13.33
		Other	0	0
3.	Education	Illiterate	4	13.33
		Higher secondary	17	56.66
		Graduation	6	20
		Others	3	10 - 0
4.	Occupation	House wife	26	86.66
		Private job	1	3.33
		Government job	3	10
5.	Place	Urban	11	36.66
		Rural	19	63.33
6.	Monthly income	<5000	16	53.33
		5001 - 10000	3	10
		10001 - 15000	3	10
		>15000	8	26.66
7.	Caste	ST	5	16.66
		SC	10	33.33
		OBC	9	30
		General	5	16.66
8.	Education related to sleep, mood and cognitive function.	YES	6	20
		NO	24	80

1) Assessing the sleep, mood and cognitive function of the postnatal mothers during immediate and late postpartum period.

Table 2 shows the mean percentage, standard deviation of sleep during immediate and late postpartum period was 51.25% in the immediate and 36.66% in the late postpartum period.

Scores	Maximum possible scores	Minimum possible scores	Maximum Scores obtained	Mean	Standard deviation	Mean percentage
Immediate	240	0	123	4.1	0.746	51.25
Late	240	0	88	2.93	0.628	36.66

Table 3 shows the mean, mean percentage, standard deviation of mood during immediate and late postpartum period was 78.22% in the immediate and 84.77% in the late postpartum period.

Scores	Maximum possible scores	Minimum possible scores	Maximum Scores obtained	Mean	Standard deviation	Mean percentage
Immediate	900	0	704	23.46	2.248	78.22
Late	900	0	763	25.43	2.155	84.77

Table 4 shows the mean, mean percentage, standard deviation of cognitive function during immediate and late postpartum period was 86.46% in the immediate 84.77% and 90.4% in the late postpartum periods.

Scores	Maximum possible scores	Minimum possible scores	Maximum Scores obtained	Mean	Standard deviation	Mean percentage
Immediate	1500	0	1297	43.23	3.389	86.46
Late	1500	0	1356	45.20	2.638	90.4

**2) Association of sleep, mood and cognitive function of the postnatal mothers with selected demographic variables**

- a) The association between sleep during immediate postpartum period with selected socio demographic variables. This reveals that there is no association between socio demographic variables such as age, religion, occupation, caste, monthly income, residence and exposure to education related to sleep.
- b) The association between mood during immediate postpartum period with selected socio demographic variables. This reveals that there is no association between socio demographic variables such as age, religion, occupation, caste, monthly income, residence

and exposure to education related to mood. But there is association between education.

- c) The association between cognitive function during immediate postpartum period with socio demographic variables. This reveals that there is no association between socio demographic variables such as age, religion, occupation, caste, monthly income, residence and exposure to education related to cognitive function. But there is association between education.

**3) Compare the sleep, mood and cognitive function of the postnatal mothers during immediate and late postpartum period.**

Table 5 shows that 't' test computed between sleep during immediate and late postpartum period score was statistically significant at 0.05 level of significance. The calculated 't' value is (9.4) is greater than the table value (t<sub>29</sub>) =2.05. This calculation shows that sleep of postnatal mothers during late period was improved, N - 30

Sleep Score	Mean	Mean Difference	Standard Error	Mean Percentage	Standard Deviation	't' Value	Level of Significance
Immediate	4.1	1.17	0.964	51.25	0.746	9.4	Significant
Late	2.93			36.66	0.628		

Table 6 shows that 't' test computed between mood during immediate and late postpartum period score was statistically significant at 0, 05 level of significance. The calculated 't' value is (7.82) is greater than the table value (t<sub>29</sub>) =2.05. This calculation shows that mood of postnatal mothers during late period was improved, N - 30

Sleep Score	Mean	Mean Difference	Standard Error	Mean Percentage	Standard Deviation	't' Value	Level of Significance
Immediate	23.46	2.003	2.681	78.22	3.248	7.82	Significant
Late	25.43			84.77	2.115		

Table 7 shows that 't' test computed between cognitive function during immediate and late postpartum period score was statistically significant at 0, 05 level of significance. The calculated 't' value is (6.78) is greater than the table value (t<sub>29</sub>) =2.05. This calculation shows that cognitive function of postnatal mothers during late period was improved, N - 30

Sleep Score	Mean	Mean Difference	Standard Error	Mean Percentage	Standard Deviation	't' Value	Level of Significance
Immediate	43.23	1.97	3.181	86.48	3.389	6.78	Significant
Late	45.2			90.4	2.638		

**5. Discussion**

**1) Description of sample characteristic of post - natal mothers**

Distribution of the post - natal mothers according to the age shows that that 63.33% of the postnatal mothers were in age group of 21 - 25 and 33.33% were in age group of 26 - 30years, 3.33% were in age group of 31 - 35 years and 0% were in the age group of above 35 years.

Distribution of post - natal mothers according to the religion shows that 13.33% of the postnatal mothers were Christian, 73.33% were Hindu.13.33% were Muslim and other is 0%.

Distribution of post - natal mothers according to the education shows that 13.33% of the postnatal mothers were illiterate, 56.66% were higher secondary 20% were completed their graduation and other are 10% that finished their post - graduation.

Distribution of the post - natal mothers according to the occupation shows that 86.66% of the postnatal mothers were housewife, 3.33% were doing private job, 10% were doing Govt. job.

With regards to the residence, it was noticed 36.66% of the postnatal mothers were from urban residence, 63.33% were from rural residence.

With regards to the income, it was noticed that 53.33% of the postnatal mother were having monthly income less than 5000/-, 10% were having monthly income between 5000/- and 10,000/-, 10% were having monthly income between 10,000/- and 15,000/-, & 2.66% were having monthly income 15,000/- and more.

In relation to the caste, it was noticed that 16.66% of the postnatal mothers were ST, 33.33% were SC, 30% were OBC and 16.6% were general.

The Findings related to previous exposure of education related to the sleep, mood and cognitive function of the postnatal mothers in table 1 and figure 8 shows that 20% of the postnatal mothers were they have got some education related to the sleep, mood and cognitive function, and 80% have not got any education related to the sleep, mood and cognitive function

### 2) Assessing the sleep, mood and cognitive function of the postnatal mother during immediate and late postpartum period.

The data shows that the mean percentage of the sleep was 51.25% during immediate postnatal period and the mean percentage of the sleep was 36.6% during the late postpartum period.

The data shows that, the mean percentage for mood was 78.22% during the immediate postnatal periods and mean percentage of the mood was 84.77% during the late postpartum period.

The data shows that, the mean percentage of the cognitive function of the was 86.46% during the immediate postnatal mothers, and mean percentage of the cognitive function was 90.4% during the late postnatal periods.

The data shows that, the percentage distribution of the sleep, in that 23.33% were in normal and 76.66% were in mild, and 0% were in moderate and 0% were in severe sleep disturbance.

The data shows that, the percentage distribution of the mood, in that 96.66% were in normal and 3.33% were in mild and 0% were in severe mood disturbance.

The data shows that, the percentage distribution of the cognitive, in that 76.66% were in normal and 23.33% were in mild and 0% was in moderate and 05% was in severe cognitive impairment.

### 3) Association of sleep, mood and cognitive function of postnatal mother with selected demographic variables.

The association between sleep patterns of the postnatal mothers during immediate period with sociodemographic variables. The table reveals that there is no association between the socio - demographic variables such as age, religion, residence, education, monthly income, occupation, caste and education related to sleep, mood and cognitive function

The association of the mood of the postnatal mothers during immediate period with socio - demographic variables. The table reveals that there is no association between the socio -

demographic variables such as age, religion and residence, occupation, and educational related to the sleep, mood and cognitive function. And there is association between the educations, monthly income and caste.

The association of the cognitive function of the postnatal mothers during immediate period with socio - demographic variables. The table reveals that there is no association between the socio - demographic variables such as age, religion, residence, monthly income, occupation, caste and education related to sleep, mood and cognitive function, but there is association between educations.

### 4) Compare the sleep, mod and cognitive function of the postnatal mothers during immediate and late postpartum period.

Table 11 describes the association between sleep, mood and cognitive function during immediate post - partum period with socio demographic variables. The table reveals that there is no association between sociodemographic variables such as age, religion, occupation, caste, monthly income, residence and exposure to education related to sleep, mood, cognitive function. But there is association between educations.

## 6. Conclusion

Thus, the objectives made by researcher has been achieved as follows: -

The study highlights significant variations in sleep, mood, and cognitive functions during the immediate and late postpartum periods. The findings underscore the need for targeted interventions to support maternal health during this critical time.

## 7. Limitation

- Random selection was not done
- Time span of the study was limited.
- Study was done on limited sample.
- Finding of the study could not be generalized.

### Financial Support & Sponsorship:

Nil.

### Conflict of Interest

There are no conflicts of interest.

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