Knowledge, Attitude and Prevalence of Postpartum Depression among Postnatal Mothers in Southwest Nigeria

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Summary

BACKGROUND

Postpartum depression is one of the serious psychiatric morbidities of women of childbearing age and constitutes a significant public health problem globally. This study was carried out among postnatal mothers attending immunization clinics in three Primary Health Centers in Surulere, Lagos, Nigeria.

MATERIALS AND METHODS

A descriptive cross-sectional survey was used to assess the knowledge, attitude and prevalence of postpartum depression. Data were collected using structured, interviewer-administered questionnaires. Two standard tools; Patient Health Questionnaire-2 and Patient Health Questionnaire-9 were used to assess the prevalence and severity of postpartum depression respectively. Data were analysed using IBM SPSS Statistics version 20.

RESULTS

A total of 300 postnatal mothers were recruited in the study. Only 6.0% had good knowledge of postpartum depression and only 11.0% of the respondents had a good attitude towards postpartum depression. The prevalence of postpartum depression in this study was 52.3%. Marital status was a significant predictor of postpartum depression (AOR 4.92 CI 1.55 – 15.64)

CONCLUSION

Poor knowledge of postpartum depression is common and maternal depression does exist in our environment. Education of the general public and pregnant women by government organizations and health workers, support programmes and mental health policy implementation will help reduce the burden of postpartum depression.

Keywords: Knowledge, Attitude, Prevalence, Postpartum Depression, Nigeria

Introduction

The postnatal period is one of the most beautiful phases in a woman's life, filling her with the joy of motherhood and the responsibility to nurture a new living being. Women undergo various physical and mental changes during their postnatal period and as such; may often be in a vulnerable state of mind. However, some women are not able to cope with the emotional upsurges during their postnatal period and this may result in depressive episodes or mood disorders amongst them [1].

These mood disorders may present in form of postpartum affective illnesses [2]. There

are three common forms of postpartum affective illnesses and they include baby blues, postpartum depression and postpartum psychosis [2, 3]. Postpartum depression falls in the middle of the spectrum, occurring in 10% to 15% of postpartum women and presenting with a range of mild to severe depressive symptoms [2, 3, 5]. Postpartum depression can be defined as a mood disorder that affects women after childbirth with an onset of symptoms during the first four weeks after delivery and may linger through the first postnatal year if left untreated; although women remain at risk for developing depression for several months following delivery [6]. Symptoms of Postpartum depression include feelings of extreme sadness, indifference and/or anxiety, as well as changes in energy, sleep, and appetite [1].

In a systematic review and meta-analysis which included 58 articles from all regions of the world, the incidence of postpartum depression was 12% while the overall prevalence of postpartum depression was 17% among healthy mothers without a prior history of depression, and who gave birth to healthy full-term infants [7].A systematic review and meta-analysis analysing studies carried out in Africa reported an overall pooled prevalence of postnatal depression of 16.84% [8]. There is a paucity of studies that report the national prevalence of postpartum depression in Nigeria. However, a study from southwest Nigeria reported a prevalence of 14.6% [9] a study from southeast Nigeria reported a prevalence of 22.9% [10] and a study from northern Nigeria reported a prevalence of 21.8% [11].

Nigeria has developed policies to improve the mental health of its people. Examples include The 1991 National Mental Health Policy, The 2013 National Policy for Mental Health Services Delivery and the National Mental, Neurological, and Substance Use Programme and Action Plan for Nigeria [12].The recommendations of the 2013 National Policy for Mental Health Services Delivery include; integrating mental health services into primary care, the establishment of psychiatric inpatient and outpatient services in every State general hospital and State University Teaching Hospital and also the establishment of inpatient and outpatient psychiatric services in every Federal Medical Centre and University Teaching Hospital [13]. The policy also commented on the role of other providers e.g. Public-Private Partnership, and collaboration with reproductive health programmes and with Traditional Birth Attendants to improve detection and treatment of postpartum depression. Public health education to improve community awareness of mental health issues was also one of the recommendations of the 2013 policy [13]. Though measures have been taken at implementing these recommendations, implementation has not been optimal. Integration of mental health services into primary level care has been very poor and not much is done about public education on mental health. Nigeria has fewer than 300 psychiatrists for a population of more than 200 million and little is being done to improve detection and treatment of post-partum depression [14].

Not getting help with caring for the baby, experiencing intimate partner violence, and having an unsupportive partner were identified as predictors of postpartum depression in a study conducted in Eti-Osa Local Government Area of Lagos State, Nigeria [15]. In a study carried out in Dhaka, Bangladesh, job involvement after child delivery, job loss due to pregnancy, history of miscarriage or stillbirth or child death, unintended pregnancy, management of delivery cost by borrowing, selling or mortgaging assets, depressive symptoms during pregnancy and intimate partner violence were identified as risk factors of postpartum depression [16].

Postpartum depression is associated with potentially adverse consequences for the mother, her infant and the family. Some of these adverse effects include impaired cognitive and emotional development of the child, marital discord, family violence as well as maternal suicide and infanticidal ideations [4]. The objective of this study was to assess the knowledge, attitude, prevalence of postpartum depression, among postnatal mothers in Southwest Nigeria. The study also examined factors associated with postpartum depression among mothers.

Materials and Methods

Study area

The study was carried out in the three primary health centres (PHCs) in Surulere local government area (LGA) of Lagos State, Nigeria. Surulere is a residential and commercial area and it is located on the mainland of Lagos with a landmass of about 27.1 km^2. Surulere has about 692,500 inhabitants, with a population density of 25,601 inhabitants per square kilometre [17].

Study design and study population

This was a cross-sectional study. The study population comprised of postnatal mothers who were within six months of puerperium and were attending immunization clinics in PHCs in Surulere LGA.

Sample size estimation

The minimum sample size used in this study was calculated using Cochran's formulae [18] n = Z^{2}pq/d^2, Where n= Minimum sample size, Z= Value of standardized normal deviate at 95% confidence interval (1.96), p= Prevalence of Maternal depression (22.9%) from a previous study [10], q= Proportion of failure given by 1-p, d= Tolerable margin of error (0.05). Using the above formula and adding 10% to account for improperly filled questionnaires, the calculated sample size was 300.

Sampling technique

A multistage sampling method was used to recruit postnatal mothers from immunization clinics in Surulere PHCs. The first stage involved the selection of three PHCs. Out of the five PHCs in Surulere LGA; three PHCs were selected through simple random sampling by balloting. The selected PHCs were: Coker-Aguda PHC, Akerele PHC and Orile-Iganmu PHC. This was followed by the determination of the proportion of participants to be sampled from each PHC and the selection of participants. Out of the three PHCs selected, each PHC represented a stratum. A total of 758 postnatal mothers were seen in the three PHCs monthly and they represent the sampling frame, therefore; using stratified sampling proportionate allocation method, the sampling was as follows: In Akerele PHC, an average of 310 postnatal mothers were seen in the immunization clinic monthly, therefore, dividing the population size for Akerele (310) by the total sample frame (758) gives 0.409, then multiplying this (0.409) by the actual sample size for the study which is 300 we get 123. Therefore, a total of 123 postnatal mothers were interviewed in Akerele PHC. Similarly, Coker-Aguda PHC and Orile-Iganmu PHC receives monthly, an average of 285 and 163 postnatal mothers respectively; therefore, using the method described above, a total of 112 and 65 postnatal mothers were interviewed in Coker-Aguda and Orile-Iganmu PHCs respectively.

Consequently, a systematic sampling method was used to select study participants from each PHC. In Akerele PHC, 123 postnatal mothers were to be interviewed, but a total of 310 mothers were seen in the clinic monthly, therefore, dividing the population size (310) by the sample size (123), every third postnatal mother on the immunization register was selected for an interview until a total of 123 mothers have been interviewed. The first

respondent was sampled from the first three postnatal mothers on the register through simple random sampling by balloting. The same method was applied to Coker-Aguda and Orile-Iganmu PHCs where every second and third postnatal mother on the immunization register were selected for interview respectively and the first respondent was selected through simple random sampling by balloting.

Data collection

A structured, interviewer-administered questionnaire was used for the data collection on the knowledge and attitude towards postpartum depression. The questionnaire was developed in English and was adapted from previous studies [19, 20, 21] Patients Health Questionnaire-2 (PHQ-2) [13] and Patients Health Questionnaire-9 (PHQ-9). Questions from the Patients Health Questionnaire-2 (PHQ-2) [22] assessed the prevalence of postpartum depression. Questions from the Patients Health Questionnaire-9 (PHQ-9) which is a higher screening tool were used to determine the severity of depression [23, 24, 25].

The questionnaires were pre-tested among twenty postnatal mothers recruited from Layeni Primary Health Center in Ajeromi Ifelodun Local Government Area, Lagos State, to give room for corrections and modification of the questionnaire. Three research assistants with minimum educational qualification of O'level degree were recruited for the research after a one-day training on study protocols moderated by the researcher. They were trained on how to administer the questionnaire with full confidentiality maintained, after which they assisted in data collection.

Data management

During data collection, random checks were done by the principal researcher to ensure the questionnaires were being correctly filled. Each questionnaire filled had unique identifiers and names were not collected. Data was coded.

Names and labels were given to describe variables and their values. A codebook was made with an explanation or definition of codes. Data was entered into Ms excel spread sheets and cleaning done to minimize entry errors. Data was saved in a password protected file and a password protected computer. Password was known to only the four authors, who alone had access to the data. The questionnaires were kept confidentially and will be kept until 7 years after the study.

Data analysis

Data was imported on and analysed using IBM SPSS Version 20.0 (Armonk, NY: IBM Corp). Frequency and proportions were determined with frequency tables generated. Chi-square test and Fisher's exact test, as appropriate were used for the bivariate analysis to test the association between socio-demographic characteristics (age, marital status, religion, ethnicity, education, employment,) reproductive characteristics (number of children, means of delivery of current baby) knowledge of postpartum depression, attitude towards post-partum depression and Postpartum depression. Statistically significant explanatory variables (age group, marital status) were keyed into a logistic regression model to determine predictors of postpartum depression. The level of significance was set at 5%. The multicollinearity test was not done.

Scoring method

The total score for knowledge was calculated by adding the scores of each of the thirty-one questions designed to test knowledge. A correct answer was assigned 1 while a wrong answer was assigned 0. The highest attainable score was 31 and the lowest was 0. This was converted to percentages. Scores of 0% to 33.2% were graded as 'Poor knowledge of postpartum depression, scores of 33.3% to 66.2.2% were graded as 'moderate knowledge of postpartum depression and scores of 66.3% to 100% were

graded as 'Good knowledge of postpartum depression. Attitude statements were on a 5 point Likert scale and the scores were interpreted on a scale of 1 to 5. The minimum and maximum attainable score was 12 and 60, respectively. Scores between 12 and 27 were graded as Poor attitude; 28 and 43 were graded as Moderate attitude; and 44 and 60 were graded as Good attitude towards postpartum depression. The scoring for the prevalence of postpartum depression was according to the standard screening tool (PHQ-2) [22].

Table 1: Socio-Demographic Characteristics of Respondents

Variable	Frequency	Percentage
Age (Years)		
≤ 20	29	9.7
21-30	142	47.3
31-45	129	43.0
Mean ± SD	29.62±6.66	
Marital status		
Single	22	7.3
Married	273	91.0
Divorced	5	1.7
Religion		
Christian	191	63.7
Islam	109	36.3
Nationality		
Nigerian	296	98.7
Others	4	1.3
Ethnicity		
Yoruba	165	55.0
Igbo	114	38.0
Hausa	1	0.3
Others	20	6.7
Education		
None	1	0.3
Primary	46	15.3
Secondary	74	24.7
Tertiary	179	59.7
Employment		
Employed	178	59.3
Unemployed	123	40.7
Occupation (n=178)		
Highly skilled	37	20.8
Skilled	54	30.3
Semi-Skilled	43	24.2
Unskilled	44	24.7
Number of Children		
1	125	41.7
2	85	28.3
3	56	18.7
4	24	8.0
Above 4	10	3.3
Means of Delivery		
Vaginal delivery	234	78.0
Caesarean delivery	66	22.0

Any respondent that answered yes to any or both of the questions was scored as being depressed. The scoring for the severity of postpartum depression was according to the standard screening tool (PHQ-9) used [23, 24, 25]. The total score was calculated by adding the scores of each of the nine items. Scores between 1 and 4 suggests minimal depression, 5 – 9 = mild depression, 10 – 14 = moderate depression, 15 – 19 = moderately severe depression and 20 – 27 = severe depression.

Table 2: Knowledge of Postpartum Depression

Variable	Frequency	Percentage
	n=300	
Heard of PPD	292	97.3
	n=292	
PPD is a health problem	209	71.6
PPD is a Mood Disorder	281	96.2
Possession by Evil Spirit is a cause of PPD	12	4.1
PPD is a weakness of character	21	7.2
Age is a risk factor for PPD	38	13.0
Family History is a risk factor for PPD	185	63.4
Maternal Use of Alcohol is a risk factor for PPD	28	9.6
Unemployment is a risk factor for PPD	49	16.8
Stressful Life Events is a risk factor for PPD	105	36.0
Poor Marital Relationships is a risk factor for PPD	76	26.0
Caesarean Birth is a risk factor for PPD	60	20.5
Depressed mood is a symptom of PPD	84	28.8
Feeling sad, hopeless or empty are symptoms of PPD	106	36.3
Isolation is a symptom of PPD	11	3.8
Withdrawal is a symptom of PPD	10	3.4
Poor sleep or oversleeping are symptoms of PPD	125	42.8
Crying more often than usual is a symptom of PPD	175	59.9
Having trouble concentrating, remembering details or making decisions are symptoms of PPD	49	16.8
PPD can be detected early	72	24.7
PPD can be treated when detected	185	63.4
PPD can be treated by Drug Therapy	150	51.4
PPD can be treated by Psychotherapy	84	28.8
Rendering physical help or assistance can help reduce symptoms of PPD	69	23.6
Symptoms can reduce after Drug Therapy	149	51.0
Relapse can occur after Treatment	54	18.5
PPD can be prevented	146	50.0
Reduced stress can help prevent PPD	64	21.9
Avoiding alcohol can help prevent PPD	28	9.6
Providing employment opportunities can help prevent PPD		
A good marital relationship can help prevent PPD	33	11.3
Good social support can help prevent PPD	76	26.0
	n = 300	
Overall Knowledge		
Good knowledge	18	6.0
Moderate knowledge	131	43.7
Poor knowledge	151	50.3

Ethical consideration

Ethical approval was obtained from the Health Research and Ethics Committee (HREC) of the Lagos University Teaching Hospital, with reference number ADM/DCST/HREC/APP/1661. Written informed consent was obtained from each participant. Names of respondents were not included and information obtained remained confidential and was used only for the research.

Results

The majority of mothers were between the ages of 21 to 30 (47.3%). The majority were married or cohabiting (91.0%). Their mean age was 29.62 ± 6.66. About 60% had tertiary education. A larger proportion of the women (63.7%) were Christians. About sixty per cent were employed. Most (58.3%) were multiparous and the highest proportion (78%) had vaginal deliveries (**Table 1**). Out of 292 participants (97.3%) who had heard of postpartum depression, the majority of the respondents (71.6%) recognised postpartum depression as a health problem. About sixty per cent of the respondents recognised family history of depression as a risk factor whereas 26% recognised poor marital relationship as a risk factor.

The most recognised symptom was crying more than usual whereas, isolation and withdrawal were the least recognised symptoms. About sixty per cent of the respondents knew that postpartum depression can be treated, whereas, 51.4% said it can be treated by the use of drugs.

Table 3: Attitude towards Postpartum Depression

Variables (n=292)	Strongly Agree n(%)	Agree n(%)	Neutral n(%)	Disagree n(%)	Strongly Disagree n(%)
Sign of Personal weakness	8(2.7)	17(5.8)	23(7.9)	179(61.3)	65(22.3)
All postnatal mothers are at risk	8(2.7)	141(48.3)	19(6.5)	104(35.6)	20(6.9)
Possession by an evil spirit	5(1.7)	8(2.7)	14(4.8)	68(23.3)	197(67.5)
Depressed mothers are unpredictable	37(12.7)	207(70.9)	31(10.6)	17(5.8)	0(0.0)
Depressed mothers are dangerous to live with	12(4.1)	93(31.9)	43(14.7)	113(38.7)	31(10.6)
Will avoid a depressed mother	6(2.1)	27(9.3)	51(17.5)	151(51.7)	57(19.50
Would be depressed if I get close to a depressed mother	1(0.3)	1(0.3)	1(0.3)	104(35.6)	185(63.5)
I will employ a mother who had been depressed	22(7.5)	81(27.7)	59(20.2)	121(41.4)	9(3.1)
I will vote a mother who had been depressed into a public office	3(1.0)	86(29.5)	56(19.2)	130(44.5)	17(5.8)
Will advise a depressed mother to see a doctor	57(19.5)	146(50.0)	29(9.9)	56(19.2)	4(1.4)
I am at risk of developing postpartum depression	30(10.3)	109(37.3)	25(8.6)	94(32.2)	34(11.6)
I will see a doctor if I happen to be depressed	120(41.1)	86(29.5)	49(16.8)	31(10.6)	6(2.1)
Overall Attitude					
Poor attitude	1(0.3)				
Moderate attitude	266(88.7)				
Good attitude	33(11.0)				

Half (50.0%) of the respondents said that postpartum depression can be prevented but only 26% recognized good social support as one of the preventive measures. Only 6.0% of respondents had good knowledge of PPD. (**Table 2**).

Over half of the respondents (61.3%) disagreed that postpartum depression was a sign of personal weakness, but on the contrary, 70.9% of the respondents agreed that depressed mothers are unpredictable. Also, 29.5% of the respondents agreed to vote for a woman who has been depressed in a public position. Ten per cent disagreed to see a doctor if they happen to experience postpartum depression. Only (11.0%) of respondents had a good attitude towards PPD. (**Table 3**).

Over half, (52.3%) of the respondents said yes to either or both of the questions to screen for depression and were classified as having postpartum depression. Of those that were depressed, 64.3% reported having little interest or pleasure in doing things previously enjoyed, on several days over the preceding two weeks and 26.8% reported feeling down, depressed, empty or hopeless on several days, over the preceding two weeks. About 12% reported feeling bad about themselves for several days over the preceding two weeks but none of the respondents had thought of harming themselves or their baby over the preceding two weeks. Most of the women who were depressed had minimal depression (57.3%) (**Table 4**).

Table 4: Prevalence and Severity of Postpartum Depression

Variable	Frequency	Percentage
Felt down or depressed over the past two weeks		
Yes	63	21.0
No	237	79.0
Had little interest or pleasure in doing things previously enjoyed over the past weeks		
Yes	94	31.3
No	206	68.7
Has Postpartum Depression		
Yes	157	52.3
No	143	47.7
Little interest or pleasure in doing things previously enjoyed		
Not at all	19	12.1
Several days	101	64.3
More than half the days	33	21.0
Nearly everyday	4	2.6
Feeling down, depressed, empty or hopeless		
Not at all	93	59.2
Several days	42	26.8
More than half the days	18	11.5
Nearly everyday	4	2.6
Trouble falling or staying asleep even when baby is sleeping or sleeping too much		
Not at all	31	19.8
Several days	57	36.3
More than half the days	33	21.0
Nearly everyday	36	22.9
Feeling tired or having little energy		
Not at all	37	23.6
Several days	81	51.6
More than half the days	30	19.1
Nearly everyday	9	5.7

There was a statistically significant association between age and postpartum depression and also between marital status and postpartum depression. A higher proportion of mothers less than 20 years of age had postpartum depression (72.4%) when compared to other age groups. A higher proportion of respondents who were not married had postpartum depression (**Table 5**).

Marital status was a predictor of postpartum depression. Women not married were 4.92 times more likely to undergo postpartum depression than married women (AOR 4.92 CI 1.55 – 15.64) (**Table 6**).

Discussion

This study assessed the knowledge, attitude and prevalence of postpartum depression among mothers seen in immunization clinics in Surulere PHCs. In the assessment of the respondent's knowledge of postpartum depression, 80% had poor knowledge of post-partum depression.

This finding of poor knowledge of postpartum depression among the respondents reflects an unmet need for mental health literacy particularly postpartum depression among Nigerian postnatal mothers and it's in line with a previous study by Gureje *et al* [26] which reported a widespread ignorance and misconceptions about mental illnesses especially depression among adults in Nigeria.

The majority (96.2%) of the respondents in this study identified postpartum depression as a mood disorder, 7.2% said that postpartum depression was a weakness of character and 4.1% termed the disorder as a result of possession by an evil spirit.

Table 4: Prevalence and Severity of Postpartum Depression Continued

Variable	Frequency	Percentage
Poor appetite or eating too much		
Not at all	114	72.6
Several days	36	22.9
More than half the days	4	2.6
Nearly everyday	3	1.9
Feeling bad about yourself that you are a failure or a bad mother to your baby		
Not at all	134	85.4
Several days	20	12.7
More than half the days	3	1.9
Trouble concentrating on things such as reading a newspaper or watching television		
Not at all	144	91.7
Several days	12	7.6
More than half the days	1	0.6
Moving or speaking so slowly that other people have noticed or being so fidgety or restless that you have been moving around a lot more than usual.		
Not at all	131	83.4
Several days	21	13.4
More than half the days	5	3.2
The thought of harming myself or my baby has occurred to me		
Not at all	157	100.0
Severity of PPD (n =157)		
Minimal depression	90	57.3
Mild depression	61	38.9
Moderate depression	6	3.8

These findings are comparable to the findings from an Indian study [27] which reported that the majority of their respondents did not believe that clinical depression results from possession by an evil spirit. However, some findings from this same Indian study [27] refute the findings from this current study.

Table 5: Association between Socio-Demographic Characteristics, Knowledge, Attitude of Respondents and Postpartum Depression

Variables	Has PPD		X^2	p-value
	Yes (n=157)	No (n=143)		
Age (Years)				
≤ 20	21(72.4)	8(27.6)	6.02	0.049
21 – 30	75 (52.8)	67(47.2)		
31 – 45	61(47.3)	68(52.7)		
Marital status				
Married	133(48.7)	140(51.3)	15.89	<0.001$_F^*$
Not married	24(88.9)	3(11.1)		
Religion				
Christian	90(47.1)	101(52.9)	0.06	0.802
Islam	53(48.6)	56(51.4)		
Ethnicity				
Yoruba	77(46.7)	88(53.3)	0.27	0.874
Igbo	55(48.2)	59(51.8)		
Hausa/others	11(52.4)	10(47.6)		
Education				
≤Secondary	55(45.8)	65(54.2)	3.39	0.066
Tertiary	102(56.7)	78(43.3)		
Employment				
Employed	87(48.9)	91(51.1)	0.26	0.612
Unemployed	56(45.9)	66(54.1)		
Number of Children				
1	63(50.4)	62(49.6)	6.82	0.146$_F$
2	53(62.4)	32(37.6)		
3	28(50.0)	28(50.0)		
4	10(41.7)	14(58.3)		
Above 4	3(30.0)	7(70.0)		
Means of Delivery of Current Baby				
Vaginal delivery	120	114	0.47	0.492
Cesarean section	37	29		
Knowledge of PPD				
Poor Knowledge	78(51.7)	73(48.3)	5.285	0.071
Moderate Knowledge	74(56.6)	57(43.5)		
Good Knowledge	5(27.8)	13(72.2)		
Attitude towards PPD				
Poor Attitude	1(100.0)	0(0.0)	0.872$_F$	1.000$_F$
Moderate Attitude	139(42.3)	127(47.7)		
Good Attitude	17(51.5)	16 (48.5)		
*p-values indicate significant p-values (≤ 0.05); F indicates p-values from Fisher's exact test				

Table 6: Predictors of Post-Partum Depression

	AOR	Lower CI	Upper CI	p-value
Age Group (Years)				
≤ 20	1.62	0.61	4.34	0.337
21 – 30	1.18	0.73	1.90	0.514
31 – 45	Ref			
Marital status				
Married	Ref			
Not married	4.92	1.55	15.64	**0.007**

The Indian study reported that only 67.4% agreed with the position that maternal depression resulted solely as an individual weakness whereas, in this current study, only 7.2% agreed with this misconception.

In the assessment of the respondents' attitudes towards postpartum depression, only a tenth exhibited a good attitude towards postpartum depression. This finding is in contrast to a previous study in the US which reported a supportive attitude towards postpartum depression [28]. In our study, negative views towards postpartum depression include the belief that postpartum depression occurred as a result of possession by an evil spirit, postpartum depression reflects a weakness of character, and some respondents will avoid even basic social contacts with a depressed mother.

The prevalence of postpartum depression found in this study was 52.3% and this shows that postpartum depression does exist in our environment and it cuts across all age groups. This prevalence is much higher than the prevalence rate of 22.9% obtained by Chinawa *et al.* [10] in Enugu, Nigeria but similar to the prevalence of 50.8% obtained in a study in the Democratic Republic of Congo [29]. Also, the prevalence from this current study is higher than the prevalence from two other Nigerian studies [30, 31] among postnatal mothers in Northeastern Nigeria and that from a Jordanian study [32] among women which reported prevalence rates of 22.4%, 47.5% and 22% respectively. Some previous studies [10, 33, 34] reported prevalence rates of 5% to 25% which is much lower than the prevalence obtained in this study. The variation in prevalence between this study and other previous studies may be due to methodological and geographic differences or variations in screening tools.

In this study, marital status was a predictor of postpartum depression with non-married women (single and divorced) being more likely to be depressed. Possibly, those women are more prone to social, economic, and psychological challenges, which in turn may aggravate the condition of depression. A similar finding was reported by Shittu *et al.* in North West Ethiopia where divorced/widowed/unmarried women were more likely to be depressed [35]. However, in a secondary analysis of public-use data from the Fragile Families and Child Wellbeing Study (FFCWS) which sampled women across large U.S. cities, single women were no more likely to have postpartum depression compared to married or cohabiting women [36]. The disparity in findings between our study and the U.S, study may be because of differences in cultural settings. In Nigeria, having a child out of marriage is frowned out across many settings compared to the US, and this may impact the woman mentally, making her more prone to postpartum depression [37].

Conclusion and Recommendations

This study found a remarkably poor knowledge of postpartum depression among the studied population. The prevalence of postpartum depression of 52.3% found in this study shows that a significant proportion of new mothers have postpartum depression. However, the majority had minimal depression, while others had mild to moderate depression. Marital status was a significant predictor of postpartum depression. The prevalence of postpartum depression reported in this study was quite high and knowledge of postpartum depression was low. It is thus important that government organizations invest in educating the general public on postpartum depression e.g. through the media and health workers educate pregnant women on postpartum depression to improve the identification and treatment of affected women. Government, as well as non-governmental institutions, should carry out interventions and support programmes for women with postpartum depression and unmarried pregnant women who are more prone to post-partum depression. Policy implementation of existing mental health policies is crucial in addressing issues of postpartum depression.

Acknowledgements

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