Sleep Quality and Postpartum Depression among Breastfeeding Mothers attending Postnatal Clinic of Selected Teaching Hospitals in Osun State

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Abstract: *The birth of a child can be filled with joy. However, the transition into motherhood role can as well be stressful, especially for first-time mothers. Mothers often do not sleep well at night due to the demands of the baby. These results in poor sleep quality at night and increased day-time sleepiness. The aim of this study is to assess the sleep quality and postpartum depression among nursing mothers. This study was done using a cross-sectional study design. The respondents (191) were mothers attending postnatal clinic in WGH and IHU, OAUTHC. The questionnaires were designed using the following scales: Pittsburgh sleep quality index (PSQI) was used to assess the sleep quality and sleeping patterns and Edinburgh postpartum depression scale was used to assess for signs and symptoms of postpartum depression. The mean age of the respondents was 32.10 ± 5.812. Majority of the respondents, 38.2% age range was between 26 – 31 years. More than half of the respondents' current postpartum period and age of baby was between 1 – 6 months (54.5%) while more than 12 months (9.4%). More than half of the respondents, 52.9% sex of the baby was male while 47.1% were females. 84.3% of the respondents were from monogamy family and 15.7% were from polygamy family. About(24.6%) of the respondents had low level of stress, 100 (52.4%) had moderate level of stress, 41 (21.5%) had high level of stress and 3 (1.6%) had very high level of stress. More than 104 (54.5%) of the respondents had no depression and 87 (45.5%) of the mothers attending immunization visit or postpartum care had possible depression. It was recommended that extended family members should be educated on how to provide care and support for new mothers to ease the burden they experience.*

Keywords: sleep quality, postpartum depression, postnatal, immunization

INTRODUCTION

Postpartum depression (PPD) is a prevalent condition that adversely impacts the lives of women and their babies during the postpartum period. PPD is a significant mental health issue marked by an extended duration of emotional turmoil, arising at a moment of substantial life transition and heightened duties associated with the care of a baby (Ahmed et al.,2019). Annually, around 11 to 20 percent, equating to over 600,000 moms, experience postpartum depression (PPD) in the United States (Centres for Disease Control [CDC], 2015). In other terms, one in seven moms will have postpartum depression following childbirth (Abonjinmi et al., 2022).

Postpartum women forfeit about six weeks of sleep during a single year of nurturing a newborn. A study on the sleeping patterns of individuals in the United Kingdom revealed that parents obtain an average of 5.1 hours of sleep each night during the first year of their child's life. This indicates that the typical new parent forfeits 2.9 hours of sleep per night from the recommended minimum of eight hours. This results in a weekly sleep deficit of 20.3 hours, totalling 1,055.6 hours lost throughout the first year of a child's existence, which is comparable to 44 days (Deni, 2013).

Women with postpartum depression may exhibit self-neglect and partake in risky behaviours, including excessive alcohol, cigarette, and illicit drug use. The mother's postpartum depression (PPD) can potentially impact the infant and other family members. Research indicates that untreated postpartum depression (PPD) can negatively impact maternal-infant connection and the cognitive and motor development of the newborn, as well as being linked to behavioural and learning difficulties in childhood and adolescence. Given the detrimental impact of PPD symptoms on both the mother and newborn, the early identification of women exhibiting PPD symptoms is critically significant for public health (Simhi et al., 2019). Poor sleep, a hallmark sign of severe depression, may elucidate the negative parenting attitudes and behaviours of depressed women, as indicated by postpartum sleep abnormalities (Tikotzky, 2016). In instances where moms are not experiencing depression, they may yet have persistent negative thoughts, such as concerns about the baby's potential death or doubts regarding their capability to care for an infant. Negative thoughts can induce psychological anguish in the mother, subsequently impacting the baby's health.

High-quality sleep correlates with several beneficial effects, including improved health, reduced daytime drowsiness, enhanced well-being, and superior psychological performance. Sleep health is described as a "multidimensional pattern of sleep-wakefulness, tailored to individual, social, and environmental requirements, that fosters physical and mental well-being." Sleep health is essential for cognitive performance, productivity, emotional stability, physical well-being, and overall quality of life (Soon et al., 2020). Research has been shown that women undergo substantial alterations in sleep patterns throughout pregnancy and the postpartum phase. Hormonal variations can disrupt sleep in early pregnancy, the developing foetus complicates comfortable sleep in later pregnancy, and newborn care results in many nocturnal awakenings throughout the postpartum phase (Makumbi, 2018).

Alterations in habitual sleep patterns for new moms are substantial and can profoundly affect the postpartum period. Primiparous moms often encounter heightened sleep fragmentation, reduced total sleep duration per night, and an escalation in daily wakefulness during the early postpartum phase (Stremler et al., 2020). This indicates that sleep problems are prevalent among moms when they acclimatise to the maternal role. Subpar sleep quality is highly correlated with stress, exhaustion, and diminished physical and mental health. Subpar sleep quality induces psychological discomfort and postpartum depression symptoms, resulting in diminished mood throughout the postpartum period (Robyn et al., 2020).

Individuals experiencing sleep deprivation face an elevated risk of depression, with fifty percent of those who develop depression reporting sleep disturbances. Research indicates that fifty percent of mental illnesses during pregnancy are linked to anxiety and depression (Basharpoor et al., 2018). The birth of a new infant is often a joyous occasion for a family; yet, it may also provide significant stress for first-time moms. Postpartum stress might negatively impact the psychological well-being of these mothers. Postpartum depression is characterised as a significant depressive condition that manifests between 4-6 weeks following childbirth and last for a minimum of 2 continuous weeks. It impacts maternal health and foetal development (Makumbi, 2018).

Postpartum depression (PPD), a significant form of psychological distress following childbirth, is marked by anhedonia, anxiety symptoms, panic attacks, involuntary crying, and a depressed mood, and may occasionally be associated with suicidal ideation after the birth of an infant (Simhi et al., 2019). Additional characteristics correlated with postpartum depression (PPD) include pre-existing depression, single parenthood, unemployment, insufficient social support, and negative maternal self-perception. A considerable number of women exhibit increased susceptibility to mental disorders during pregnancy and the postpartum phase. Data indicate that 50 percent of women who have had pregnancy-related depression have postpartum depression. Studies indicate that pregnancy and delivery may render women vulnerable to sleep disturbances (Basharpoor et al., 2018).

Mothers experience moderate tiredness, along with elevated levels of sadness, anxiety, and stress. Fatigue is highly correlated with diminished parental self-efficacy, reduced parenting warmth and participation, and elevated parenting animosity. Restricted health and self-care practices, impractical expectations for sleep, and an elevated demand for social support are substantial predictors of tiredness (Giallo et al., 2011). The alterations in sleep patterns and the resultant rise in exhaustion impact women's physical and mental health, relationships, employment, and parenting efficacy; hence, it is essential to evaluate sleep quality and postpartum depression in nursing moms.

Research indicates a bi-directional association between sleep problems and depression. Sleep disturbances may coexist with mood disorders and/or serve as a predictive indication of such illnesses (Makumbi, 2018). Chronic sleep disturbance and inadequate sleep quality can result in postpartum depression, which in turn can exacerbate poor sleep quality.

In Nigeria, there is inadequate awareness of postpartum depression (PPD) among women in the postpartum phase and insufficient acknowledgement of its symptoms by healthcare professionals. This has led to missed diagnoses and has required study on the prevalence and related risk factors of PPD to substantiate the impact of PPD. Despite limited research on the incidence of postpartum depression (PPD) and its risk factors at several tertiary institutions in Nigeria, there is a scarcity of studies focused on PPD among women, especially at six weeks postpartum (Adeyemo et al., 2020). Moreover, there has been no research on sleep quality and postpartum depression in Osun State. This study seeks to address the gap by evaluating sleep quality and related postpartum depression among women visiting the postnatal clinic at Wesley Guild Hospital (WGH) and Ife Hospital Unit (IHU), Obafemi Awolowo University Teaching Hospital Complex (OAUTHC), Osun State. The specific objectives are to;

1. assess the sleep quality of mothers attending postnatal clinic in WGH and IHU, OAUTHC.
2. assess the level of postpartum depression of mothers attending postnatal clinic in WGH and IHU, OAUTHC.
3. determine the influence of sleep quality on wellbeing of postpartum mothers attending postnatal clinic in WGH and IHU, OAUTHC.

Research Hypotheses

Ho1: There is no significant relationship between sociodemographic variables and sleep quality among breastfeeding mothers.

Ho2: There is no significant relationship between sleep quality and postpartum depression among breastfeeding mothers.

Research Method

A cross-sectional study was employed to investigate the relationship between sleep quality and postpartum depression among mothers attending the postnatal clinic at Wesley Guild Hospital and Ife Hospital Unit, OAUTHC, Osun State. The study aimed to enable generalization to the wider population of new mothers and was conducted over a period of one month. The study was carried out at Wesley Guild Hospital (WGH) in Ilesa and Ife Hospital Unit (IHU), Ile-Ife, Osun State, Nigeria. The target population comprised nursing mothers registered to attend postnatal clinics during the study period at both hospitals. The sample size was calculated using Taro Yamane's formula (1967), considering the total population of 222 breastfeeding mothers attending the postnatal clinic across both hospitals, with an attrition rate of 10% factored in. The sample size for IHU was calculated as 103, while the sample size for WGH was calculated as 88, resulting in a total of 191 questionnaires distributed across both hospitals.

A simple random sampling technique was used to select the respondents, ensuring an equal chance of selection for all mothers attending the postnatal clinic. Mothers who refused to participate were excluded from the study. The data collection instrument was a semi-structured, self-administered questionnaire, validated and reliable for use in this study. The questionnaire had four sections:

socio-demographic information, sleep quality (assessed using the Pittsburgh Sleep Quality Index, PSQI), and postpartum depression (assessed using the Edinburgh Postpartum Depression Scale, EPDS). The PSQI has been validated as an effective tool for assessing sleep problems, and the EPDS is a reliable instrument for identifying postpartum depression. To ensure the validity of the instrument, the content was matched with the research objectives and reviewed by the supervisor for content and face validity. Reliability was established through studies showing high internal consistency and test-retest reliability for both the PSQI and EPDS.

Data collection began after receiving approval for the study. The questionnaires were administered to mothers attending postnatal clinics, with explanations provided for any unclear questions. The completed questionnaires were then collected. The collected data was entered into the computer after verification for completeness. Data management procedures were performed, and analysis was carried out using the Statistical Package for the Social Sciences (SPSS) version 21. Both descriptive and inferential statistics were employed to describe the study sample and present the data

RESULTS

Table 1: Socio-Demographic Characteristics of Respondents

Variables	**Characteristics**	**Frequency (n= 191)**	**Percentage (%)**
Age	20 – 25 26 – 31 32 – 37 38 – 43	23 73 51 44	12.0 38.2 25.7 23.0
Hospital	WGH IHU	103 88	53.9 46.1
Religion	Christianity Islam Others	148 35 8	77.5 18.3 4.2
Ethnicity	Yoruba Igbo Hausa Others	161 13 10 7	84.3 6.8 5.2 3.7
Current postpartum period (in months)	1 – 6 7 – 12 >12	104 69 18	54.5 36.1 9.4
Age of baby (in months)	1 – 6 7 – 12 >12	104 69 18	54.5 36.1 9.4

Sex of the baby	Male	101	52.9
	Female	90	47.1
Nature of family	Monogamy	161	84.3
	Polygamy	30	15.7
Position of the baby among siblings	1st	53	27.7
	2nd	86	45.0
	3rd	30	15.7
	4th	17	8.9
	5th or more	5	2.6
Is there a maid available at home	Yes	44	23.0
	No	147	77.0
Is mother living with anyone who provides help	Mother in law	58	30.4
	Mother	22	11.5
	Sister	30	15.7
Occupation	Housewife	21	11.0
	Self employed	108	56.5
	Civil servant	56	29.3
	Student	6	3.1
Average income per month (#)	30,000 and below	84	44.0
	31,000 – 60,000	57	29.8
	61,000 – 80,000	30	15.7
	81,000 and above	20	10.5

Table 1 shows the socio-demographic data of respondents. The mean age of the respondents was 32.10 ± 5.812. Majority of the respondents, 38.2% age range was between 26 – 31 years. Most of the respondents, 77.5% were Christians, 18.3% were Muslims, and 4.2% were from other religion. Majority were from Yoruba tribe (84.3%), Igbo tribe (6.8%), Hausa (5.2%) and 3.7% were from other tribes. More than half of the respondents' current postpartum period and age of baby was between 1 – 6 months (54.5%) while more than 12 months (9.4%). More than half of the respondents, 52.9% sex of the baby was male while 47.1% were females. 84.3% of the respondents were from monogamy family and 15.7% were from polygamy family. Few of the respondents, 23.0% have a maid available at home and 11.5% have their mothers living with them to provide help. More than half of the respondents, 56.5% were self-employed, 29.3% were civil servant, 11.0% were housewives and 3.1% were students. About 44.0% average income per month was <#30,000 while 10.5% was >#50,000.

Table 2: Background History of Sleep Quality

Variables	Mean	SD	Minimum	Maximum
What time do you usually sleep at night?	9.79	0.972	8pm	12am
How long (in minutes) does it take you to fall asleep each night?	22.01	15.159	5 minutes	60 minutes
What time do you usually get up in the morning?	5.42	0.790	3am	8am
How many hours of actual sleep did you get at night?	6.54	0.790	3hours	8 hours

The above table shows that respondents go to bed between 8pm and 12am, it takes them about 5 minutes to 60 minutes to sleep, and they also get up from 3am to 8am. Lastly, they spend 3 hours to 8 hours sleeping each night.

Table 3: Pittsburgh Sleep Quality Index (PSQI)

During your past month(s), how often have you had problems sleeping because you..	Not during the past month	less than once a week	less than once or twice a week	three or more times a week	Mean	SD
Wake up in the middle of the night or early Morning	21 (11.0)	44 (23.0)	82 (42.9)	44 (23.0)	2.78	0.926
Cannot get to sleep within 30 minutes	29 (15.2)	28 (14.7)	102 (53.4)	32 (16.8)	2.72	0.920
Have to get up to use the toilet	56 (29.3)	31 (16.20	67 (35.1)	37 (19.4)	2.45	1.108
Cannot breathe comfortably	99 (51.8)	45 (23.6)	31 (16.2)	16 (8.4)	1.81	0.993
Cough or snore loudly	145 (75.9)	25 (13.1)	17 (8.9)	4 (2.1)	1.37	0.735
Feel too cold	92 (48.2)	45 (23.6)	51 (26.7)	3 (1.6)	1.82	0.884
Feel too hot	82 (42.9)	65 (34.0)	42(22.0)	2 (1.0)	1.81	0.812
Have bad dreams	101(52.9)	61 (31.9)	19 (9.9)	10 (5.2)	1.68	0.858

Have pain	85 (44.5)	38 (19.9)	68 (35.6)	0	1.91	0.893
How often have you taken medicine to help you fall asleep (prescribed or "over the counter")?	111 (58.1)	43 (22.5)	36 (18.8)	1 (0.5)	1.62	0.805
How often have you had trouble staying awake while driving, eating meals, or engaging in social activity?	50 (26.2)	84 (44.0)	45 (23.6)	12 (6.3)	2.09	0.861
	No problem	**Only a slight problem**	**Somewhat of a problem**	**A very big problem**	**MEAN**	**SD**
How much of a problem has it been for you to keep up enough enthusiasm to get things done?	84 (44.0)	56 (29.3)	32 (16.8)	172 (90.1)	1.70	0.766
	Very good	**Fairly good**	**Fairly bad**	**Very bad**	**MEAN**	**SD**
How would you rate your sleep quality overall?	50 (26.2)	121 (63.4)	20 (10.5)	0	1.84	0.586

From Table 4 above, few, 11.0% of the respondents do not wake up in the middle of the night or early morning while 23.0% wake up in the middle of the night or early in the morning once or twice a week and 23.0% wake up in the middle of the night or early in the morning three or more times a week. More than half of the respondents, 53.4% cannot get to sleep within 30 minutes less than once or twice a week during the past months. About one third, 35.1% have to get up to use the toilet once or twice weekly. 51.8% of respondents can breathe properly at night in the last month. Majority of the respondents, 75.9% do not cough or snore loudly at night in the past month. Less than half of the respondents, 48.2% respondents do not feel too cold at night in the past month, 42.9% respondents do not feel too hot at night. About one third, 31.9% of respondents have bad dreams two or more times a week. 35.6% have pain less than once a week. 22.5% of respondents take medications less than once a week to fall asleep. Few of the respondents, 26.2 % do not have problems staying awake while driving, eating meals or engaging in social activities. About half of the respondents 50.2% find a slight problem in getting enough enthusiasm in getting things done. 37.2% respondents rated their sleep quality as very bad.

Table 5: Level of postpartum depression among postpartum mothers

Variables	Frequency (N)	Percentage (%)	Mean	Sd
I have been able to laugh and see the funny side of things			2.88	1.057
Always	69	36.1		
Sometimes	57	29.8		
Occasionally	38	19.9		
Never	27	14.1		
I look forward to enjoyment to things like I did before childbirth			3.16	1.071
Always	107	56.0		
Sometimes	28	14.7		
Occasionally	36	18.8		
Never	20	10.5		
I blame myself unnecessarily when things go wrong			1.81	0.906
Always	6	3.1		
Sometimes	45	23.6		
Occasionally	46	23.6		
Never	94	49.2		
I have been anxious or worried for no reason			2.00	0.923
Always	11	5.8		
Sometimes	48	25.1		
Occasionally	62	32.5		
Never	11	5.8		
i have felt scared or panicked for no reason			1.82	0.936
Always	16	8.4		
Sometimes	21	11.0		
Occasionally	66	34.6		
Never	88	46.1		
Things have been weighing me down			1.84	0.898
Always	8	4.2		
Sometimes	40	20.9		
Occasionally	57	29.8		
Never	86	45.0		
I have been so unhappy that I had difficulty sleeping			1.84	0.912
Always	12	6.3		

Sometimes	30	15.7		
Occasionally	64	33.5		
Never	85	44.5		
I have felt sad or miserable			1.66	0.936
Always	18	9.4		
Sometimes	8	4.2		
Occasionally	57	29.8		
Never	108	56.5		
I have been so unhappy that I have been crying			1.72	0.997
Always	18	9.4		
Sometimes	21	11.0		
Occasionally	41	21.5		
Never	111	58.1		
The thought of hurting myself has occurred to me			1.43	0.843
Always	12	6.3		
Sometimes	8	4.2		
Occasionally	31	16.2		
Never	140	73.3		

Table 5 shows the level of postpartum depression among nursing mothers. Majority of the mothers 66 (36.1%) said they have always been able to laugh and see the funny side of things while 27 (14.1%) have never been able to laugh and see the funny side of things for the past months. Majority; 107 (56.0%) claimed that they always look forward to enjoyment of things like they did before childbirth while 36 (18.8%) said they have occasionally looked forward to enjoyment of things that they did before childbirth. Majority of the nursing mothers; 94 (49.2%) said they never blamed themselves when things go wrong, while 6 (3.1%) said they always blame themselves when things go wrong. About one third of the nursing mothers; 70 (36.6%) said they never feel anxious or worried for no reason while 11 (5.8%) said they always feel anxious or worried for no reason. 126(54.5%) said they have rarely felt scared or panicked for no reason while 88 (46.1%) said they have never felt scared or panicked for no reason. Less than half of the respondents; 86 (45.0%) never had thing that have been weighing them down. Majority of the respondents 140 (73.3%) said the thought of hurting themselves has never occurred to them while 31 (16.2%) claimed the thought of hurting themselves has occasionally occurred to them.

Table 6: Overall level of depression

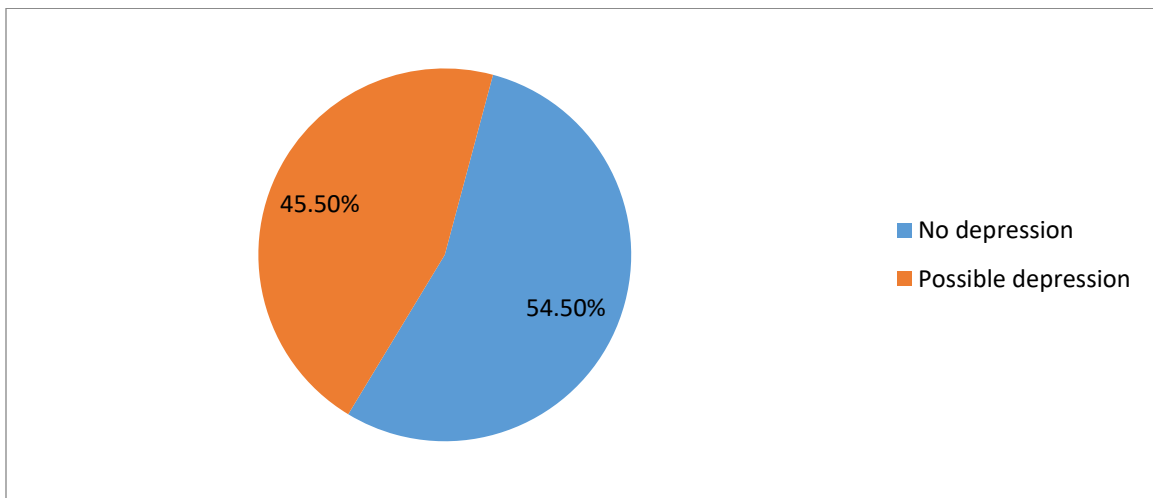|		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No depression	104	54.5	54.5	54.5
	Possible depression	87	45.5	45.5	100.0
	Total	191	100.0	100.0	

Figure 1: *Pie chart showing the overall level of depression*

Table 7: Influence of sleep quality on wellbeing

Sleep quality	Depression	
	no depression	possible depression
very good	30	17
fairly good	45	44
fairly bad	29	26
Total	104	87

According to the table above, postpartum mothers with very good sleep quality and fairly good sleep quality from table 7 with the sleeping duration between 3 to 8 hours have low chances of

postpartum depression, while those with fairly bad sleep quality have higher chances of developing postpartum depression which can influence the well being of mothers during the postpartum period.

Testing of Hypotheses

Ho1: There is no significant relationship between sociodemographic variables and sleep quality among breastfeeding mothers.

Table 8: Relationship between sociodemographic variables and sleep quality among breastfeeding mothers

Socio-demographic characteristics	Sleep quality			Test of significance	Interpretation
	Very good	Fairly good	Fairly bad		
Age 20 – 25 26 – 31 32 – 37 38 – 43	4 18 14 14	18 46 31 26	1 9 6 4	Df = 6 X^2 = 3.522 P= 0.741	Not significant
Religion Christian Muslim Others	41 6 3	92 27 2	15 2 3	Df = 4 X^2 = 10.910 P= 0.028	Significant
Ethnicity Yoruba Igbo Hausa others	42 3 4 1	101 8 6 6	18 2 0 0	Df = 6 X^2 = 3.900 P= 0.006	Significant
Nature of family Monogamy Polygamy	43 7	102 19	16 4	Df = 2 X^2 = 0.388 P= 0.006	Significant
Occupation Housewife Self employed Civil servant Student	11 27 9 3	8 73 37 3	2 23 14 2	Df = 6 X^2 = 16.238 P= 0.003	Significant
Average income (#) <30,000 31.000 – 60,000` 61,000 – 80,000 >80,000	28 14 6 2	50 35 19 17	6 8 5 1	Df =6 X^2 = 9.096 P= 0.001	Significant

The table presents the relationship between sociodemographic variables and sleep quality among breastfeeding mothers, indicating significant and non-significant associations across different factors. Age was found to have no significant relationship with sleep quality (P = 0.741), suggesting that age does not affect sleep quality among the participants. However, religion, ethnicity, nature of family, occupation, and average income all showed significant relationships

with sleep quality. For instance, religion had a significant impact (P = 0.028), with Christians having better sleep quality. Ethnicity (P = 0.006) and the nature of family (P = 0.006) also influenced sleep quality, with Yoruba mothers reporting better sleep. Occupation (P = 0.003) and income (P = 0.001) also significantly affected sleep quality, with housewives and mothers with lower incomes generally reporting poorer sleep. These findings underscore the importance of sociodemographic factors in determining sleep quality among breastfeeding mothers

Ho2: There is no significant relationship between sleep quality and postpartum depression among breastfeeding mothers.

Table 9: Relationship between sleep quality and postpartum depression among breastfeeding mothers

Sleep quality	Depression			
	no depression	possible depression	Test of significance	Interpretation
very good sleep quality	30	17	Df = 2 X^2 = 2.276 P= 0.321	Not significant
fairly good sleep quality	45	44		
fairly bad	29	26		

The table shows the relationship between sleep quality and postpartum depression among breastfeeding mothers, revealing that sleep quality did not have a significant association with depression (P = 0.321). Specifically, the distribution of depression status (no depression or possible depression) was relatively similar across different sleep quality groups—those with very good, fairly good, or fairly bad sleep quality. This suggests that sleep quality, in this sample, does not significantly impact the likelihood of experiencing postpartum depression among breastfeeding mothers, indicating that other factors may play a more substantial role in depression risk.

DISCUSSION OF FINDINGS

The average age of the responders was 32.10 ± 5.812. The majority of responders, 38.2%, were aged between 26 and 31 years. This contrasts with data from Aksu et al. (2019), which indicated that 54.5% of respondents were aged 26 to 35 years. Of the respondents, 77.5% identified as Christians, 18.3% as Muslims, and 4.2% adhered to other religions. This aligns with the findings of Adeyemo et al. (2020), which indicated that 80.3% of the participants identified as Christians. The majority were from the Yoruba tribe (84.3%), followed by the Igbo tribe (6.8%), the Hausa tribe (5.2%), and 3.7% from other tribes. This aligns with the findings of Adeyemo et al. (2020), which indicated that 74.5% of the respondents were of Yoruba descent. Over half of the respondents were in the postpartum period with infants aged 1 to 6 months (54.5%), while those

with infants older than 12 months constituted 9.4%. This aligns with data from a research indicating that 50.5% of respondents were in the same postpartum time and age range (Kim et al., 2021). Over half of the respondents, 52.9%, said that the sex of the newborn was male, while 47.1% indicated female. 84.3% of respondents originated from monogamous families, while 15.7% came from polygamous families. Only 23.0% of respondents have a maid at home, while 11.5% have their moms residing with them for assistance. Over half of the respondents, 56.5%, were self-employed; 29.3% were public servants; 11.0% were homemakers; and 3.1% were students. Approximately 44.0% of the average monthly income was below #30,000, while 10.5% exceeded #50,000. This aligns with data from a research indicating that 56.2% of the average monthly income was below #30,000 (Adeyemo et al., 2020).

The study's findings indicated that just 21.5% of respondents achieve 8 hours or more of sleep nightly, 63.4% obtain between 6 to 7 hours, 11.9% attain around 5 hours, and 4.2% sleep for less than 5 hours each night. Research on the sleeping patterns of individuals throughout the United Kingdom revealed that parents obtain an average of just 5.1 hours of sleep each night during the initial year of their child's life. This indicated that the typical new parent has a deficit of 2.9 hours of sleep every night, falling short of the recommended minimum of eight hours. (Chinawa, et al., 2016). limited 11.0% of respondents do not awaken throughout the night or early morning, whereas 23.0% awaken once or twice a week, and another 23.0% awaken three or more times a week.

Over half of the respondents, 53.4%, had been unable to fall asleep within 30 minutes less than once or twice a week in recent months. This aligns with the findings of Lee et al. (2020), which indicate that 70.2% of nursing women are unable to fall asleep within 30 minutes at least once or twice a week during the last months. Approximately one third, specifically 35.1%, must rise to utilise the loo one or twice every week. 51.8% of respondents had been able to breathe well at night over the past month. A majority of respondents, 75.9%, did not experience coughing or loud snoring at night in the last month. Fewer than half of the respondents, namely 48.2%, reported not feeling too chilly at night during the preceding month, while 42.9% indicated they did not feel excessively hot at night. This contrasts with data from a research in which 77.2% of respondents reported not feeling too warm at night (Aksu et al., 2019). Approximately 31.9% of respondents experience nightmares two or more times weekly. 35.6% have discomfort less frequently than once every week. 22.5% of participants utilise drugs for sleep less frequently than one weekly. Only 26.2% of the respondents do not experience difficulties being alert when driving, dining, or participating in social events. Approximately 50.2% of respondents experience a minor issue with generating sufficient passion to complete tasks. 37.2% of respondents assessed their sleep quality as extremely poor. This aligns with the findings of Kim et al. (2021), in which 60.5% of respondents assessed their sleep quality as extremely poor.

The majority of women exhibit signs of postpartum depression. A majority of respondents, 87 (45.5%), exhibit potential depression, whereas 104 (54.5%) do not display any signs of depression. This is significantly more than the research by Adeyemo et al. (2020), which involved 250 mothers from six primary health care centres. The incidence of postpartum depression was 35.6%. The incidence of postpartum depression in this study exceeds that reported by Tungchama et al. (2018),

who found a weighted prevalence of 21.8% among 300 mothers attending postnatal and children's welfare clinics.

CONCLUSION

This study placed emphasis on the sleep quality and postpartum depression among breastfeeding mothers attending postnatal clinic of Wesley Guild Hospital and Ife Hospital Unit, OAUTHC, Osun State. It could be inferred from this investigation that breastfeeding mothers have poor sleep quality, increased level of stress and experience signs of postpartum depression. It is important to note that there is need for research to gain more knowledge on why nursing mothers usually experience such levels of stress, have poor sleep quality and have symptoms of postpartum depression. Also, there is a need to identify new ways to effectively manage stress so as to promote the sleep quality of the mothers. Support network should be built for mothers during the antenatal care period before childbirth.

Recommendations

In view of the findings of the study, the following recommendations were made;

1. Husbands and other extended family members should be educated on how to provide care and support for new mothers to ease the burden they experience.

2. Social workers should create support groups for new mothers within the community.

3. Government should build child day care centers within the community to provide care for the children while the mothers return to her job.

4. The Government should also support maternity and infant clinics by providing health care facilities that will be of benefit to them.

5. Health education should be given to expecting mothers during antenatal period to inform them on what to expect and do after childbirth.

6. Nurses and midwives should conduct home visits that focus on the emotional care of the mothers.

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