DOI: https://doi.org/10.53350/pjmhs22166783

ORIGINAL ARTICLE

Association Between Postpartum Depression and Sleep Quality in Pakistani Women in Peshawar, Pakistan

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ABSTRACT

Background: The literature is sparse regarding the link between postpartum females and postpartum depression in low- to middle-income (LMIC) countries. This study examined the association between some self-reported sleeping rhythm alterations (from six weeks to seven months and months after giving birth) and depressive symptoms at seven months amongst women's who were having high risk for depressive symptoms.

Material and Methods: A total of 180 newly delivered mothers who were assigned to the medical facility, took part in this cross-sectional research. To judge the effectiveness of sleeping habits, the "Pittsburg Sleep Quality Index" (PSQI) questionnaire was used. To quantify depressive symptoms, we also employed the "Edinburg Postnatal Depression Questionnaire" which is also known as (EPDS). Moreover, regression analysis was used to find out the association between sleep quality and maternal depression.

Result: In general, sleep - related issues are resolved in six to seven months. Nevertheless, at seven months following the birth, worsening or just modest improvement in sleep issues were linked to more severe depressive symptoms. Regarding the different types of sleep issues, high levels of depressive symptoms were associated with self-reported altered sleep delay, including such "how lengthy it ends up taking to fall asleep during the night," in during the day disturbance in features, including such "difficulties involved in staying up throughout the day," and the level of sleep, such as "qualitative rate and quality of sleep."

Conclusion: Usually, throughout the postpartum period, sleep issues go better. However, the prevalence of depression was high and the poor quality of sleep was identified. In Pakistan, the positive association between depression and poor sleep quality proposes early identification and support for women at high risk of poor quality of sleep. Women should therefore need to be knowledgeable about probable deterioration of sleep patterns and strategies for preventing insomnia disorders before visiting the clinic at six weeks postpartum.

Keywords: postpartum, sleep issues, PSQI, EPDS, Peshawar.

INTRODUCTION

Postpartum depression is related to the several maternal and infant-associated concerns such as bonding of the poor infant child (1), difficulties in newborn babies caring (2), extended behavioral problems for kid (3), for mother to retain increase body weight (4), and for parent's high risk in depression in future (5). Approximately, the challenging given 13-19% experience in mothers for postpartum depression (6). During the pregnancy and postpartum, 31% report depression were identified (7). However, the research criteria determine that one fourth of symptoms of report depression in mothers but don't happen the total criteria for depression (8). During the period of postpartum, sleep is interrupted significantly and also it may significant part of depression development (9). Over 12 months, poor sleep can be continue behind the baby birth (10). By sleep lacking, it can cause effect in tiredness, less capability to active and concentrate, impatience, and the less quality of life, which can lead to a high threat for "postpartum depression" (11).

Different factors incudes socioeconomics, age of maternal, qualification and the infants sex (6), depression history, profession, and the total children were (6) described to be effective in the postpartum depression development. Other potential factors such as sleep patterns and sleep deprivation that can be linked with the postpartum depression (12). Physical, biological and psychosomatic factors that can effect on women sleep and also in newborn with irregular sleep patterns during the periods of postpartum and the postpartum period in women experience high eves of disturbance in sleep, particularly in first three months (8). On the other hand, due to irregular seep and disturbance that can also cause effect on memory, decision making, hormones changes and mood changes (12). Depression and sleep can be associated and it can be mutual. Sleep disorders can be the risk for depression independently. In both cases, neurological or psychological functions disturb by the status of sleep and depression (10). The previous study explained the quality of sleep was associated with postpartum depression (13). To train in psychological distress without such a history, this is a crucial group to monitor the history of depressive disorders in up to three times more women.(14).

In this region, due to the high frequency of depression and dangerous side effects and the limited data on the relationship between sleep quality and depression, we designed to report the imitation of the earlier studies. First, we evaluated the probable link among postpartum changes, self-reported problems in sleep and the symptoms of depression during the periods of postpartum. The second one is to examine the sleep type's problems which are linked with the symptoms of postpartum depression. Finally, we evaluated women who were in high threat of having depression due to postpartum, which has not been discovered to our information earlier.

MATERIALS AND METHODOLOGY

Population and study design: By the cross-sectional research, there was performed on 180 representative samples study distributed women attending "Heath-care centers in Peshawar, Pakistan". We comprised subjects who had delivered and had a live birth in the last three months. Given the past, this investigation excluded newly delivered women who had depression that was recorded on its own and other "Mental disorders." Members were nominated on the basis of random systematic random sampling method. After the selected eligible participants list in health-care center, subjects were organized on the basis of the delivery date. From the list, randomly selected sample and in the frame, recorded each fourth number was designated.

Study instrument and Measure of Sleep: For the measurement of global quality of sleep, (PSQI) (15) was performed. During the previous month, The PSQI is used for a self-questionnaire that evaluates the clinical and subjective complaints about sleeping. In total, 19 individual items produce a score seven components (indicating a higher score was worse sleep), Subjective sleep quality, duration of sleep time, sleep latency, the efficiency of sleep habit, sleep disturbances, usage of sleeping medication, and daytime dysfunction. For the 7 components yields, sum of global sleep quality score is a maximum 21. The value of cut-off revealed that 90% sensitivity and 87% specificity for discrimination between "Good" and "Bad" sleepers (16). For evaluate, the history problems of sleep asked four questions outside the perinatal periods, each key YES/ NO (experienced difficulties falling asleep earlier, at night multiple awakenings, early morning awakenings, and affecting sleep problems in daytime functions), (17). Participants who said YES to one or more time of these questions were categorized as having "previous sleep problems".

Measurement of Mental Health: EPDS was performed to evaluate postpartum depression. The self-report scale is about 10-item, with response categories four for every item, the score ranging from zero (means no symptoms) to 3 (presence or marked changes). The questionnaire score is between 0 and 30 globally, in which those who achieved a score of thirteen or more were measured as depressed women. The questionnaire "Legitimacy and consistency" have been described previously. In questionnaire has 78% Sensitivity, 75% Specificity, and 0.79 Reliability (18). The study's purpose was thoroughly explained to the professionals educated by the medical centre who were responsible for selecting the sample of eligible females. In this study, we clarified to the participants that there is no compulsion to participate. Anonymously, questionnaires were distributed.

Data analysis: For data analysis, SPSS software (22 Version, Window for PASW Statistics, Chicago; SPSS Inc.). Means ± standard deviation was connected by Continuous variables. Initial analysis, the student performed a t-test for evaluating the statistical difference in continuous variable among the groups which is depressed and non-depressed, and also practiced and non-qualified sleep. If appropriate, the "Mann–Whitney U-test" nonparametric was used. By using the "Chi-square" test to examine the categorical variables and to observe the link slumbering conditions and postpartum depression (as a variable and binomial, variable which is not dependent), In order to control for specific parameters, such as age, education, house owner, physical activity, infant sex, order of the child, type of delivery, body mass index (BMI) and total energy we previously applied logistic regression to the model. As a result, the p-value was two-tailed and the cut-off value for determining consequence was $p < .05$.

RESULTS

Out of total, 51 (28.5 percent) respondents who completed the EPDS and received a level of 13 or higher were classified as having depression. Women with depression and those without depression had their demographic factors and other variables compared. In Table 1, it is depicted how postpartum depression and various sleep-related factors are related. Significant correlations between nap start latency (P = 0.001) and postpartum depression, quality of sleep (P=0.001), usage of sleeping medications (P=0.019), sleep disruptions (P=0.001) and daytime impairment (P=0.001) have been found. Postpartum depression did not significantly correlate with other factors including the quantity or quality of sleep. 96 (53.1 percent) of the 180 respondents who completed the PSQI scored higher than five. Between people who have poor quality of sleep and those who have high quality of sleep, demographic factors and other factors were examined. After adjusting for factors such physical activity, age, education, BMI and home ownership, in the basic model, we discovered a significant positive correlation among quality of sleep and postpartum depression and based upon Model 1 (95% probability value [CI]: (2-5.20); P = 0.001 and odds ratio [OR] =3.6;). The Model 2 that was covariate-adjusted using the Model 1 as well as the infant's sex, the delivery type and child's order, as well as the Model 3 that was covariate-adjusted by using Model 2 as well as total energy did not attenuate it. The findings show that women who have poor quality of sleep are triple times more likely to develop depression than those that don't (p=0.001) as shown in table 2.

Table 1: Shows demographic details and the associated sleep factors

Variables	Details	Sleep Quality			Depressed		
		Yes, n=63	No, n=117	P	Yes, n=95	No, n=85	P
Infant Gender	Female	33 (53)	54 (46)	0.1	49 (52)	39 (46)	0.2
	Male	30 (47)	63 (54)		46 (48)	46 (54)	
Education	Academic	15(23)	37 (32)	0.3	21 (22)	20 (24)	0.2
	High School	32 (51)	41 (35)		49 (51)	37 (43)	
	Primary	16 (26)	39 (33)		25 (27)	28 (33)	
Physical Activity	Mild	20 (32)	36 (31)	0.7	28 (29)	30 (35)	0.56
	Moderate	32 (51)	57 (49)		50 (52)	40 (47)	
	Severe	5 (8)	13 (11)		10 (11)	8 (9)	
	Never	6 (9)	11 (9)		7 (8)	8 (9)	
Occupation	Having Job	5 (8)	10 (8)	0.9	8 (9)	6 (7)	0.25
	House Wife	58 (92)	107 (92)		87 (91)	79 (93)	
Type of Delivery	Normal	22 (35)	45 (38)	0.65	33 (35)	32 (38)	0.55
	Cesarean	41 (65)	72 (62)		62 (65)	53 (62)	
Child Order	First	34 (54)	65 (56)	0.92	55 (58)	31 (36)	0.60
	Second	23 (37)	41 (35)		32 (33)	32 (38)	
	More than Two	6 (9)	11 (9)		8 (9)	7 (8)	
BMI	Less than 25	25 (40)	49 (42)	0.76	38 (40)	36 (42)	0.8
	25 to 30	24 (39)	43 (37)		37 (39)	32 (38)	
	More than 30	14 (21)	25 (21)		20 (21)	17 (20)	
Owner of the House	Owner of the House	32 (51)	61 (52)	0.77	49 (52)	42 (49)	0.7
	Rented	31 (49)	56 (48)		46 (48)	43 (50.5)	
Sleep Quality	Yes	45 (72)	50 (43)	0.001			
	No	18 (28)	67 (57)				
Age	Mean±SD	25.4 ± 5	26.3 ± 6	0.11	26.2 ± 5.3	27 ± 5.2	.80
Duration from previous delivery	Mean±SD	4.5 ± 2.9	4.3 ± 3.1	.63	3 ± 3.9	3.3 ± 4.1	.81
Duration of date of delivery	Mean±SD	54.5 ± 24	55.9 ± 21	.43	55.74 ± 23	55.8 ± 22	.79
Total Energy	Mean±SD	2828 ± 815	2990 ± 800	.06	2920 ± 772	2951 ± 851	.51

Duration of sleep onset	Mean±SD	1.5 ± 1	1.11 ± 0.89	<.001			
Time of sleep	Mean±SD	.95 ± 0.96	.75 ± .93	.06			
Outcome of sleep	Mean±SD	.95 ± 1.14	.76 ± 1.05	.07			
Disturbed sleep	Mean±SD	1.5 ± .6	1.25 ± .55	<.001			
Medicine used for sleep	Mean±SD	.13 ± .55	.02 ± .24	.01			
Disturbance during sleep in day time	Mean±SD	1 ± 1	0.43±0.69	<.001			

Table 2: Shows odd ratio of sleep quality and postpartum depression

Fitting Model	PPD*		p
	no	Yes	
Crude	01	3.20 (2-5.20)	.001
M** 1	01	3.21 (1.86-5.31)	.001
M 2	01	3.29 (2.04-5.39)	.001
M 3	01	3.29 (2.05-5.38)	.001

*PPD; postpartum depression
**M; model

DISCUSSION

The current study enrolled a total of 180 participants.. According to our research, poor sleep may be related to postpartum depression. Depression in postpartum was linked to sleep disruptions and poor perceived quality of sleep, according to a cross-sectional community study (13). The connection between postpartum depression and insufficient sleep has been investigated in several studies (9). However, several studies have looked at postpartum depression and sleep at the same point in time (19), and some have looked at the impact of sleeping on postpartum depression at a point in time less than 4 weeks (19). As a result, it is challenging to draw conclusions about possible causal relationships between postpartum depression and sleep. It is possible that symptoms of depression cause sleep problems, but it is also possible that symptoms of depression cause insomnia. When sleep issues and depression symptoms are studied at the very same time, the direction of causality is difficult to determine. Increased anxiety and depression symptoms were linked to increased self-described sleeping problems postpartum, which is similar to earlier investigations (9). This is in line with the findings of Okun and colleagues (15), who discovered that in the first 17 weeks following delivery, a lack of sleep was a strong predictor of postpartum depressive symptoms. The importance of addressing sleep issues early in the postpartum period and preventing them from getting worse is highlighted by our findings. In a cohort research involving 51 women that are not depressed who had previously experienced postpartum severe depression, it was discovered that poor sleep quality in the final stages of pregnancy was significantly correlated with a return of depressive episodes in the postpartum time (20). There is a direct link between poor sleep and sadness during pregnancy, according to a prospective cohort study of 273 women (21). These researches have produced results that agree with those of the current investigation. Depression and sound sleep have reciprocal interactions. Depression can cause bad quality of sleep, while low quality of sleep can cause distress (19). There may be a connection between sadness and poor quality of sleep owing to numerous psycho-neuro-endocrinologic and psycho-neuro-immunologic mechanisms (22). The possibility that this study will advance our understanding of mental health and prenatal sleep across cultures is one of its key strengths. It was carried out throughout the capital town of Ardebil. The sample plan might prevent bias in favors of one group. The study's drawback include the exclusion of variables like unexpected pregnancies and the use of medications like folic acid that were recommended by doctors or staff members of health centers that may have an effect on postpartum depressive symptoms.

CONCLUSION

Conclusively, in the sample population, poor quality of sleep and postpartum depression were common. Some sleep-related factors and postpartum depressive symptoms are linked to one another. Even after correcting for confounders, this connection persisted.

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