KNOWLEDGE, ATTITUDE AND PREVALENCE OF POSTPARTUM DEPRESSION AMONG MOTHERS ATTENDING IMMUNIZATION CLINICS IN OSOGBO LOCAL GOVERNMENT, OSUN STATE.

Ajibade Iyanuoluwa Tobiloba[1], Ajibade Philip Omotayo,

Kolawole Sodeinde[2], Akinbola Akinyemi[2]

and Nwachukwu Boris Chichebem[3]

[1]Department of Public Health, Babcock University, Ogun state.

[2]Department of Community Medicine, Babcock University, Ilishan-Remo, Ogun State

[3]Department of International Public Health, Liverpool John Moores University

*Corresponding author email: ajibadeiyanuoluwa@gmail.com

ABSTRACT: *Postpartum depression is one of the most common complications that occurs in mothers which has negative effects on the babies whose mothers were affected. The study aimed to determine the knowledge, attitude and prevalence of postpartum depression. A descriptive cross-sectional study design was adopted for this study. A multistage sampling technique was used to enroll 250 nursing mothers from the total population using 8 health facilities in the location. Data was collected using a pretested interviewer-administered questionnaire which included a standardized tool (Edinburgh Postnatal Depression Scale). Analysis was carried out using IBM SPSS V21.0. Frequency, chi-square and binary logistic regression analysis were used to give statistical responses and associations between the variables. The result of the analysis showed that the prevalence of postpartum depression was 33.6%. Majority (60%) of the respondents had fair knowledge of postpartum depression. More than half (52.4%) of the respondents had a moderate attitude towards postpartum depression. There was no statistically significant association between knowledge, attitude towards postpartum depression and prevalence of postpartum depression. There was a significant association between previous history of postpartum depression, occupation of the spouse and the prevalence of postpartum depression. Postpartum depression is known to be a major public health concern for women of reproductive age. The study revealed a high prevalence rate of postpartum depression, it therefore recommended that the government should implement policies and also programs that would promote awareness and early recognition of postpartum depression.*

KEYWORDS: Postpartum Depression, Knowledge, Attitude, Prevalence.

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INTRODUCTION

The motherhood phase is a beautiful, joyful and exciting one, according to traditional belief. Beck (2010) defined postpartum depression as a condition that occurs within the first six weeks after delivery to months. Research has shown that the onset of postpartum depression majorly occurs usually within the first six weeks after childbirth and also the severity, timeframe and course vary from mother to mother (Kettunen, Koistinen & Hinitikkals, 2014). The American Psychological Association (2014) states the signs and symptoms of postpartum depression to include fatigue, inability to sleep, impaired self-esteem, suicidal tendencies, mood swings, feeling down and sad, difficulties bonding with the child. There are several risk factors for the development of postpartum depression which include biological factors; socioeconomic factors; hormonal changes during pregnancy and after delivery, and changes in the body of the mother after giving birth, psychosocial factors, lack of family and adequate support from friends and family, relationship issues, underlying health conditions, individual or family history of depression (Ghaedrahmati et al., 2017).

Globally, the prevalence rate of postpartum depression in the world according to a large meta-analysis conducted in 2021 is 17.22% (Wang et al., 2021). The meta-analysis done by Wang et al. (2021) showed that South Africa had the highest prevalence rate of 39.96%; Southern Asia, 22.32%; South America, 21.71%; Western Asia, 19.83%; Northern Africa, 18.75%; Eastern Asia, 17.39%; Northern America, 17.01%; Eastern Europe, 16.62%; Southern Europe, 16.34%; Northern Europe, 13.78%; Western Africa, 13.62%; and South-Eastern Asia, 13.53%. The prevalence rate of postpartum depression in Northeastern Nigeria was revealed to be 22.4% (Sulyman & Dattijo, 2016), Eti Osa local government area of Lagos state was 35.6% (Adeyemo, Oluwole, Kanma-Okafor, Izuka & Odeyemi, 2020), Enugu north was 34.6% (Chinawa et al, 2016). A study conducted in Osogbo in 2018 by Abiodun, Abiodun and Akinsulore (2018) revealed that the prevalence of postpartum depression was 17.70%.

Lack of adequate knowledge on postpartum depression makes many women unaware of the condition, since they do not know the signs and symptoms of the condition. If a woman has poor knowledge of postpartum depression during the pregnancy phase and after childbirth, she might not know the symptoms and will not get treatment for postpartum depression (Akwa, 2015). A study by Abazie & Usoro (2021) which was aimed to assess knowledge of postpartum depression among mothers at immunization clinics in selected primary healthcare centers in Mushin, Lagos revealed that the majority of the respondents had poor knowledge of postpartum depression, which shows that poor knowledge on postpartum depression is one of the factors that is likely associated with high prevalence rate among nursing mothers. The inability to identify postpartum depression when symptoms arise can have a negative effect on the mother and her baby, such as marital tension, vulnerability to recurrent psychiatric illness, social and emotional cognitive disorder for the babies, and in some cases, suicide (Akwa, 2015). The first step for early detection and diagnosis of postpartum depression is to identify mothers' knowledge on postpartum depression. There has been studies done to determine the prevalence of postpartum depression in Nigeria but only few has been done to determine the knowledge and attitude of nursing mothers towards postpartum depression. Therefore, the study aimed to determine the knowledge, attitude and prevalence of postpartum depression among mothers attending immunization clinics in Osogbo, Osun state.

MATERIALS AND METHODS

Study Area

The study was carried out in 8 health facilities in Osogbo, Osun state, Nigeria. Osogbo houses the Headquarters of both Osogbo Local Government Area (situated at Oke Baale Area of the city) and Olorunda Local Government Area (situated at Igbonna Area of the city).

Study Design and Study Population

This research was a descriptive cross-sectional study. The study population comprised of women within the female reproductive age 18-49years and who were also within 12months puerperium attending immunization clinics in Osogbo local government, Osun state. Nursing mothers who were ill/sick were excluded from the study.

Sampling Size Determination and Sample Size

The sample size used in the study was determined using the Cochran formula. The prevalence used for this study was 17.70% using the prevalence rate of postpartum depression in a study conducted in Osogbo, Osun state (Abiodun, Abiodun & Akinsulore, 2018).

Using Cochran Formula p= 0.177

$$N = \frac{z^2 pq}{d^2}$$

Where:

z= Standard normal deviation of 1.96

d= desired degree of accuracy set at 0.05

P= the estimated proportion (prevalence/ incidence) = 17.70%

q= 1-P = 1-0.177

= 0.823

$$N = \frac{1.96^2 X\ 0.823\ X\ 0.177}{0.05^2}$$

N=223.84

However, correcting for 10% loss or incomplete questionnaire the sample size calculated was divided by 0.9 (expected percentage of complete response) to make the total sample size 250.

Sampling Technique

Multistage sampling was used for this study.

Stage 1: There are two local governments in Osogbo: Osogbo and Olorunda local government. Simple random sampling was used to select one of the two local governments and Osogbo local government was picked.

Stage 2: The health facilities in the selected local government were stratified into primary, secondary and tertiary health facility

Stage 3: Simple random sampling was used to select facilities at each level of stratum based on proportional allocation

Stage 4: Systematic random sampling based on proportional allocation was used to select participants for the study.

Scoring Method

The EPDS was used to determine the prevalence rate of Postpartum depression among the nursing mothers using a cut off score of ≥13-30. Those who had scores of less than 13 were categorized as PPD absent while those with scores greater than or equal to 13 as PPD present. The respondents' overall knowledge of postpartum depression were measured on a 21-point reference scale which was further categorized into poor (≤7), fair (≥ 7-14), and good (≥ 14-21). The total score for attitude was measured on 27-point reference scale, categorized into poor, moderate and good attitude towards postpartum depression

Data Collection Method

An interviewer-administered questionnaire was used to collect information on the knowledge, attitude and prevalence of postpartum depression from mothers attending immunization clinics in Osogbo, Osun state. Questions in the questionnaire were formulated from past literature related to the study. One standardized tool was used (EPDS). The Edinburgh Postnatal Depression Scale was used to measure the prevalence of Postpartum Depression. The questionnaire was first pretested among 25 women attending health care centers in Ikenne local government, Ogun state to give room for correction and modification of the questionnaire. Two research assistants capable of speaking English and Yoruba fluently were employed and trained to administer the questionnaires to nursing mothers with full confidentiality maintained.

Data Analysis

Data was analyzed using the IBM SPSS version 21.0 to descriptively and statistically determine the knowledge, attitude and prevalence of postnatal depression among nursing mothers attending immunization clinics in Osogbo, Osun state. In addition, data was presented, organized and summarized numerically using Tables and Charts. The descriptive statistics and inferential statistics were used to give statistical responses and association between variables.

Ethical Consideration

Ethical approval was obtained from the Osun State Health Research Ethics Committee (OSHREC). Informed consent was taken from each of the respondents. Information obtained from the participants was kept confidential and participants' identities were not disclosed at any time during the study. Respondents were recruited based on their willingness to participate in the study. The participants had the choice of taking part in the study or not. Participants who voluntarily consented to be part of the study were well briefed about the risks and benefits of

participating in the study. Also, the instrument did not require the participants to write information that will disclose their names.

RESULTS

The independent variables used in the study were the sociodemographic characteristics, knowledge and attitude towards postpartum depression. The dependent variable used in the study was the prevalence of postpartum depression using the EPDS scale.

Table 1: Socio-demographic Characteristics of the Respondents

Socio-demographic variables for consideration	Respondents in this study; N=250	
	Frequency(n)	Percentage (%)
Age (in years) mean age = 29.3 ± 5.4 years.		
18-28	121	48.4
29-39	116	46.4
40-50	13	5.2
Marital Status		
Single	24	9.6
Married	214	85.6
Divorced	10	4.0
Widowed	2	0.8
Type of Family		
Monogamous	218	87.2
Polygamous	32	12.8
Ethnicity		
Igbo	17	6.8
Yoruba	228	91.2
Hausa	4	1.6
Other	1	0.4
Religion		
Christianity	109	43.6
Islam	136	54.4
Traditional	5	2.0
Educational Attainment		
Non-formal	14	5.6
Primary	32	12.8
Secondary	58	23.2
Tertiary	146	58.4
Occupation		
Civil servant	25	10.0
Self-employed	124	49.6
Trader	66	26.4
Artisan	19	7.6
Full housewife	16	6.4

Number of Children		
One	94	37.6
Two	76	30.4
>Two	80	32.0
Previous History of Postpartum Depression		
Yes	37	14.8
No	213	85.2

Respondents' Knowledge of Postpartum Depression

Less than half (43.2%) of the respondents correctly described postpartum depression as being sad and unhappy after childbirth. The respondents correctly stated that being unhappy for more than 7 days after child birth (57.6%) and being sad or miserable for more than a week after child birth (32.8%) were the signs and symptoms of postpartum depression. The respondents correctly stated the following as risk factors for postpartum depression: unplanned pregnancy (26%); poor support from spouse and family (50.4%); giving birth through Cesarean Section (26%); and previous history of postpartum depression (22.8%). Less than half (43.6%) of the respondents correctly stated that postpartum depression was caused by hormonal imbalance. Majority (70%) of the respondents reported that postpartum depression could be treated in the hospital (See Table 2).

Furthermore, the respondents' knowledge of postpartum depression measured on a 21-point rating scale showed a mean score of 10.3± 3.9. Also, the respondent's level of knowledge of postpartum was divided into three. Those who scored less than equal to 7 (≤ 7) were regarded as having poor level of knowledge, those who scored greater than 7 to 14 (> 7-14) were regarded as having fair knowledge, and those who scored greater than 14-21 (.>14-21) were regarded as having good knowledge of postpartum depression. Most (60%) of the respondents had fair knowledge of postpartum depression while above a quarter (26.4%) of the respondents had poor knowledge of postpartum depression (See Table 3).

Table 2: Respondents' Knowledge of Postpartum Depression

Items	Respondents in this study = 250	
	Yes (%)	No (%)
Understanding of postpartum depression**		
Being happy after birth Yes	150(60.0)	100(40)
Being sad and unhappy after birth	108(43.2)*	142(56.8)
being well after child birth	115(46.0)	135(54.0)
It is a normal phase all women should go through	146(58.4)	104(41.6)
Signs and symptoms of postpartum depression**		
Laughing uncontrollably for more than 7 days	144(57.6)	106(42.4)
Being unhappy for more than 7 days	86(34.4)*	164(65.6)
Being sad or miserable for more than a week	82(32.8)*	168(67.2)
Having thoughts of harming oneself for more than a week	61(24.4)	189(75.6)
Risk-factors of postpartum depression **		
Unplanned Pregnancy	65(26.0)*	185(74.0)
Poor support from spouse and family	126(50.4)*	124(49.6)
Giving birth through Cesarean section	65(26.0)*	185(74.0)
Previous history of depression	57(22.8)*	193(77.2)
Giving birth through vagina delivery	77(30.8)*	173(69.2)
Cause of postpartum depression**		
It is caused by witches and wizards	71(28.4)	179(71.6)
It is caused by hormonal imbalance	109(43.6)*	141(56.4)
It is a curse by the gods	68(27.2)	182(72.8)
It is caused by eating salty foods	107(42.8)	143(57.2)
Depression can be treated in **		
Church/Mosque	98(39.2)	152(60.8)
Hospital	175(70.0)*	75(30.0)
Chemist	56(22.4)	194(77.6)
Traditional Birth Attendants	64(25.6)	186(74.4)

**Multiple response; *Correct responses

Table 3: Proportion of Respondents' Level of Knowledge of Postpartum Depression

Total Obtainable Score (21)	Respondents in this study; N=250	
	Frequency	Percentage (%)
Poor (≤ 7)	66	26.4
Fair (> 7 -14)	150	60.0
Good (>14-21)	34	13.6

Respondents Attitude towards Postpartum Depression

Less than half (30.8%) of the respondents reported that they always educate themselves to know issues that could arise after childbirth. More than half (58.8%) of the respondents reported that they always rest as required to prevent postpartum depression. Most (66.4%) of the respondents reported that they eat regularly to prevent having postpartum depression. Less than half (35.6%) of the respondents reported that they always tell people around them when they are frustrated, sad and overwhelmed. More than half (52.8%) of the respondents reported that they always complained to doctors when they were having difficulties with themselves and the babies. More than half (57.2%) reported that they always have support from their family, friends and household during the postpartum phase. Less than half (27.2%) of the respondents reported that they always go for screening once they notice signs and symptoms of postpartum depression. Half (50%) of the respondents reported that they always visit the postnatal clinics for regular checkups. Few (23.2%) of the respondents reported that they exercise every day to prevent having postpartum depression (See Table 4)

Furthermore, the respondents attitude towards postpartum depression was measured on a 27-point rating scale. The respondents attitude toward postpartum depression was categorized into three: poor ($\leq$ 9), moderate (< 9- 18) and good (< 18-27). More than half (52.4%) of the respondents had a moderate attitude towards postpartum depression (See Table 5).

Table 4: Respondents Attitude towards Postpartum Depression

Variables (n=250)	Respondents in this study; N=250			
	Not at All (%)	Sometime (%)	Often (%)	Always (%)
I educate myself to know issues that can arise after childbirth	113(45.2)	43(17.2)	21(8.4)	73(29.2)*
I sleep as needed to prevent myself from having postpartum depression	28(11.2)	40(16.0)	35(14.0)	147(58.8)*
I do not eat regularly during my Postpartum phase	166 (66.4)*	29(11.6)	25(10.0)	30(12.0)
I tell people around/close me when I am frustrated, sad and overwhelmed	61(24.4)	65(26.0)	35(14.0)	89(35.6)*
I complain to doctors when I am having difficulties with myself and the baby	49(19.6)	36(14.4)	33(13.2)	132(13.2)*
I have support from my family/friends/ household help during the postpartum phase	42(16.8)	29(11.6)	36(14.4)	143(57.2)*
I go for screening once I notice signs and symptoms of postpartum depression	120(48.0)	40(16.0)	22(8.8)	68 (27.2)*
I visit the postnatal clinics for regular checkups	55(22.0)	34(13.6)	36(14.4)	125(50.0)*
I exercise every day during my postpartum period to prevent myself from having postpartum depression	104(41.6)	52(20.8)	36(14.4)	58(23.2)*

*Expected Responses

Table 5: Proportion of Respondent's Attitude towards Postpartum Depression

Total Obtainable Score (27)	Respondents in this study; N=250	
	Frequency	Percentage (%)
Poor (≤ 9)	41	16.4
Fair (> 9 -18)	131	52.4
Good (>18-27)	78	31.2

Prevalence of Postpartum Depression

The prevalence of postpartum depression in this study was 33.6% (See Figure 1). There was no statistically significant relationship between the age, marital status, type of family, ethnicity, religion, occupation, educational attainment, level of income of the mother, and parity. This study also revealed that there was no significant association between the level of income of the spouse and highest level of education of the spouse (See Table 6). However, there was a statistically significant relationship between previous history of postpartum depression and the prevalence of postpartum depression ($P = 0.007$). There is also a statistically significant relationship between the spouse occupation and prevalence of postpartum depression ($P = 0.02$). The study also revealed that there was no statistically significant association between the spouse income, education of the spouse and prevalence of postpartum depression. The factors that were statistically significant were then subjected into a binary logistic regression to determine which factors best predict postpartum depression. It was revealed that the previous history of depression best predicts the postpartum depression (odds ratio = 2.57, CI= 1.28-5.18, P= 0.008) (See Table 8). There was no statistically significant association between the knowledge, attitude of the respondents and prevalence of postpartum depression (See Table 7).
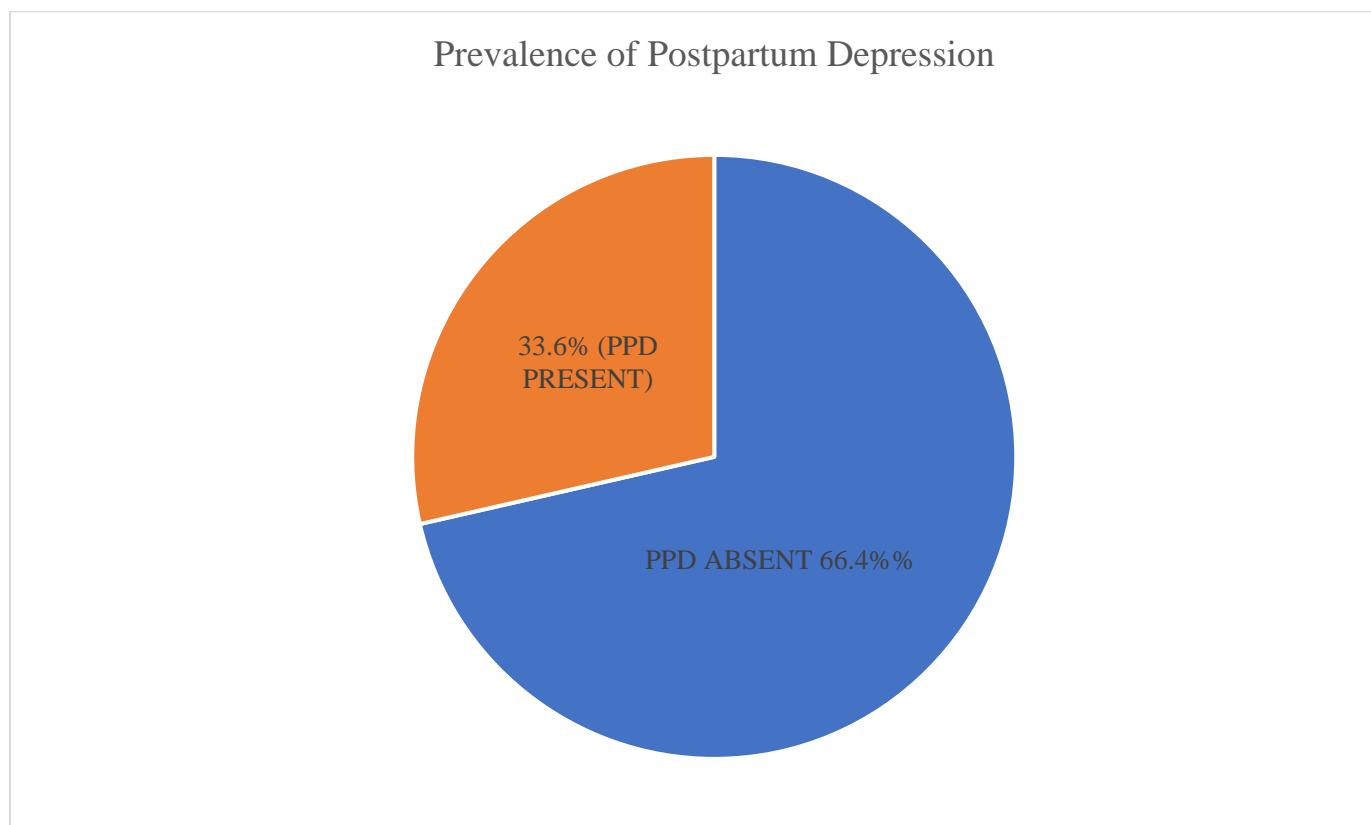
Figure 1: Prevalence of Postpartum Depression.

Table 6: Association between Sociodemographic data of the Respondents and Postpartum Depression

Sociodemographic Variables	PPD ABSENT	PPD PRESENT	(X^2)	P-value
Age (in years)				
18-28yrs	85(70.2%)	36(29.8%)		
29-39yrs	74(63.8%)	42(36.2%)	2.08	0.35
49-49yrs	7(53.8%)	6(46.2%)		
Baby's Age				
1-6weeks	63(70%)	27(30%)		
7-11weeks	19(73.1%)	7(26.9%)	1.72	0.63
12-24weeks	55(62.5%)	33(37.5%)		
25-52weeks	29(64.4%)	16(35.6%)		
Marital Status				
Single	15(62.5%)	9(37.5%)		
Married	142(66.4%)	72(33.6%)	0.56	0.76

Separated/Divorced/Widowed	9(75.0%)	3(25.0%)		
Ethnicity				
Igbo	12(70.6%)	5(29.4%)		
Yoruba	150(65.8%)	78(34.2%)	0.81	0.84
Hausa	3(75.0%)	1(25.0%)		
other	1(100.0%)	0(0%)		
Religion				
Christian	73(67%)	36(33%)		
Muslim	89(65.4%)	47(36.4%)	0.49	0.78
Traditional	4(80%)	1(20%)		
Type of family				
Monogamous	151(65.7%)	79(34.3%)	0.72	0.39
Polygamous	15(75%)	5(25%)		
Occupation				
Civil-servants	15(60%)	10(40%)		
Self-employed	75(60.5%)	49(35.5%)		
Trader	49(74.2%)	17(25.8%)	7.59	0.18
Artisan	15(78.9%)	4(21.1%)		
Full Housewife	2(50%)	2(50%)		
Others	10(83.3%)	2(16.7%)		
Educational Attainment				
Non-formal	9(64.3%)	5(35.7%)		
Primary school certificate	21(65.6%)	11(34.4%)	0.63	0.89
Secondary School Certificate	41(70.4%)	17(29.3%)		
Tertiary Education	95(65.1%)	51(34.9%)		
Level of income				
≤50,000	144(66.7%)	72(33.3%)		
51000-100000	20(64.5%)	11(35.5%)	0.06	0.97
101000-250000	2(66.7%)	1(33.3%)		
Number of Children				
One	65(69.1%)	29(30.9%)		
Two	49(64.5%)	27(35.5%)	0.52	0.77
More than 2	52(65.0%)	28(35.0%)		
Previous History of Postpartum				
Depression	18(47.4%)	20(52.6%)	7.28	0.007*
Yes	148(69.8%)	64(30.2%)		
No				

Table 7: Association between sociodemographic data of spouse, knowledge, attitude and prevalence of postpartum depression

Variables	PPD ABSENT	PPD PRESENT	(X^2)	P-value
Level of income of the spouse				
≤#50000	101(69.7%)	44(30.3%)		
≥51000-100,000	37(60.7%)	24(39.3%)	2.00	0.57
#101000-200000	19(61.3%)	12(38.7%)		
#200000-#1000000	9(69.2%)	4(30.8%)		
Occupation of the Respondents spouse	44(68.8%)	20(31.3%)		
Civil servant	71(58.2%)	51(41.8%)	11.95	0.02*
Self-employed	37(77.1%)	11(22.9%)		
Trader	11(100%)	0(0%)		
Artisan	3(60%)	2(40%)		
Others				
Educational level of the spouse				
Non-formal	6(60%)	4(40%)		
Primary	11(61.1%)	7(3.89%)	3.26	0.35
Secondary	42(76.4%)	13(23.6%)		
Tertiary	107(64.1%)	60(35.9%)		
Knowledge of the respondents				
Poor Knowledge	49 (74.2%)	17(25.8%)	2.49	0.29
Moderate Knowledge	95(63.3%)	55(36.7%)		
Good Knowledge	22 (64.7%)	12 (35.3%)		
Attitude of the respondents				
Poor Attitude	26(63.4%)	15 (36.6.6%)	0.25	0.88
Moderate Attitude	87 (66.4%)	44 (33.6%)		
Good Attitude	53 (67.9%)	25 (32.1%)		

Table 8: Predictors of Postpartum Depression

Variables	Odd Ratio	P value	Lower CI	Upper CI
Previous History of Postpartum Depression	2.57	0.008*	1.28	5.18
Occupation of the respondents spouse	0.82	0.18	0.614	1.09

DISCUSSION

The prevalence of postpartum depression is high (33.6%) using the Edinburgh Postnatal Depression Scale. This result is similar to a cross-sectional study conducted to determine the prevalence and predictors of postpartum depression among postnatal women in Eti-Osa Local Government Area of Lagos state which revealed the prevalence rate using the EPDS to be 35.6% (Adeyemo, Oluwole, Kanma-Okafor, Izuka & Odeyemi, 2020). Also, a study done by Agbaje, Anyanwu, Umoke and Iwagwu (2019) revealed the prevalence rate to be 34.6%. Similar study by Chinawa et al. (2016) revealed the prevalence of PPD to be 22.9%. However, this study is at variance with the results of Obioha et al. (2021), whose prevalence rate is more than average (52%).

The finding of this study revealed that there is no significant association between the age of the respondents, level of education of the respondents, monthly income, ethnicity, religion and type of family. This finding corroborates with the results of Sulyman & Dattijo (2016) and Adeyemo et al. (2022). This study revealed that there is no statistically significant association between the marital status and prevalence of depression. This finding corroborates the result of Adeyemo et al. (2022) where they reported no association. However, the finding differs from the result of Obioha et al. (2021), where they reported a statistically significant association. This study revealed that previous history of postpartum depression was the best predictor of PPD. However, there is no statistically significant association between the knowledge and attitude towards postpartum depression and prevalence of postpartum depression.

CONCLUSION AND RECOMMENDATIONS

In conclusion, the nursing mothers had fair knowledge of postpartum depression and moderate attitude towards postpartum depression and the prevalence rate of postpartum depression was 33.6%. There was a statistical association between previous history of depression and prevalence of postpartum depression. Those who do not have a previous history of postpartum depression were 2.7 times more likely to develop postpartum depression. There was a statistical association between the spouse occupation and prevalence of postpartum depression. This study revealed that mothers had fair knowledge on postpartum depression, it is therefore recommended that health education should be incorporated into the antenatal and postnatal care policy by the government as this will enlighten the nursing mothers on postpartum depression. Screening methods should also be applied early in the postpartum period for early detection and treatment of the condition. Also, the government should implement policies on support programs for postpartum depression through the media as this would promote awareness and recognition of the condition.

Conflict of Interest

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