

The Relationship between Sleep Quality and Postpartum Depressive Symptoms among Young Mothers

Rajalakshmi C

M.Sc. Counselling Psychology, JAIN (Deemed-to-be University), Bengaluru, Karnataka, India

Corresponding Author Email: [rajalakshmikumaran0383\[at\]gmail.com](mailto:rajalakshmikumaran0383[at]gmail.com)

Abstract: *Postpartum mental health is an important area of concern, as changes in sleep patterns during the early period of motherhood may be associated with emotional well-being. The present study aimed to examine the relationship between sleep quality and postpartum depressive symptoms among young mothers. A quantitative correlational research design was adopted. The study included 50 young mothers aged 23–35 years. Data were collected using the Pittsburgh Sleep Quality Index (PSQI) to assess sleep quality and the Edinburgh Postnatal Depression Scale (EPDS) to assess postpartum depressive symptoms. Descriptive statistics and Pearson's product-moment correlation were used to analyse the data. The findings indicated a weak positive relationship between PSQI and EPDS scores ($r = 0.269$). However, the relationship was not statistically significant ($p = 0.059$). The findings suggest that although an association was observed between the two variables, the present study did not establish a statistically significant relationship. The findings highlight the importance of continued attention to sleep and psychological well-being among young mothers and provide a basis for further research using larger samples and broader populations.*

Keywords: Sleep quality, postpartum depressive symptoms, young mothers, postpartum mental health, PSQI, EPDS

1. Introduction

Sleep is a fundamental biological process essential for physical health, cognitive functioning, emotional regulation, and overall well-being. Adequate sleep quantity and quality support physiological restoration, cognitive functioning, memory, and emotional processing, while persistent sleep disturbances have been associated with adverse psychological outcomes, including anxiety and depressive symptoms (Kryger et al., 2017; Medic et al., 2017).

The relationship between sleep and psychological well-being is particularly relevant during major life transitions such as the postpartum period. New mothers experience substantial physical, psychological, and social changes, while infant feeding, caregiving responsibilities, and frequent night-time awakenings may result in fragmented or inadequate sleep. Persistent sleep disruption may affect emotional regulation and coping with the demands of motherhood and may be associated with postpartum depressive symptoms (Lawson et al., 2015; Okun, 2020).

Postpartum depressive symptoms are an important maternal mental health concern and may affect mothers' emotional well-being, daily functioning, and adjustment to motherhood. The relationship between sleep and mental health may also be bidirectional, as sleep disturbances may contribute to psychological difficulties while depressive symptoms may further disrupt sleep. Therefore, examining maternal sleep quality alongside postpartum depressive symptoms may provide useful information for understanding maternal psychological well-being.

The present study examined the relationship between sleep quality and postpartum depressive symptoms among young mothers. Sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI), while postpartum depressive

symptoms were assessed using the Edinburgh Postnatal Depression Scale (EPDS).

2. Research Gap and Rationale

Although previous research has identified an association between sleep disturbances and postpartum depressive symptoms, further examination of this relationship among young mothers in the Indian context is warranted. Maternal sleep and psychological well-being may be influenced by sociocultural factors such as family structure, caregiving responsibilities, social support, traditional postpartum practices, and access to mental healthcare.

Previous research has also examined postpartum depression and sleep disturbances in relation to prevalence and associated risk factors. However, examining the specific relationship between maternal sleep quality and postpartum depressive symptoms using standardized measures may contribute to a clearer understanding of their association. Sleep difficulties during the postpartum period may sometimes be considered an expected consequence of infant care and may therefore receive insufficient attention in maternal mental health assessment.

Given the importance of maternal mental health and the potential relevance of sleep quality to psychological well-being, the present study examined the relationship between sleep quality and postpartum depressive symptoms among young mothers in an Indian clinical setting. The findings may provide useful preliminary information for psychologists, counsellors, nurses, social workers, and other professionals involved in maternal healthcare.

3. Methodology

3.1 Research Design

A quantitative, non-experimental, cross-sectional descriptive correlational research design was used to examine the relationship between sleep quality and postpartum depressive symptoms among young mothers. Data were collected at a single point in time using standardized self-report measures.

3.2 Research Setting and Participants

The study was conducted in selected maternity hospitals, obstetrics and gynaecology clinics, and maternal healthcare centres in Bengaluru, Karnataka. The study included **50 young mothers aged 23–35 years** who had delivered a live baby within the previous 12 months and met the eligibility criteria. Participants were selected using **purposive sampling**.

3.3 Objectives

The study aimed to:

- Assess sleep quality among young mothers.
- Assess postpartum depressive symptoms among young mothers.
- Examine the relationship between sleep quality and postpartum depressive symptoms among young mothers.

3.4 Research Hypothesis

H₁: There is a significant relationship between sleep quality and postpartum depressive symptoms among young mothers.

3.5 Inclusion and Exclusion Criteria

Participants were mothers aged 23–35 years who were within 12 months postpartum, had a living infant, were able to read and understand English, and voluntarily provided informed consent.

Mothers with a previously diagnosed severe psychiatric disorder, a diagnosed sleep disorder that could independently affect sleep quality, or a severe medical or psychiatric condition that could substantially influence sleep or depressive symptoms were excluded. Participants who were unable to complete the questionnaires or did not provide informed consent were also excluded.

3.6 Variables and Operational Definitions

The primary variables examined were **sleep quality** and **postpartum depressive symptoms**. Sleep quality referred to participants' subjective sleep characteristics, including sleep duration, sleep latency, sleep disturbances, sleep efficiency, and daytime dysfunction, as assessed using the Pittsburgh Sleep Quality Index (PSQI). Postpartum depressive symptoms referred to depressive symptoms experienced during the postpartum period, as assessed using the Edinburgh Postnatal Depression Scale (EPDS).

3.7 Research Instruments

A researcher-prepared demographic information schedule was used to collect relevant participant characteristics, including age, educational qualification, occupation, family type, marital status, number of children, duration since delivery, type of delivery, infant feeding pattern, and monthly family income.

Pittsburgh Sleep Quality Index (PSQI): The PSQI, developed by Buysse et al. (1989), is a self-report measure of subjective sleep quality and sleep disturbances over a one-month period. It consists of 19 self-rated items grouped into seven component scores that produce a global score. Higher global scores indicate poorer sleep quality.

Edinburgh Postnatal Depression Scale (EPDS): The EPDS, developed by Cox, Holden, and Sagovsky (1987), is a 10-item self-report screening instrument used to assess depressive symptoms during the postnatal period. Higher scores indicate greater depressive symptom levels.

3.8 Data Collection Procedure

Following approval from the research guide and obtaining the required institutional/site permissions, eligible participants were informed about the purpose and procedure of the study. Written informed consent was obtained before data collection.

Participants completed the demographic information schedule, PSQI, and EPDS. Confidentiality and anonymity were maintained throughout the data collection process. Completed questionnaires were checked for completeness, coded, and prepared for statistical analysis.

3.9 Ethical Considerations

Participation was voluntary, and informed consent was obtained from all participants. Participants were informed of their right to withdraw from the study without penalty. Confidentiality and anonymity were maintained, and the collected information was used solely for academic and research purposes. Research data were securely maintained and accessed only by the researcher and authorized academic personnel. Appropriate support or referral information was to be provided if a participant experienced significant distress or indicated a need for further psychological assessment.

3.10 Statistical Analysis

Data were analysed using **IBM SPSS Statistics**. Frequencies and percentages were used to describe relevant demographic characteristics. Mean and standard deviation were used to summarize PSQI and EPDS scores. **Pearson's product-moment correlation** was used to examine the direction and strength of the relationship between the PSQI global score and EPDS total score. Statistical significance was assessed at the **0.05 level**.

4. Results

Data from 50 young mothers were analysed using IBM SPSS Statistics. Descriptive statistics, frequency and percentage distributions, and Pearson's product-moment correlation were used to examine the study variables.

Table 1: Descriptive Statistics of the Study Variables (N = 50)

Variable	N	Minimum	Maximum	Mean	Standard Deviation
Age in years	50	23	35	30.16	3.254
Baby's age in months	50	1.00	12.00	7.180	3.0672
PSQI Total	50	3	14	9.16	2.376
EPDS Total	50	3	24	13.04	4.517

Demographic Characteristics

Among the 50 participants, 28 (56%) were graduates and 22 (44%) were postgraduates. Twenty-six participants (52%) were homemakers and 24 (48%) were employed. Twenty-nine participants (58%) belonged to nuclear families and 21 (42%) belonged to joint families.

Regarding mode of delivery, 12 participants (24%) reported vaginal delivery and 38 (76%) reported caesarean delivery. With respect to night-time waking for the baby, 4 participants (8%) reported waking once, 7 (14%) twice, 19 (38%) three times, and 20 (40%) four times per night.

Table 2: Frequency(n) and Percentage (%) - Distribution of Selected Demographic Characteristics (Sample-N = 50)

Characteristic	Category	n	%
Educational qualification	Graduate	28	56
	Postgraduate	22	44
Occupation	Homemaker	26	52
	Employed	24	48
Family type	Nuclear	29	58
	Joint	21	42
Type of delivery	Vaginal	12	24
	Caesarean	38	76
Night-time waking	Once	4	8
	Twice	7	14
	Three times	19	38
	Four times	20	40

Relationship Between Sleep Quality and Postpartum Depressive Symptoms

Pearson's product-moment correlation was conducted to examine the relationship between PSQI total scores and EPDS total scores. A weak positive correlation was observed between the two variables, $r = 0.269$, $p = 0.059$, $N = 50$. Higher PSQI scores, indicating poorer sleep quality, tended to be associated with higher EPDS scores, indicating greater postpartum depressive symptoms.

However, the correlation did not reach conventional statistical significance at the 0.05 level. Thus, the study did not provide sufficient statistical evidence to establish a significant relationship between sleep quality and postpartum depressive symptoms in the present sample.

Descriptive Statistics

The participants ranged in age from 23 to 35 years, with a mean age of 30.16 years ($SD = 3.254$). The age of the infants ranged from 1 to 12 months, with a mean of 7.18 months ($SD = 3.067$).

PSQI total scores ranged from 3 to 14, with a mean score of 9.16 ($SD = 2.376$). EPDS total scores ranged from 3 to 24, with a mean score of 13.04 ($SD = 4.517$).

Table 3: Pearson Correlation Between PSQI Total and EPDS Total Scores

Variables	PSQI Total	EPDS Total
PSQI Total	1	0.269
EPDS Total	0.269	1
p (2-tailed)	—	0.059
N	50	50

Note. PSQI = Pittsburgh Sleep Quality Index; EPDS = Edinburgh Postnatal Depression Scale.

5. Discussion

The present study examined the relationship between sleep quality and postpartum depressive symptoms among 50 young mothers. The findings demonstrated a **weak positive correlation between PSQI and EPDS scores ($r = 0.269$)**, indicating that poorer sleep quality tended to be associated with greater postpartum depressive symptoms.

However, the correlation was **not statistically significant at the 0.05 level ($p = 0.059$)**. Therefore, although a relationship was observed in the present sample, the proposed relationship was not statistically established according to the conventional significance criterion.

The direction of the finding is broadly consistent with previous research indicating that maternal sleep disturbances may be associated with postpartum psychological difficulties. At the same time, the present finding highlights the complexity of postpartum mental health and suggests that multiple biological, psychological, and social factors may contribute to depressive symptoms.

The study provides preliminary evidence from a sample of young mothers in an Indian clinical setting. The findings support continued investigation of maternal sleep quality as one potentially relevant aspect of postpartum psychological well-being, while recognizing that sleep quality alone does not explain postpartum depressive symptoms.

Future research may benefit from larger sample sizes, longitudinal designs, and the inclusion of additional psychosocial variables. Such research could provide a more comprehensive understanding of the factors influencing sleep and psychological well-being during the postpartum period.

6. Conclusion

The present study examined the relationship between sleep quality and postpartum depressive symptoms among 50 young mothers. The findings showed a weak positive association between PSQI and EPDS scores ($r = 0.269$), indicating that poorer sleep quality tended to be associated with greater postpartum depressive symptoms. However, the relationship was not statistically significant at the 0.05 level ($p = 0.059$). Therefore, the present study did not establish a statistically significant relationship between sleep quality and postpartum depressive symptoms. The findings provide preliminary information regarding maternal sleep and postpartum psychological well-being among young mothers in an Indian clinical setting. They also highlight the multifactorial nature of postpartum psychological well-being, in which sleep may be one of several contributing factors.

7. Implications

The findings have implications for counselling psychology and maternal mental health services. Counsellors and healthcare professionals may consider sleep quality, nighttime awakenings, fatigue, and daytime functioning as part of a broader assessment of postpartum mothers. Psychoeducation regarding sleep, stress management, realistic expectations about infant-related sleep disruption, and available family support may also be useful.

Attention to both sleep difficulties and depressive symptoms may support early identification of mothers who require additional psychological or medical support. Where clinically significant depressive symptoms are identified, appropriate professional referral should be considered.

8. Limitations

The study included a relatively sample of 50 participants recruited from a single clinical setting in Bengaluru, which limits the generalizability of the findings. The cross-sectional correlational design does not permit conclusions regarding causality or the direction of the relationship. The study also did not systematically assess other factors that may influence postpartum depressive symptoms, such as social support, anxiety, stressful life events, previous psychological difficulties, or socioeconomic circumstances. In addition, the study relied on self-report measures, and the infants' ages varied from 1 to 12 months, representing different stages of maternal adjustment and sleep patterns.

9. Suggestions for Future Research

Future studies may use larger and more diverse samples recruited from multiple healthcare settings and geographical regions. Longitudinal research could examine changes in maternal sleep quality and postpartum depressive symptoms across different stages of the postpartum period. Further studies may also include psychosocial factors such as social support, anxiety, stress, marital relationship, previous psychological history, socioeconomic status, and parenting-related stress. Research combining subjective sleep

measures with objective measures of sleep may provide additional understanding of maternal sleep and psychological well-being.

References

- [1] Lawson, A., Murphy, K. E., Sloan, E., Uleryk, E., & Dalfen, A. (2015). The relationship between sleep and postpartum mental disorders: A systematic review. *Journal of Affective Disorders*, 176, 65–77. <https://doi.org/10.1016/j.jad.2015.01.017>
- [2] Okun, M. L. (2015). Sleep and postpartum depression. *Current Opinion in Psychiatry*, 28(6), 490–496. <https://doi.org/10.1097/YCO.0000000000000206>
- [3] Okun, M. L., Mancuso, R. A., Hobel, C. J., Schetter, C. D., & Coussons-Read, M. (2018). Poor sleep quality increases symptoms of depression and anxiety in postpartum women. *Journal of Behavioral Medicine*, 41(5), 703–710. <https://doi.org/10.1007/s10865-018-9950-7>
- [4] Maghami, M., Shariatpanahi, S. P., Habibi, D., Heidari-Beni, M., Badihian, N., Hosseini, M., & Kelishadi, R. (2021). Sleep disorders during pregnancy and postpartum depression: A systematic review and meta-analysis. *International Journal of Developmental Neuroscience*, 81(6), 469–478. <https://doi.org/10.1002/jdn.10118>
- [5] Guintivano, J., Manuck, T., & Meltzer-Brody, S. (2018). Predictors of postpartum depression: A comprehensive review of the last decade of evidence. *Clinical Obstetrics and Gynecology*, 61(3), 591–603. <https://doi.org/10.1097/GRF.0000000000000368>
- [6] Meltzer-Brody, S., Howard, L. M., Bergink, V., Vigod, S., Jones, I., Munk-Olsen, T., Honikman, S., & Milgrom, J. (2018). Postpartum psychiatric disorders. *Nature Reviews Disease Primers*, 4, Article 18022. <https://doi.org/10.1038/nrdp.2018.22>
- [7] Gastaldon, C., Solmi, M., Correll, C. U., Barbui, C., & Schoretsanis, G. (2022). Risk factors of postpartum depression and depressive symptoms: Umbrella review of current evidence from systematic reviews and meta-analyses of observational studies. *The British Journal of Psychiatry*, 221(4), 591–602. <https://doi.org/10.1192/bjp.2021.222>
- [8] Khan-Afridi, Z., Ruchat, S.-M., Jones, P. A. T., Ali, M. U., Matenchuk, B. A., Leonard, S., Jantz, A. W. E., Vander Leek, K., Maier, L. E., Osachoff, L., Hayman, M. J., Forte, M., Sivak, A., & Davenport, M. H. (2025). Impact of sleep on postpartum health outcomes: A systematic review and meta-analysis. *British Journal of Sports Medicine*, 59(8), 584–593. <https://doi.org/10.1136/bjsports-2024-109604>
- [9] Sobol, M., Błachnio, A., Meisner, M., Szyszkowska, J., & Jankowski, K. S. (2024). Sleep, circadian activity patterns and postpartum depression: A systematic review and meta-analysis of actigraphy studies. *Journal of Sleep Research*, 33(4), e14116. <https://doi.org/10.1111/jsr.14116>
- [10] Li, H., Li, H., Zhong, J., Wu, Q., Shen, L., Tao, Z., Zhang, H., & Song, S. (2023). Association between sleep disorders during pregnancy and risk of postpartum depression: A systematic review and meta-analysis. *Archives of Women's Mental Health*, 26(2), 259–267. <https://doi.org/10.1007/s00737-023-01295-3>