ISSN- O: 2458 - 868X, ISSN –P: 2458 - 8687

International Journal of Medical Science and Innovative Research (IJMSIR)

IJMSIR : A Medical Publication Hub

Available Online at: www.ijmsir.com

Volume – 2, Issue – 3, May – June - 2017, Page No. : 149 - 157

Postpartum Depression in Primary Health Care Setting in Plateau, Nigeria; Knowledge and Identification by Health Care Workers.

Okonoda K.M[1], Adetoye A.M[2], Ochefa S.O[2], Josiah W.Q[2], Chirdan O.O[3]

[1]Department of Psychiatry, University of Jos, Jos, Plateau, Nigeria

[2]Faculty of Medical Sciences, University of Jos, Jos, Plateau, Nigeria

[3]Department of Community Medicine, University of Jos, Jos, Plateau, Nigeria.

Correspondence Author: Dr Okonoda Kingsley Mayowa, Department of Psychiatry, University of Jos, PMB 2084, Jos, Plateau State, Nigeria.

Conflicts of interest: None to Declare

Abstract

Introduction

Postpartum Depression is one of the - common complications of childbearing and as such represents a considerable public health problem with effects on the mother, her marital relationship and her children. The ability of primary health care workers to recognize and diagnose the condition seems to be low.

Materials and Methods

A total of 112 women in puerperium who attended immunization clinic which held twice weekly in selected Primary care facilities in Jos North and Jos South Local Governments areas were interviewed using the Edinburg Postpartum Depression Scale (EPDS) between 1st February and 28th February 2017. Twenty six healthcare workers who ran postnatal clinic at the selected primary healthcare centres were interviewed to access the knowledge of healthcare workers on postpartum depression.

Results

We found that 9 (8%) of the respondents had major probable depression with cut off set at 13 and 13 (11.6%) of the respondents had mild probable depression with scores between 10 and 12. Eighteen (69.2%) of the total 26 health workers had received information on postpartum depression during the years of training while 8(30.8%) of the respondents did not. Three (11.5%) felt very confident in their knowledge to identify and diagnose women with postpartum depression, 8(30.8%) said they were confident enough, 11(42.3%) said they were not so sure and 4(15.4%) said not at all. Twenty (96.2%) said they need more training in diagnosing and managing postpartum depression.

Conclusion

Postpartum depression is prevalent among mothers in this environment just like it is in different parts of the world. The health workers in the primary health centres had little knowledge in identification, diagnosis and management of PPD. We recommend better training for health workers and better integration of mental health services into the primary health care services.

Keywords: Postpartum Depression, EPDS

Introduction

Pregnancy and childbirth are complex events, packed with physical and psychological incidents as well as a profound biological, social and emotional transition. Although reactions of anxiety and sadness are common during pregnancy, most women navigate this transition without major psychopathology.

Postpartum depression (PPD) is one of the three common forms of postpartum affective illness, the others being the blues (baby blues, maternity blues), postpartum and puerperal (postpartum or postnatal) psychosis. Each of these differ in prevalence, clinical presentation, and management. [1]

Postpartum depression (PPD) is a non-psychotic depressive episode of mild to moderate severity, beginning in or extending into the first postnatal year. It has been described as a 'thief that steals motherhood'. [2] It is the most common complication of childbearing affecting approximately 10-15% of women and as such represents a considerable public health problem affecting women and their families. The effects of post natal depression on the mother, her marital relationship and her children makes it an important to diagnose, treat and prevent.[1]

Untreated postpartum depression can have adverse long term effects. For the mother, the episode can be the precursor of chronic or recurrent depression. For her children a mother's on-going depression can contribute to emotional, behavioural, cognitive and interpersonal problems in later life [3].Studies have shown that children with depressed mothers may exhibit long-term deficits that affect the child beyond infancy to school age, such as inhibited speech development and a weak mother-child relationship, due to the mother's failure to interact with the infant.[4]

Because of the consequences which could arise early diagnosis and treatment interventions of post natal illnesses are imperative for the health and wellbeing of the mother and child.

In northern Nigeria, Postpartum depression has been reported to have a higher prevalent rate of 44.5% in a clinical setting compared to the general average of 10-15% worldwide, while 30.6% was reported in south eastern Nigeria and prevalence of 14.6% of women attending postnatal clinic in western Nigeria. [5, 6] It has been reported that 1 in 6 mothers suffer postpartum depression and is the leading cause of suicide among postpartum women in Nigeria. [5]

Criteria for diagnosis must include either depressed mood or loss of interest or pleasure every day, along with any four of the following symptoms that last for a 2-week period: weight gain or loss, insomnia or hypersomnia, psychomotor agitation or retardation, fatigue or loss of energy, feelings of worthlessness or excessive or inappropriate guilt, diminished ability to think or concentrate, recurrent thoughts of death, suicidal ideation or suicide attempt[4]. Many cases of PPD are easily missed in the clinical setting as subtle signs such as anxiety are easily missed on presentation. [7] It is estimated that at least 50% of PPD cases go unrecognized and many women go without treatment despite multiple contacts with health professionals during the postpartum period. This may be more pronounced in the Primary Health Care setting where healthcare workers have a lower index of suspicion or lack the skill to identify PPD.

If such depression is not treated, up to 50% of mothers will remain depressed 1 year following childbirth .Early detection of symptoms and prompt intervention can greatly reduce adverse consequences[8]. Given the implication of postpartum depression on the mother and child, knowledge of rates and predictors are necessary to implement preventive measures and identification and treatment of individuals at risk.

This study seeks to determine the prevalence of postpartum depression and the associating factors in primary health facilities in Jos north and south local governments.

Materials & Methods

Study Design: A cross sectional study design was adopted for this study.

Study Area: Jos north LGA is bounded in the north by Toro LGA in Bauchi state; in the south by Jos south LGA; in the east by Jos east LGA and in the west by Bassa LGA. It is a cosmopolitan settlement that is divided into four districts and twenty wards. Jos North has a total of 39 PHCs distributed across the 20 wards in the local government.

Jos South is one of the seventeen (17) local government areas in Plateau State, Nigeria. Its headquarters is in the town Bukuru. It is has an area of 510km^2 and a projected population of 368,716 as at 2017. It is the second most populated Local Government Area in the state after Jos North. There are 30 Primary Health care centres in Jos North Local government.

Study Population: The study population comprised of all women attending post natal clinic in puerperal period at primary health care centres as well as all primary health care workers offering health care services in the primary health care centres at Jos North and Jos South Local Government Area, Plateau State, Nigeria.

Inclusion Criteria

Women who were attending post natal clinic at the Primary Health Care Facilities in the location, were in pueperial period and where residents of Jos South and North Local Government Areas of Plateau State

The primary health care workers who were providing health care services in the selected PHCs.

Exclusion Criteria

Those workers who were on annual leave or sick leave at the time of the study.

Sample Size: A total of 112 women in puerperium who attended immunization clinic in selected Primary care facilities between 1st February and 28th February 2017 during immunization clinic days which held twice weekly in Primary Healthcare Centres in Jos North and Jos South Local Governments. All health care workers (26) who ran postnatal clinic at the selected primary healthcare centres were interviewed to access their knowledge of postpartum depression.

Sampling Techniques: The sampling technique used for this study was a multistage sampling technique. It had the following stages

Stage 1- Jos North and Jos South Local Government areas were purposely selected amongst the seventeen (17) local government areas of Plateau State.

Stage 2- Six Primary health care centres were selected out the 30 primary health care centres in Jos North Local Government Area of Plateau State and 5 other primary health care centres were selected among the primary health care centres in Jos South Local Government Area.

Stage 3- Women who met the inclusion criteria were recruited into the study. Questionnaires were administered by the interviewer. Also the primary health care workers at these facilities were assessed using interviewer administered questionnaires.

Data collection was by a composite questionnaire comprising two sections. Section A asks for the socio-demographics and section B comprises of the Edinburgh Post natal Depression Scale (EPDS)[9]. The Edinburgh Post natal Depression Scale has 10 questions.

Questions 1, 2, and 4 are scored 0, 1, 2 or 3 with top box scored as 3.

Questions 3, 5-10 these are reversed scored as aa3 and the bottom box scored as 0.

Maximum score: 30

Possible Depression: 10 or greater
Mothers who score above 13 are likely to be suffering from a depressive illness of varying severity.
The 10-item Postnatal Depression Scale, had satisfactory validity, split-half reliability and was also sensitive to changes in the severity of depression over time. Furthermore, the scale was found to be fully acceptable to the child bearing women and was usually completed within 5 minutes.[9]
It has been translated into three local Nigerian languages and validated in two of these languages.[10-12]

Ethical Consideration

A letter introducing the department of Community Health, University of Jos was presented to the management of the Primary Health Care Centres seeking for permission to obtain the required data. Also informed consent were also obtained from the participants before the commencement of the study; this was after they were provided with thorough explanation of the nature and scope of the study. The respondents were also assured that absolute confidentiality of the information and anonymity will be maintained. All respondents who screened positive with probable depression were referred to the Psychiatric department of Jos University Teaching hospital for further evaluation.

Data Analysis

The collected data was analysed using the data analysis software Epi info version 3.5.4. The independent variables were age, years in practice and the dependent variable was knowledge of healthcare workers on postpartum depression in assessment of knowledge of healthcare workers. In assessing prevalence of postpartum depression, the independent variables were age, marital status and type of marriage while the dependent variables were marriage satisfaction, marital status and conflicts in marriage respectively.

Results

(19.2%) were nurses while 11(42.3%) were trained in other specialties .3(11.5%) had less than 1 year experience , 6(23.1%) had practiced for 1-9 years, 8(30.8%) had practiced for 10-19 years ,9(46.2%) had practiced for 20-29 years. Among the healthcare workers, 3(11.5%) work primarily in the antenatal clinic, 2(7.7%) work in the delivery room, 2(7.7%) work in the immunization clinic, 19(73.1%) work in other fields. However most of the workers had overlapping duties and working in one field did not preclude working in others. (Table 4.)
18(69.2%) of the respondents had received information on postpartum depression during the years of training while 8(30.8%) of the respondents did not. 5(19.2%) of the

In this study, majority 70 (62.5%) of the total number of 112 respondents were within the ages of 20-29. Thirty four (30.4%) of the population were within the ages of 30-39, 6(5.4%) were within ages 15-19 and 2(1.8%) were above 40. 35(31.3%) of the respondents had primary level of education,52(46.4%) had secondary level of education ,24(21.4%) had tertiary level of education and 1 (0.9%) had no formal education . 110(98.2%) 0f the respondents were married while 2(1.8%) were separated or divorced.96(86.5%) were in monogamous marriage while 15(13.5%) were in polygamous marriages.42(37.5%) were housewives ,28(25.0%) were traders,13(11.6%) were civil servants, 5(4.5%) were students while other occupations such as tailoring, food vendor made up 19.6% of the population.59(53.7%) were Christians while 53(47.3%) were Muslims.27(24.1%) had parity of 1, 12(10.7%) had parity of 2, 43(38.4%) had parity of 3 while 30(26.4%) had parity of 4 or more. (Table 1)
The table 2 shows that 9 (8%) of the respondents had major probable depression with cut off set at 13. 13(11.6%) of the respondents had mild probable depression with scores between 10 and 12.
Table 3. There was no significant relationship between socio-demographic characteristics, neonatal and obstetrics factors and depression. Adequate support from the husband was the only psychosocial characteristic linked with a diagnosis of postpartum depression.
A total of 26 health care workers in selected PHCs completed survey questionnaires administered in the primary health centres in Jos North and South local governments .24(92.3%) were females and 2(7.7%) were males. Six (23.1%) were within the ages of 20-29 ,6(23.1%) were within the ages of 30-39,7(26.9) were within the ages of 40-49 and 7(26.9) were age 50 or more . 16(61.5%) were married, 5(19.2%) were single while 5(19.2%) were widowed. 4(15.4%) of were community health extension workers ,2(7.7%) were trained as community health officers , 4 (15.4%) were midwives, 5 respondents knew about the Edinburgh postpartum depression scale(EPDS) while 21(80.8%) did not know about the scale. Two (7.7%) said they had used the scale while 24(92.3%) said they had not. Five(19.2%) of the respondents rightly said a score of 14 on the EPDS did not indicate health while 21(80.8%) wrongly said that a score of 14 on the EPDS indicates health. Three (11.5%) felt very confident in their knowledge to identify and diagnose women with postpartum depression, 8(30.8%) said they were confident enough, 11(42.3%) said they were not so sure and 4(15.4%) said not at all. Twenty (96.2%) said they need more training in diagnosing and managing postpartum depression. (Table 5).

Table1: Demographic characteristics of respondents

CHARACTERISTICS	FREQUENCY	PERCENTAGE
AGE GROUP(YEARS)		
15-19	6	5.4
20-29	70	62.5
30-39	34	30.4
>40	2	1.8
Total	112	100
EDUCATIONAL LEVEL		
Primary level	35	31.3
Secondary level	52	46.4
Tertiary level	24	21.4
None	1	0.9
Total	112	100
MARITAL STATUS		
Married	110	98.2
Divorced/Separated	2	1.8
Single	0	0
Widowed	0	0
Total	112	100
TYPE OF MARRIAGE		
Monogamy	96	86.5
Polygamy	15	13.5
Total	111	100
OCCUPATION		
Civil servant	13	11.6
Farmer	2	1.8
Housewife	42	37.5
Student	5	4.5
Trader	28	25.0
Others	22	19.6
Total	112	100
RELIGION		
Christianity	59	52.7
Islam	53	47.3
Others	0	0
Total	112	100
PARITY		
1	27	24.1
2	12	10.7
3	43	38.4
4 or more	30	26.8
Total	112	100

Table2: Frequency of respondents with mild probable depression and major depression

Classification	Frequency	Percent
No depression	90	80.4
Mild probable depression	13	11.6
Major probable depression	9	8.0
Total	112	100

Table3: **Relationship between socio-demographic, psychosocial, obstetric and neonatal characteristics and diagnosis of depression**

Factor	**Mild probable**	**Major depression**	**No depression**	**p value**

	(%)	(%)	(%)	
Age group(Years)				
15-19	1(7.7)	0(0.0)	5(5.6)	0.839
20-29	10(76.9)	6(66.7.)	54(60.0)	
30-39	2(15.4)	3(33.3)	29(32.2)	
>40	0(0.0)	0(0.0)	2 (2.2)	
Education				
None	0(0.0)	0(0.0)	1(1.1)	0.8843
Primary	6(46.2)	2(22.2)	27(30.0)	
Secondary	4(30.8)	5(55.6)	43(47.8)	
Tertiary	3(23.1)	2(22.2)	19(21.1)	
Marital status				
Divorced/separated	0(0.0)	1(11.1)	1(1.1)	0.0849
married	13(100.0)	8(88.9)	89(98.9)	
Occupation				
Civil servant	3(23.1)	1(11.1)	9(10.0)	0.7316
Farmer	1(70.7)	0(0.0)	2(1.8)	
Housewife	4(30.8)	4(44.4)	42(37.5)	
Student	0(0.0)	0(0.0)	5(4.5)	
Trader	3(23.1)	3(33.3)	22(24.4)	
Others	2(15.4)	1(11.1)	28(25.0)	
Religion				
Christianity	9(69.2)	8(88.9)	42(46.7)	0.0239
Islam	4(30.8)	1(11.1)	48(53.3)	
Pregnancy desired				
Yes	13(100.0)	9(100.0)	88(97.8)	0.7797
No	0(0.0)	0(0.0)	2(2.2)	
Depressive symptoms during pregnancy				
Yes	7(53.8)	2(22.2)	29(32.2)	0.2268
No	6(46.2)	7(77.8)	61(67.8)	
Adequate support from husband				
Yes	13(100.0)	6(66.7)	86(95.6)	0.018
No	0(0.0)	3(33.3)	4(4.4)	
Marital satisfaction				
Yes	13(100.0)	8(88.9)	110(98.2)	0.0849
No	0(0.0)	1(11.1)	2(1.8)	
Difficulty with baby sleep				
Yes	3(23.1)	1(11.1)	13(14.4)	0.6760
No	10(76.9)	8(88.9)	77(85.6)	
Caesarean section				
Yes	0(0.0)	1(11.1)	9(10.0)	0.4833
No	13(100.0)	8(88.9)	81(90.0)	

Table 4: Demographic characteristics of healthcare workers

Demographics	Frequency	Percentage (%)
Sex		
Female	24	92. 3
Male	2	7.7
Total	26	100
Age group(in years)		

20-29	6	23.1
30-39	6	23.1
40-49	7	26.9
>50	7	26.9
Total	26	100
Marital status		
Married	16	61.5
Single	5	19.2
Widowed	5	19.2
Total	26	100
Profession		
Community health extension workers	4	15.4
Community health officer	2	7.7
Midwife		
Nurse	5	19.2
Others	11	42. 3
Total	26	100
Duration of practice (years)		
<1	3	11.5
1-9	6	23.1
10-19	8	30.8
20-29	9	34.6
Total	26	100
Qualification		
Diploma in nursing	6	23.1
Nursing degree	4	15.4
Others	16	61.5
Total	26	100
Area of work		
Antenatal	3	11.5
Delivery room	2	7.7
Immunization clinic	2	7.7
Others	19	73.1
Total	26	100

Table 5: Knowledge of postpartum depression among healthcare workers

Variable	Frequency	Percentage (%)
Received information during training?	18	69.2%
Yes	8	30.8%
No	26	100%
Total		
Prior Knowledge of EPDS?	5	
Yes	21	19.2%
No	26	80.8%
Total		100
Prior Use of EPDS?		
Yes	2	7.7%
No	24	92.3%
Total	26	100%
Knowledge of Scoring of EPDS		
Yes	5	19.2%

No	21	80.2%
Total	26	100
Confidence in identifying PPD?		
Very confident	3	11.5%
Confident Enough	8	30.8%
Not so sure	11	42.3%
Not at all	4	15.4%
Total	26	100
Need for more Training?		
Yes	25	96.2%
No	1	3.8%
Total	26	100

Discussion

In this study, 70(62.9%) of the respondents were between the ages of 20 and 29 years. This is similar to a study done in South Eastern Nigeria in which most of the respondents were between the ages of 23 and 28 [8] and another study done in Yaoundé, Cameroon that had most of the respondents between the ages of 20 and 29 which was about 53% of the respondents[13]. This trend is indeed not surprising as this is the most likely reproductive age group of women followed by those in the 30-39 age group. As observed by an earlier study in a South Eastern Neuropsychiatric Hospital in Nigeria[14] which also had the largest age group as 20-29years, it also seems that most people in this part of Nigeria are willing to give out their daughters in marriage after at least a secondary school education.

We found a total prevalence rate of probable depression to be 19.6% out of which 8% was major probable depression. This rate is in great contrast to the 44.5% found by Obindo et al[15] among new mothers at the Postnatal Clinic of the department of Obstetrics and Gynaecology and the Children Welfare clinic of Jos University Teaching Hospital located in the same city as the locations of our study. The wide difference in the prevalence rates between these two studies are likely due to a number of factors. In that study the authors used a score of 7 as the cut off instead of the 10 that we used in this study based on the validation study[12] done on EPDS a few years earlier which found that a score of greater than or equal to seven (7) is suggestive of postpartum depression. Secondly, the study setting of both studies were different. While we used primary health centres, the study settings in that study were the Children welfare and the postnatal clinics of a tertiary care centre. While the Children welfare clinic is known to serve dual purpose of immunization and attendance to sick children, some of the women with sick babies may have been worried about the health of their children which might have affected their responses. The postnatal clinic of a tertiary care centre is also known to receive a higher number of complicated cases. Finally, while our study was done at a period in which the study area has experience relative peace, the period in which that study was one ethno-religious crises. This might have heightened the emotional responsiveness of the respondents. Other studies have found lower rates [11]and higher rates[8, 16] for reasons ranging from the difference in screening and diagnostic instruments to the difference in sample sizes. Moreover, as noted by Adewuya et al[11], in a multi-ethnic country like Nigeria, there are likely to be variations in prevalence rates between cultures, and perhaps even within the cultures.

We found adequate support from husband as the only factor that is significantly related to postpartum depression in this study. Though previous studies have identified marital disharmony and unsupportive husbands as risk factors for postpartum disorders, Ndukuba et al also found that most patients with PPD were having their husbands as primary givers. The reason they adduced for this is that the support usually shown for the women at this time of delivery is most often as a result of the child and not primarily for the sake of the women.

Like in previous studies,[15,16] we found no significant relationship of PPD with age, education, and mode of delivery in this study. However, unlike in this study, Obindo et al also found religion and birth weight of baby to be associated with PPD.

The healthcare workers in this study were generally poor in their knowledge of the depression and the EPDS. Although a greater percentage (69.2%) of them said they have received education on PPD during training, they were essentially not able to convincingly articulate the symptomatology. Moreover, many were not familiar with the EPDS, the scoring process and the interpretation and implication. In a previous study among Malaysian midwives,[17] it was found that though a good percentage of them received education on PPD during training, more than 50% of midwives confused PND with postnatal 'blues' or women not adjusting to life after giving birth. Similar to the low percentage (7.7%) of healthcare workers who have used PPD as found in this study,

Adama et al[13] in Cameroon found that none of the health workers has ever used the scale. Finally, out of the 26 health workers interviewed, 25 (96.1%) of them felt that they were not competent enough but needed more training in the diagnosis and management of PPD. This is similar to what was found in a study in 2006 where majority of the respondents were not confident in their knowledge related to PPD and all but one participant stated the need for more training,[18]

This study has the following limitations; (1) The sample sizes of both the mothers and the health workers were small and so may affect the power of the study. However, the 5 health centres that were selected were done by random sampling and the total number of health workers in those centres were interviewed. (2). We used only a screening instrument EPDS in identifying depression in the mothers.

Conclusion

Postpartum depression is prevalent among mothers in this environment just like it is in different parts of the world. The health workers in the primary health centres had little knowledge in identification, diagnosis and management of PPD. There is need to improve the teaching of PPD to these category of health workers and to regularly update their knowledge through continuous professional education, training and retraining. Finally, we recommend better integration of mental health services into the primary health care system in order to cater for the substantial number of mother suffering from postpartum depression.

References

1. oseffson A. Postpartum Depression-Epidemiological and Biological Aspects:Linkoping University Medical Dissertation.2003;781:1-51
2. Desai ND,Mehta R.Y,Ganjuwale J.Study of prevalence and risk factors of postpartum depression:National Journal of Medical Research.2012;2(2):194-198
3. Stewart, D.E., Robertson, E., Dennis, C.-L., Grace, S.L., & Wallington, T. Postpartum depression: Literature review of risk factors and interventions:National Journal of Medical Research.2003
4. Robertson E, Celasun N, Stewart DE. Risk factor for postpartum depression. In: Stewart DE, Robertson E, Dennis CL, Wallington T, editors. Postpartum depression: literature review of risk factors and interventions. Toronto: University Health Network; 2003.
5. Mahmoud D,Nadiya B.E. Relationship between postpartum depression and problem solving ability among postpartum women in Nigeria:Journal of Humanities and Social Science.2016;21(4):81-89
6. Mahmoud D,Nadiya B.E. Postpartum depression among Hausa ethnic women in Abubakar Tafawa Balewa University Teaching Hospital,North East Nigeria: International Journal of Research in Humanities, Arts and Literature.2016;4(3):55-64
7. Sara Thurgood, BS, Daniel M. Avery, MD,Lloyda Williamson,MD .Postpartum Depression(PPD). 2009;6(2):17-22.
8. Bakare MO, Okoye JO, Obindo JT. Introducing depression and developmental screenings into the National Programme on Immunization (NPI) in southeast Nigeria: an experimental coss-sectional assessment. General hospital psychiatry. 2014 Feb 28;36(1):105-12.
9. Cox JL, Holden JM, Sagovsky R. Detection of postnatal depression. Development of the 10-item Edinburgh Postnatal Depression Scale. The British journal of psychiatry. 1987 Jun 1;150(6):782-6.
10. Uwakwe R, Okonkwo JE. Affective (Depressive) morbidity in puerperal Nigerian women: validation of the Edinburgh Postnatal depression Scale. Acta Psychiatr Scand 2003;107:251–9.
11. Adewuya AO, Eegunranti BA, Lawal MA. Prevalence of postnatal depression in western Nigerian women: a controlled study. Int J Psychiatr Clin Practice 2005;9:1–5.
12. Obindo JT, Olayinka OO. The validation of Edinburgh Postpartum Depression Scale in north-central Nigeria. J Med Tropics 2007;9(2):29–40
13. Adama ND, Foumane P, Olen JP, Dohbit JS, Meka EN, Mboudou E. Prevalence and Risk Factors of Postpartum Depression in Yaounde, Cameroon. Open Journal of Obstetrics and Gynecology. 2015 Sep 14;5(11):608.
14. Ndukuba AC, Odinka PC, Muomah RC, Nwoha SO. Clinical and socio-demographic profile of women with post-partum psychiatric conditions at a federal neuropsychiatric hospital in southeast Nigeria between 2009 and 2011. Annals of medical and health sciences research. 2015;5(3):168-72.
15. Obindo TJ, Ekwempu CC, Ocheke AN, Piwuna CG, Adegbe EO, Omigbodun OO. Prevalence and correlates of postpartum depression in a teaching hospital in Nigeria. Highland Medical Research Journal. 2013;13(2):71-5.
16. Chinawa JM, Odetunde OI, Ndu IK, Ezugwu EC, Aniwada EC, Chinawa AT, Ezenyirioha U. Postpartum depression among mothers as seen in hospitals in Enugu, South-East Nigeria: an undocumented issue. Pan African Medical Journal. 2016;23(1).
17. Keng SL. Malaysian midwives' views on postnatal depression. British journal of midwifery. 2005 Feb 1;13(2).

18. Skočir AP, Hundley V. Are Slovenian midwives and nurses ready to take on a greater role in caring for women with postnatal depression?. Midwifery. 2006 Mar 31;22(1):40-55.