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Pattern and Predictors of Post-Partum Depression Among Women in A Single Tertiary Center Population in Nigeria

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Abstract

Background

Postpartum depression (PPD) is a major public health concern with profound implications for the mother–infant dyad. It adversely affects maternal wellbeing, interferes with infant bonding, impairs child growth and development, and, in severe cases, may lead to suicide. Despite its clinical consequences, PPD frequently remains unrecognized in routine obstetric practice due to limited screening, diagnostic, and management capacity among healthcare providers.

Objectives

This study aimed to determine the prevalence, pattern, and correlates of PPD within six weeks postpartum, evaluate the diagnostic performance of the Edinburgh Postnatal Depression Scale (EPDS), and assess the competence of resident doctors in administering the EPDS.

Methods

A prospective longitudinal study was carried out at Nnamdi Azikiwe University Teaching Hospital, Nnewi, involving 250 enrolled women. Data were collected during the second week postpartum using a structured socio-demographic and clinical questionnaire. This was followed by administration of the Edinburgh Postnatal Depression Scale (EPDS) and further evaluation using the depression module of the Mini International Neuropsychiatric Interview (MINI) conducted by a psychiatrist.

Participants were reassessed at six weeks postpartum. All interviews were conducted in English and Igbo. A total of 231 women completed the follow-up.

Results

Of the 231 women assessed, 19 (8.4%) were diagnosed with PPD by psychiatric interview on day 14 postpartum and 9 (7.7%) at six weeks. Using the EPDS, screening prevalence was 23.8% and 24.2% at cut-offs of 9 and 12, respectively, on day 14, decreasing to 9.4% and 7.7% at six weeks. At these cut-offs, the EPDS demonstrated sensitivity/specificity values of 79%/54.6% (cut-off 9) and 68%/80.6% (cut-off 12), respectively. By six weeks, the EPDS achieved 100% sensitivity in detecting depressive cases. Among multiparous women, significant correlates of PPD included previous intrauterine fetal death ($p = 0.008$) and preterm birth ($p = 0.022$), while for primiparous women, family history of psychiatric illness emerged as the sole independent predictor.

Conclusion

The prevalence of postpartum depression in this Nigerian population was 8.4% at day 14 and 7.7% at six weeks postpartum, aligning with global estimates. The EPDS proved to be a valid and practical screening instrument, with optimal sensitivity at a cut-off of 9 within 14 days postpartum period and at 12 by six weeks. Given the measurable burden and identifiable predictors, routine mental health screening using EPDS should be integrated into postnatal care, particularly at the six-week postpartum visit. Training obstetric residents in its application and interpretation is essential to improve early detection and management of maternal mental health disorders.

Keywords: Postpartum depression; Edinburgh Postnatal Depression Scale (EPDS); maternal mental health; risk factors, Nigeria; Obstetric Screening

Introduction

Maternal mental health is central to a woman's ability to function optimally, nurture relationships, prepare for childbirth, adapt to parenting stressors, and experience the positive emotions of motherhood. Sound health, therefore, is the foundation of sound motherhood. Among psychiatric conditions affecting mothers, mood disturbances represent the most frequent form of postpartum psychiatric morbidity [1]. These conditions are traditionally categorized into postpartum blues, postpartum depression (PPD), and puerperal psychosis, reflecting a continuum of severity [1,2]. Postpartum blues, the mildest and most transient form, affects approximately 30% to 75% of new mothers [3]. Postpartum depression, though less frequent, occurs in 10% to 15% of deliveries and carries profound implications for the health and wellbeing of both mother and child [3]. Puerperal psychosis, the rarest but most severe form, represents a genuine psychiatric emergency. Despite the relative frequency of PPD, it often remains under-recognized and undertreated, with up to 50% of cases undetected in clinical practice [4,5].

The International Classification of Diseases, Tenth Edition (ICD-10) classifies mental disorders as related to the puerperium if the onset is within six weeks postpartum and cannot be otherwise classified. Further, an international expert panel recommended extending the timeframe for postpartum onset to three months [5,6].

Globally, the prevalence of postpartum depression varies considerably according to socio-economic, cultural, and ethnic factors [7]. Global estimates range between 10% and 25% [8]. with country-specific prevalence reported as 27–39% in Iran [9]. and 7–20% in the United States, United Kingdom, and Australia [10]. Such variation highlights the influence of appropriate and cultural determinants on maternal mental health.

Understanding these risk factors is critical to the early identification of vulnerable women and provides an opportunity for timely professional intervention [11]. Identifying locally relevant correlates also allows for cross-cultural comparisons and informs the design of appropriate screening, prevention, and management strategies.

A number of screening tools have been developed for detecting postpartum depression, including the Edinburgh Postnatal Depression Scale (EPDS), Beck Depression Inventory (BDI), Mini International Neuropsychiatric Interview Plus (MINI Plus, version 5.0.0), Presumptive Stressful Life Events Scale (PSLES), and Lubben Social Network Scale (LSNS). Among these, the EPDS is especially favored due to its ease of administration, high acceptability among mothers, straightforward interpretation, and simplicity of integration into routine postnatal care [12]. The EPDS has been validated across several countries, including

populations in Eastern Nigeria, confirming its cultural and linguistic adaptability [12]. Studies have shown the scale to possess high diagnostic power, with sensitivity and specificity values of 75% and 97%, respectively, at a cutoff score of 12 in its Persian version [13]. Sensitivity and specificity thresholds can, however, vary according to population and cut-off criteria, as also observed with other screening instruments.

Given the high prevalence of mood disturbances during the postpartum period and their potentially detrimental consequences for mothers, infants, and family functioning, the accurate detection and management of PPD are imperative. Therefore, the aim of this study was to determine the prevalence, patterns, and correlates of postpartum depression among mothers within six weeks after delivery, as well as to assess fetal outcomes at birth, in a semi-urban population in Nnewi, Southeastern Nigeria.

Materials and Methods

- **Study Site**

  This study was conducted in Nnamdi Azikiwe University Teaching Hospital (NAUTH) Nnewi. Nnamdi Azikiwe University Teaching Hospital is a tertiary hospital that serves as a referral center for many cases from Anambra and environs such as Enugu, Abia, Delta, Imo, Ebonyi and Rivers states. NAUTH also has an average of 1200 deliveries per year.

- **Study Area**

  The study area is in Nnewi North Local Government Area (NNLGA), one of the 21 Local Government areas in Anambra State. The town has the largest motor and motorcycle spare parts market in West African region.

- **Study Population**

  The study population comprised women who delivered at Nnamdi Azikiwe University Teaching Hospital, Nnewi, Nigeria, during the study period. Participants were recruited consecutively on the 14th day postpartum and reassessed at six weeks postpartum. A total of 250 women were recruited, of whom 231 returned for the six-week postpartum assessment.

- **Study Design**

  This was a prospective longitudinal study that utilized an interviewer-administered questionnaire to obtain socio-demographic and clinical data. The questionnaire was structured into four sections (A–D), capturing the relevant variables.

  Depression was screened using the Edinburgh Postnatal Depression Scale (EPDS), and diagnoses were confirmed through a clinical interview using the Mini International Neuropsychiatric Interview (MINI). The MINI assessment was regarded as the gold standard for diagnosis.

The Edinburgh Postnatal depression scale (EPDS) is a self-reporting instrument but interviewer-administered in this study and it contains 10 statements specific for depression during the perinatal period. Each statement had 4 responses which are scored from 0-3 depending on the severity of the response. The cut-offs were set at 9 and 12 and the specificity at the 2 cut-offs were compared.

The researcher and trained assistants administered the questionnaires and the EPDS, while a psychiatrist, blinded to the EPDS screening results, conducted the clinical interviews.

Sample Size Determination

The sample size for the study group was derived using formula published by Araoye [14].

$n = \frac{Z^2pq}{d^2}$

n= minimum sample size

z= standard deviation usually set at 1.96

p= proportion of depressed women in the population =0.107

q=1-p

d=precision or degree of accuracy= 0.05

$n = \frac{1.96^2 \times 0.107 \times (1-0.107)}{0.05^2}$

The minimum size is 147.

Plus 10% for attrition = 147+15=162

Sampling Technique

Participants were recruited consecutively until the desired sample size was achieved. To ensure sufficient power for reliable analysis, the sample size was increased to 250, representing 1.5 times the calculated minimum. Eligible women were informed about the study, and those who provided informed consent were enrolled. The questionnaire was administered to participants at 14 days postpartum and again at six weeks postpartum, alongside a clinical interview conducted by a psychiatrist.

Inclusion Criteria

Consecutive postnatal patients regardless of symptoms, retroviral status and with properly given informed consent were recruited as well as women aged 18 to 45 years who had delivered within the preceding 14 days,, and the same sets of patients were also followed up at six weeks [15].

Exclusion Criteria

Women without a live birth, those with a past history of depression, and those with comorbidities that could impair their ability to provide the required information were excluded.

Data Collection

The researcher and two resident doctor assistants were trained in administering the questionnaires and the EPDS. Women in the postnatal ward were informed about the purpose, significance, and nature of the study, after which informed consent was obtained. The questionnaire and EPDS were then administered to those who consented. For participants who did not understand English, translated Igbo versions were used.

The questionnaire consisted of four sections. Section A captured the socio-demographic characteristics of participants, including age, occupation, religion, highest level of education, tribe, marital status, and parity. Section B evaluated pregnancy-related psychiatric factors such as refusal to breastfeed or immunize the baby, refusal to allow relatives to care for the baby, thoughts of harming the baby or oneself immediately after delivery, history of mental illness prior to pregnancy and its recurrence postpartum, breastfeeding difficulties, coexisting Human Immunodeficiency Virus (HIV) infection, and history of caesarean section in the last delivery [15].

Section C assessed family-related factors, including family history of mental illness, financial stress, spousal support, and polygamous family structure. Section D examined health-related factors such as the quality of the relationship with healthcare providers, perceived mismanagement during labour, and dissatisfaction with the hospital environment or standards of care. The final section evaluated pregnancy outcomes, including whether the baby was alive or deceased, and whether the newborn required admission to the special care baby unit or the children's emergency ward.

Statistical Analysis

Descriptive analysis of the results was done using the SPSS package version 20. The sensitivity was calculated as follows: true positive (TP)/ [TP+ false negative (FN)]; and the specificity was calculated as follows: true negative (TN)/ [TN+false positive (FP)]. The positive predictive value (PPV) relates the TP/ (TP+FP)] while the negative predictive value (NPV) relates the TN/(TN+FN). They were calculated for the EPDS.

The result was analyzed further using cross-tabulation to explore statistical relationship between variables, student t-test for continuous variables, the Pearson (x^2) and the Fisher's exact tests for categorical data. The level of statistical significance was set at p values <0.05 (providing 95% confidence interval). Data was presented as means, standard deviations (SD), numbers and frequencies (%). The respondents were further classified into two groups to determine the associations between the variables and PPD among primiparas on one hand and multiparas on the other hand. Significant variables were further subjected to binary logistic regression to determine the correlates or better referred to as predictors of depression in primiparas and multiparas.

Results

Participant Flow and Prevalence of Postpartum Depression

A total of 250 respondents were initially enrolled in this longitudinal study. Of these, 19 participants (7.6%) withdrew, yielding a final analytical sample of 231 women (92.4%). Among these, 5 respondents missed the psychiatric interview, while 19 participants (8.4%) were diagnosed with postpartum depression (PPD) by psychiatric evaluation on day 14 postpartum.

At the 6-week follow-up, 117 participants were successfully reassessed (representing a follow-up rate of 50.6%), while 114 were lost to follow-up. Of those reassessed, 9 women (7.7%) were diagnosed with PPD at 6 weeks postpartum. The mean age of respondents was 30.2 years (range: 16–45 years), with a modal age of 30 years.

Socio-Demographic Characteristics

Table 1 presents the socio-demographic characteristics of the respondents. The study comprised 231 respondents, with the majority (39.0%) aged between 26 and 30 years, and a mean age of approximately 30 years. Most participants were married (98.7%), with only a very small proportion being single (0.9%) or cohabiting (0.4%). Educational attainment was generally high; nearly half (49.4%) had completed secondary education, while 44.6% attained tertiary qualifications. The predominant parity group was multiparous women (72.7%), compared to 27.3% who were primiparous.

Psychometric Properties of Epds At 14th day Postpartum

The Edinburgh Postnatal Depression Scale (EPDS) was administered on the 14th day postpartum. The screening outcomes and diagnostic accuracy indices are summarized in Tables 2–4. For instance, Table 2 shows the diagnostic performance of EPDS (day 14 postpartum). The diagnostic performance of the EPDS on the 14th day postpartum indicated a sensitivity of 78.9% and a specificity of 54.7%, suggesting that the instrument effectively identified most true cases but had modest precision in ruling out non-cases. The positive predictive value (PPV) was 13.5%, while the negative predictive value (NPV) was notably high at 96.7%, reinforcing the scale's reliability in excluding non-depressed individuals.

Table 3 shows the EPDS screening results on Day 14 postpartum. Screening outcomes using the EPDS revealed that just over half of the respondents (51.9%) were classified as having no depressive symptoms. Mild and major forms of depression were observed in 23.8% and 24.2% of respondents, respectively.

Table 4 shows the cross-classification of EPDS scores and psychiatric interview findings. When cross-tabulated with psychiatric interview outcomes, the EPDS identified 15 true positives and 116 true negatives. However, there were 96 false positives and 4 false negatives among the participants.

Risk Factors Among Multiparous Women

Potential correlates of PPD among multiparous women are summarized in Table 5. Among multiparous women, several psychosocial and obstetric variables were significantly associated with postpartum depression. The notable predictors included lack of physical support from the husband ($p = 0.026$), prior history of sadness ($p = 0.030$), feelings of alienation ($p = 0.022$), and caesarean delivery ($p = 0.010$). Adverse obstetric experiences such as intrauterine fetal death ($p = 0.008$) and having a non-viable baby ($p < 0.001$) were also highly significant. Socioeconomic challenges, including bill payment difficulties ($p = 0.027$) and detention after birth due to unpaid bills ($p = 0.004$), further heightened the risk.

Effect of Age on PPD Among Multiparas

As shown in Table 6, the mean age of multiparous women diagnosed with postpartum depression (29.83 ± 4.00 years) was slightly lower than that of their non-depressed counterparts (32.31 ± 4.85 years). Although this difference approached statistical significance ($t = 1.723$, $p = 0.087$), it did not meet the conventional threshold.

Logistic Regression Analysis for Multiparas

Logistic regression modeling identified previous intrauterine fetal death ($p = 0.003$, OR = 51.77, 95% CI: 3.95–677.07) and previous preterm birth ($p = 0.022$, OR = 11.44, 95% CI: 1.42–92.22) as significant independent predictors of postpartum depression among multiparous women.

Risk Factors Among Primiparous Women

As shown in Table 8, among primiparous respondents, a significant association was found between family history of mental illness and postpartum depression ($\chi^2 = 7.464$, $p = 0.046$). No other assessed psychosocial or obstetric variables showed statistical relevance.

Table 9 shows the association of age and the risks of PPD. The mean age of depressed primiparous women was 26.2 ± 8.0 years, compared with 27.6 ± 4.6 years among those who were not depressed. The difference was not statistically significant ($t = 0.651$, $p = 0.537$), although younger age appeared associated with a higher risk of PPD.

Table 10 shows the logistic regression for predictors of postpartum depression among primiparous women. Multivariate analysis among primiparas confirmed that a family history of mental illness was the only independent risk factor significantly associated with postpartum depression ($p = 0.021$, OR = 12.22, 95% CI: 1.45–103.20).

Assessment of Resident Doctors Competence in Administering EPDS

The accuracy of resident doctors in administering the EPDS was evaluated using eight structured quality measures, as summarized in Table 11. Evaluation of resident physicians' ability to administer the EPDS revealed variable levels of accuracy across the assessed domains. While performance was moderately acceptable in items A (60%) and B (53%), accuracy markedly declined across subsequent items, with most respondents failing items D through G (>90% incorrect).

Table 1: Socio-demographic characteristics of respondents (n = 231)

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	16–20	4	1.7
	21–25	28	12.1
	26–30	90	39.0
	31–35	62	26.8
	36–40	41	17.7
	41–45	6	2.6
Marital status	Single	2	0.9
	Married	228	98.7
	Cohabiting	1	0.4
	Divorced	0	0.0
Educational level	Primary	13	5.7
	Secondary	114	49.4
	Tertiary	103	44.6
	Postgraduate	1	0.3
Parity	Primiparous	63	27.3
	Multiparous	168	72.7

Table 2: Diagnostic performance of EPDS (day 14 postpartum)

Parameter	Value
True Positive	15
False Positive	96
False Negative	4
True Negative	116
Total	231
Sensitivity (%)	78.9
Specificity (%)	54.7
Positive Predictive Value (%)	13.5
Negative Predictive Value (%)	96.7

Table 3: EPDS screening results on day 14 postpartum

Category	Frequency (n)	Percentage (%)
No Depression	120	51.9
Mild Depression	55	23.8
Major Depression	56	24.2
Total	231	100.0

Table 4: A contingency table showing relative frequencies of agreement and disagreement (day 14)

Epds category	Psychiatric Interview Outcome
True Positive	15
False Positive	96
False Negative	4
True Negative	116
Total	231

Table 5: Association of risk factors and postpartum depression among multiparous women

Risk Factor	χ^2	p-value	Significance
Lack of physical support from husband	11.264	0.026	Significant
History of sadness	10.481	0.030	Significant
Feeling of alienation	7.581	0.022	Significant
Caesarean section	7.754	0.010	Significant
Intrauterine fetal death (IUFD)	10.291	0.008	Significant
Term pregnancy (≥37weeks)	11.029	0.005	Significant
Bill payment difficulties	6.809	0.027	Significant
Detention due to unpaid bills	12.827	0.004	Significant
Baby not alive	44.789	<0.001	Significant
Other factors	—	>0.05	Not Significant

Table 6: Comparison of age by depression status among multiparous women

Depression Diagnosis	N	Mean Age (years)	SD	t	p-value
Not Depressed	156	32.31	4.85	1.723	0.087
Depressed	12	29.83	4.00		

Abbreviations: Exp (B) = Odd ratio; SIG= significant; C.I =Confidence interval; S.E =standard error

Table 7: Logistic regression for predictors of PPD among multiparas

Risk Factor	B	S.E.	p-value	Exp(B)	95% CI for Exp(B)
Previous IUFD	3.947	1.312	0.003	51.773	3.959 – 677.075
Previous preterm birth	2.437	1.065	0.022	11.441	1.419 – 92.222
Others	—	—	>0.05	—	—

Abbreviations: Exp(B) = Odd ratio; SIG= significant; C.I =Confidence interval; S.E =standard error

Table 8: Association between risk factors and PPD among primiparous women

Risk Factor	B	S.E.	p-value	Exp(B)	95% CI for Exp(B)
Previous IUFD	3.947	1.312	0.003	51.773	3.959 – 677.075
Previous preterm birth	2.437	1.065	0.022	11.441	1.419 – 92.222
Others	—	—	>0.05	—	—

Table 9: Comparison of age by depression status among primiparous women

Depression Diagnosis	N	Mean Age (years)	SD	t	p-value
Not Depressed	58	27.62	4.61	0.651	0.537
Depressed	5	26.20	8.04		

Table 10: Logistic regression for predictors of PPD among primiparous women

Risk Factor	B	S.E.	p-value	Exp(B)	95% CI for Exp(B)
Family history of mental illness	2.503	1.089	0.021	12.222	1.447 – 103.202
Constant	-2.909	0.593	<0.001	0.055	—

Abbreviations: Exp(B) = Odd ratio; SIG= significant; C.I =Confidence interval; S.E =standard error

Table 11: Assessment of residents' ability to administer EPDS (n = 30)

Quality Indicator (Question)	Correct (n)	Incorrect (n)	Total (n)
A (Q1)	18	12	30
B (Q2)	16	14	30
C (Q3)	2	28	30
D (Q4)	0	30	30
E (Q5)	1	29	30
F (Q6)	1	29	30
G (Q7)	2	28	30
H (Q8)	12	18	30

Discussion

This study was designed to determine the prevalence, patterns, and correlates of postpartum depression (PPD) among women delivering at a single tertiary center in South-Eastern Nigeria. It further evaluated the diagnostic validity of the Edinburgh Postnatal Depression Scale (EPDS) at different cut-off points in early and late puerperal periods and assessed the competence of obstetric resident doctors in administering the EPDS. Such evidence-based insights are essential to developing effective screening and preventive strategies for PPD in our environment.

The prevalence of PPD using the EPDS at the 14th day postpartum was 23.8% (cut-off 9) and 24.2% (cut-off 12), while at six weeks postpartum the prevalence declined to 9.4% and 7.7%, respectively, for mild and major depression.. Psychiatric assessment revealed PPD rates of 8.4% at the second day and 7.7% at six weeks postpartum. The higher prevalence obtained using the EPDS compared to psychiatric interviews, particularly on day two postpartum, may be attributed to the EPDS's primary focus on affective symptoms without adequate assessment of somatic or biological symptoms [16]. Emotional fluctuations in the immediate postpartum period can transiently mimic depressive features, thus inflating apparent prevalence early after delivery [17-22]. By six weeks, emotional stabilization likely explains the more accurate alignment between EPDS and psychiatrist-administered diagnoses.

This study identified distinct correlates of PPD among multiparous and primiparous women, emphasizing the need to examine risk profiles separately. Among multiparous women, bivariate associations revealed significant relationships between PPD and inadequate physical support from the husband, history of sadness or alienation, caesarean delivery, previous intrauterine fetal death (IUFD), preterm birth, financial challenges, hospital detention due to unpaid bills, and difficulty with breastfeeding. However, on logistic regression analysis, only previous IUFD and preterm delivery remained significant predictors.

The association between poor spousal support and PPD has been reported in several studies [23,24]. Interestingly, although our findings showed a positive relationship on univariate analysis, this association did not remain statistically significant after adjusting for confounders. Similarly, prior feelings of sadness and alienation, previously reported as predictive factors [25]. we're not retained in multivariate models, suggesting a secondary effect possibly mediated through obstetric or socioeconomic stressors.

Caesarean delivery, often identified as a stressor associated with maternal emotional distress [26,27], showed an initial correlation but lost significance after regression adjustment. This may reflect improvements in perioperative counseling and acceptance of cesarean delivery within contemporary obstetric practice in Nigeria.

In contrast, intrauterine fetal death remained a strong predictor. In our context, women with perinatal loss are often accommodated alongside mothers with live births, leading to heightened grief and emotional isolation. The combination of personal loss and environmental triggers can intensify depressive symptoms. Similar findings were reported by Blackmore et al. [28] and Surkan et al. [29], both of whom identified perinatal death as a major risk factor for PPD. The literature offers limited data on whether segregating women experiencing perinatal loss into specialized postnatal units could reduce emotional distress, an area that warrants further research.

Preterm birth also independently predicted PPD. The stress of neonatal prematurity, prolonged infant hospitalization, and parental anxiety about survival outcomes contribute to sustained emotional strain [30].. One of the women who developed depression at six weeks had no other risk factor apart from prolonged neonatal admission. Similar associations have been reported by Ukpong [31]. whose study documented a 19.3% rate of PPD among mothers of preterm infants, and by Poehlmann et al. [32]. who also reported elevated psychological morbidity in this group. These findings strengthen the argument for routine psychological assessment and support programs for mothers of preterm infants.

Although financial hardship and post-delivery hospital detention were statistically significant in this study, they did not retain significance after regression analysis. Nevertheless, socioeconomic adversity remains a plausible pathway through which maternal stress may amplify vulnerability to depression [33,34]. Difficulty initiating breastfeeding, previously associated with depressive risk in studies by [35]. was also identified here but not confirmed after adjusting for confounders. HIV infection, often linked with higher depressive burden in earlier studies [15]. did not show a significant association ($p > 0.05$). This may reflect the positive impact of effective antiretroviral therapy, reduced stigma, improved counseling, and integration of HIV-positive mothers into general postnatal care, which have collectively mitigated psychosocial distress among affected women [36,37]. For primiparous women, only family history of psychiatric illness remained a significant independent predictor of PPD, consistent with previous reports on genetic and familial

predispositions [38]. Cultural awareness of hereditary mental disorders in Igbo society highlights the traditional inclination to screen for such family history during marital arrangements, reflecting long-standing community recognition of hereditary transmission risks.

Maternal age exhibited a marginally higher risk among younger women, though not statistically significant ($p > 0.05$). This contrasts with the findings of Muraca and Joseph [38], which indicated a higher PPD risk among older mothers in Canada, highlighting possible sociocultural and circumstantial differences.

The EPDS demonstrated variable performance depending on cut-off and timing. On day 14 postpartum, a cut-off of 9 yielded higher sensitivity (79%) but lower specificity (54.6%), while a cut-off of 12 offered lower sensitivity (68%) but better specificity (80.6%). At six weeks, EPDS achieved 100% sensitivity relative to psychiatric diagnosis, confirming its validity for screening when timed appropriately. These results support prior studies using cut-offs of 9 and 12 for mild and major depression, respectively [39–42]. The findings also suggest that cut-off 9 is more effective for early screening, whereas cut-off 12 offers greater predictive accuracy at six weeks.

However, the evaluation of resident doctors' performance revealed insufficient competence in the correct administration and interpretation of the EPDS. This gap underlines the need for structured training within Obstetrics and Gynaecology residency programs to enhance routine mental health screening, ensure accurate case identification, and promote early intervention.

Clinically, these findings emphasize that postpartum depression is a significant but often under-recognized morbidity among Nigerian women [43]. Routine screening using validated tools like the EPDS, supplemented by psychiatric evaluation when indicated, should be integrated into standard postnatal care, ideally at the six-week postnatal visit. Enhanced training for obstetric residents and midwives in mental health screening is essential to ensure early detection and referral. From a research perspective, future studies should explore longitudinal trajectories of postpartum depression beyond six weeks and evaluate interventions aiming to reduce stress following perinatal loss or preterm birth. Investigating the psychological impact of ward separation for bereaved mothers could also yield valuable insights for policy and clinical practice.

A major strength of this study lies in its robust diagnostic approach, involving psychiatric confirmation using structured clinical interviews, the gold standard for diagnosing major depressive disorders. Moreover, the psychiatrist conducting these interviews was blinded to participants' EPDS scores, minimizing interviewer bias. The study also provided dual time-point assessments, offering insight into both transient and persistent postpartum depressive patterns. Additionally, its focus on distinct parity subgroups (primiparous vs. multiparous women) enriched understanding of unique risk pathways, providing valuable data for context-specific interventions in low- and middle-income settings. Despite its contributions, the study had limitations. Its single-center, semi-urban design may limit generalizability to rural populations. The exclusion of women developing depression beyond six weeks postpartum may have underestimated overall prevalence. The reliance on retrospective self-reporting for certain variables could introduce recall bias, and some respondents might have under- or over-reported depressive symptoms due to personal beliefs or stigma. Furthermore, non-participation of certain women, possibly due to fear of psychiatric labeling, could influence representativeness.

Conclusion

At 14 days postpartum, the prevalence of PPD measured using the EPDS was 23.8% and 24.2% at cut-off scores of 9 and 12, respectively. By six weeks postpartum, these rates declined to 9.4% and 7.7%. Psychiatric interviews confirmed PPD prevalence rates of 8.4% at 14 days and 7.7% at six weeks postpartum. These findings support the EPDS as a valid and practical screening tool; however, psychiatric evaluation remains necessary for a definitive diagnosis. Among multiparous women, previous intrauterine fetal death and preterm birth were key predictors of PPD, while family history of psychiatric illness was the main correlate among primiparas. The need for routine PPD screening, particularly at six weeks postpartum, cannot be overemphasized. Given that no obstetric resident demonstrated full competence in EPDS administration, it is imperative to incorporate mental health screening and diagnostic training into the residency curriculum. Routine screening for PPD should be encouraged as part of postnatal care, ensuring early identification, effective intervention, and holistic support for maternal and neonatal wellbeing.

Conflict of Interest Statement

The authors report no conflicts of interest concerning this work.

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Ethical Statement

Ethical approval for this study was granted by the Research Ethics Committee of Nnamdi Azikiwe University Teaching Hospital, Nnewi, Nigeria, under approval number NAUTH/CS/66/Vol.8/90. Permission was obtained from both the tertiary hospital and the focal person of the postnatal clinic before the study began. All participants provided written informed consent after receiving a comprehensive explanation of the study's objectives and significance. Participation was entirely voluntary. Each participant's consent was obtained in writing following a thorough explanation of the study's purpose. Personal identifiers were replaced with codes for confidentiality. Face-to-face interviews were conducted privately and individually. Data were securely stored in a locked cabinet. This study complied with the principles outlined in the Declaration of Helsinki.

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Availability of Data and Materials

Data is provided within the manuscript or supplementary information files.

Author Contributions

CAO is the principal investigator and conceived the study, while GUE, COE and JII supervised the study. Data assessment was performed by CAO and GUE. Calculations and data interpretation were performed by GUE, JII, PNO, CGO, ACE, IJO, OCE and CAO. Statistical analysis was performed by CAO and JII. CAO and COE prepared tables and figures. The first draft of the paper was written by CAO and GUE, while JII, PNO, CGO, IJO, OCE, JIA, CCO, CBO and ACE critically revised the paper. All authors reviewed and edited the final draft. All authors critically reviewed the article, gave final approval of the version to be published, agreed on the journal to which the article has been submitted, and agreed to be accountable for all aspects of the work.

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