Psychosocial and Obstetric Factors as Predictors of Postpartum Depression Among Women Attending Clinic in Makurdi Metropolis

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Abstract
Postpartum depression is one of the growing mental health challenges in Nigeria. In this light, this study examined psychosocial and obstetric factors as predictors of postpartum depression among postnatal women attending clinic in Makurdi metropolis. The study employed a cross-sectional survey design involving 213 postnatal women, whose ages ranged from 18 to 47 years with a mean age of 32.72 and standard deviation of 13.09. The Rosenberg Self-esteem Scale, and Edinburg Postnatal Depression Scale were used in data collection. Data analysis involved the use of Multiple Linear Regression and Hierarchical Multiple Regression. Results showed that psychosocial factors (self-esteem and employment status) significantly and negatively predicted postpartum depression among postnatal women in Makurdi metropolis [R=-.352, R^2=.123, F(2,211)=6.551, p<.05]. Psychosocial factors explained 12.3% of the total variance observed in postpartum depression among the postnatal women. Also, results indicated that obstetric factors (maternal age and birthing method) significantly and positively predicted postpartum depression among the postnatal women [R=.443, R^2=.196, F(2,211)=9.195, p<.01]. Obstetric factors accounted for 19.6% of the total variance observed in postpartum depression among the women. Further, hierarchical regression analysis indicated that psychosocial and obstetric factors significantly and positively predicted postpartum depression among the postnatal women. The model jointly accounted for 22.7% of the variance observed in postpartum depression, with a significant ΔF=20.33 after controlling for the effect of demographic variables. The study recommended that management of hospitals should put in place psychological services to help in enhancing self-esteem deficits among postnatal women among other recommendations.

Key words: *Psychosocial, Obstetric Factors, Postpartum Depression, Women Attending Clinic*

Introduction

Postpartum depression (PPD) is recognized as an important mental health concern affecting women during the postpartum period. Childbearing is generally considered an exciting experience for parents; however, the process may be associated with significant challenges during pregnancy, labour, and especially after birth. Although considerable attention is often directed toward complications occurring during labour, less attention is given to difficulties experienced during the postpartum period. Following childbirth, focus frequently shifts to the newborn, while mothers may experience emotional and psychological challenges that remain unnoticed. One of such challenges is PPD, a condition characterized by symptoms such as tearfulness, hopelessness, emotional instability, feelings of guilt, sleep disturbances, and loss of appetite. While childbirth can be a joyful experience, it may also be emotionally draining and stressful, resulting in depressive symptoms that affect women's quality of life, social functioning, and productivity. PPD affects approximately 10 to 15% of mothers globally and

may begin immediately or within two to six weeks after delivery, sometimes lasting for more than one year (Thomson & Sharma, 2017). PPD has significant consequences for mothers and can negatively influence the long-term cognitive and emotional development of children. Furthermore, it may progress into major depression and increase risks of severe health outcomes, including mortality. Despite these consequences, PPD remains underdiagnosed and under-recognized in many countries. Evidence indicates that the prevalence of postpartum depression is approximately three times higher in developing countries than in developed countries due to varying contributing risk factors (Adeyemo et al., 2020). In Africa, the estimated prevalence is 18.4%, although variations exist across countries, including Uganda (43.0%), Cameroon (23.4%), Ethiopia (13.1%), Ghana (3.8%), and Morocco (11.6%). In Nigeria, prevalence rates differ across regions, with studies reporting values ranging from 10.7% to 44.5% (Adeyemo et al., 2020). Recent studies in Makurdi have similarly shown that factors such as stress, emotional violence, and lack of social support are associated with postpartum depression among nursing mothers (Igo et al., 2021). Psychosocial factors have been associated with postpartum depression among nursing mothers. One such factor is self-esteem and employment status. Psychosocial factors refer to characteristics that influence individuals psychologically and socially and affect their physical and mental health outcomes. Self-esteem is described as an individual's subjective evaluation of personal worth, involving beliefs and emotional states such as pride, shame, triumph, and despair. Self-esteem is considered important because it predicts outcomes including health behaviour, relationship satisfaction, academic performance, and overall wellbeing. Individuals with high self-esteem generally demonstrate confidence in their abilities, trust in personal judgment, resilience in dealing with challenges, and an ability to maintain positive relationships and social interactions. They are more likely to solve problems effectively, accept both positive and negative emotions, resist manipulation, and work collaboratively with others.

Conversely, low self-esteem may arise from several factors, including genetics, physical appearance, socioeconomic circumstances, mental health problems, social stigma, and negative emotional experiences. Individuals with low self-esteem often display excessive self-criticism, dissatisfaction, hypersensitivity to criticism, fear of mistakes, chronic indecisiveness, perfectionistic tendencies, and excessive efforts to gain approval from others. They may also demonstrate pessimism, defensiveness, hostility, and persistent feelings of guilt. Research further suggests that chronic low self-esteem increases the likelihood of psychological disorders and psychotic symptoms (Barbot et al., 2019). Since self-esteem influences emotional and psychological functioning, the orientation of a nursing mother's self-esteem may significantly affect postpartum outcomes and contribute differently to postpartum depression.

Employment status is another psychosocial factor examined in relation to postpartum depression. Employment status refers to the type or nature of work in which an individual is engaged, including full-time employment, part-time employment, self-employment, temporary work, unemployment, and other forms of engagement. Existing evidence suggests a significant relationship between maternal employment and postpartum depression (Hidalgo-Padilla et al., 2023; Abiama & Ezeh, 2020). However, this relationship remains insufficiently understood among women attending clinics in Makurdi metropolis, necessitating further investigation.

Relatedly, obstetric factors associated with postpartum depression include maternal age and birthing method. Maternal age refers to the age of a mother at the time of childbirth and may be understood through dimensions such as chronological, biological, psychological, functional, and social age. Previous studies indicate that maternal age may influence postpartum depression outcomes (Bradoshaw et al., 2022; Silverman et al., 2017). Similarly, birthing method, which includes natural childbirth and Caesarean section, has been associated with postpartum depression (Ahmadpour et al., 2023). Natural childbirth involves minimal medical

intervention, while Caesarean section refers to surgical delivery through abdominal and uterine incisions.

Literature Review

Psychosocial Factors and Postpartum Depression

Bdier et al. (2023) investigated whether self-esteem and social support mediated the association between posttraumatic stress symptoms and postpartum anxiety among Palestinian women. Berlin Social Support Scales, Postpartum Specific Anxiety Scale, Impact of the Event Scale, and Rosenberg self-esteem scale were administered to 408 Palestinian women recruited from health centers in northern of the West Banks/Palestine using a convenience sample. The findings revealed that postpartum anxiety positively correlated with posttraumatic stress symptoms, and negatively correlated with social support, and self-esteem. Moreover, posttraumatic stress symptoms negatively correlated with social support, and self-esteem. Results of structural equation modeling (SEM) showed a good fit of the hypothesized model. The study concluded that, given this, it is recommended to conduct similar studies with diverse samples in the Palestinian society. It would also be useful for health professionals who work with Palestinian pregnant women (i.e., mental health providers, nurses, midwives, physicians) to assess self-esteem and social support in an effort to identify women who may be at greater risk of developing postpartum anxiety. It may also be worthwhile to develop and implement interventions during pregnancy which serve to enhance a women's sense of self-esteem during this particularly stressful period. Wake et al. (2022) assessed the magnitude and determinant factors of postpartum depression among mothers attending their postnatal and vaccination services at public health institutions in Addis Ababa, Ethiopia. Health institution-based cross-sectional study was conducted among 461 postnatal mothers attending public health institutions in Addis Ababa from 15 May 2021 to 15 July 2021. A multistage sampling technique was employed to select the public health institutions and a systematic random sampling method was used to get selected, postnatal mothers. Epidata version 3.1 and SPSS version 25 were used for data entry and analysis, respectively. *P*-value ≤0.05 was used as a cut point of statistical significance in multivariable binary logistic regression. Findings showed that, from total postnatal mothers 91(19.7%) of them had postpartum depression. Occupational status, marital status, income management, sex of baby, history of child death, unplanned pregnancy, negative life event, substance use during pregnancy, history of depression, and marriage satisfaction were determinant factors of postpartum depression. The study concluded that, the prevalence of postpartum depression in this study is high compared to national findings. Occupational status, marital status, income management, sex of baby, history of child death, unplanned pregnancy, negative life event, substance use during pregnancy, history of depression, and marital satisfaction were determinant factors of postpartum depression. The study recommended among others that healthcare professionals working in the maternal and child health unit should routinely screen postpartum depressive symptoms and link them to mental health services. Han and Kim (2020) examined the relationship between depression and self-esteem in postnatal Korean women using longitudinal data and an autoregressive cross-lagged analysis. This study was conducted in postpartum women who had consistently participated in the Panel Study on Korean Children (PSKC) from Wave 1 through to Wave 8. The study results showed that depression and self-esteem in postnatal women had a significant positive correlation over time. Moreover, the longitudinal relationship between depression and self-esteem in postnatal women was affected by weight gain during pregnancy. This study overcomes the limitations of cross-sectional studies by using longitudinal data on the correlations between depression and self-esteem in postnatal women; the study findings may be used in developing weight control programs for pregnant and postnatal women.

Nnadozie and Nweke (2017) observed that, postpartum depression is a severe mental health disorder, characterized by persistence of low moods, feelings of being worthless, being hopeless and sad, that continuously affects lot of women that just gave birth. Understanding the internal and external factors involved in development and manifestation of postpartum depression has important implication for the practice of counseling psychology and general wellbeing of women. The study investigated the role of self-esteem, social support and age on postpartum depression among 116 Nigerian women. Edinburgh Postnatal Depression Scale, Social Provision Scale, and Index of Self-esteem were used to measure postpartum depression, social support and self-esteem respectively. The results showed a significant effect of self-esteem and social support on postpartum depression but not age. The interaction effects were not significant.

Obstetric Factors and Postpartum Depression

Bradoshaw et al. (2022) evaluated the association between maternal age, parity, gestational number (singleton vs twin), newborn gender and self-reported postpartum depressive symptoms (PDS) in a large multinational sample using survey data from a digital telephone application. Women using the Flo app answered a survey (available in 10 languages) from January 2018 to April 2020. A survey question asking about emotional state was used to determine the presence of PDS. Chi-squared statistics were used to compare groups. A weighted mean prevalence was calculated based upon the socioeconomic status and reproductive population of each country in 2020. Finding showed that, over a million women from 138 countries participated. Of all respondents, 9.4% endorsed PDS. The weighted mean prevalence of PDS was 11%. The researchers found that PDS decreased with advancing age. First-time mothers reported higher rates of PDS. Twin births were associated with a higher symptom burden than singleton births and mothers of twins in the oldest age group reported the greatest burden. The researchers did not find a clinically significant difference in rates of PDS between mothers of singleton girls and boys. They concluded that, to their knowledge, this study is the first to examine risk factors for postpartum symptoms using the same survey across a large international population. The results can further research and clinical aims to identify and treat maternal depression more effectively. Adeyemo et al. (2020) determined the prevalence of postpartum depression and its predictors among postnatal women in Lagos. A descriptive cross-sectional study was conducted among 250 mothers in Eti-Osa Local Government Area of Lagos State, Nigeria, attending six Primary Health Care centers for infant immunization at six weeks post-delivery. Data was collected using a pretested semi-structured interviewer administered questionnaire which included the Edinburgh Postnatal Depression Scale. Analysis was carried out using SPSS version 23TM. Chi-square and logistic regression analyses were used to determine associations and predictive relationships between various factors and the presence of postpartum depression. The level of significance was set at <0.05. Findings showed that, the prevalence of postpartum depression was 35.6%. Multiparity, delivery by cesarean section, mother being unwell after delivery, and not exclusively breastfeeding the baby were the factors linked with postpartum depression. Following multiple logistic regression, having postpartum, not getting help with caring for the baby, experiencing intimate partner violence and having an unsupportive partner were identified as predictors of postpartum depression. The study revealed a high prevalence of postpartum depression, identifying both the obstetric and psychosocial predictors. Social support for women both in the pre- and postnatal periods and routine screening of women for postpartum depression should be encouraged for early detection and immediate intervention. Agbaje et al. (2019) assessed the prevalence of depression, anxiety and associated factors in a sample of postnatal women. A community-based cross-sectional study was conducted on 270 postpartum women attending public health facilities in the study area. Postnatal depression was measured using

the Edinburgh Postnatal Depression Scale (EPDS) and anxiety was measured using the Hospital Anxiety and Depression Scale (HADS-A). Data on maternal demographics, health characteristics, pregnancy-related characteristics, labor and birth characteristics, were collected via structured questionnaire. Binary Logistic and multinomial logistic regression analyses were carried out to identify the factors associated with depressive and anxiety symptoms in women. Findings showed that, the EPDS identified 92 women (34.6%) as possibly depressed (using a cut-off ≥13) while the HADS-A identified 89 women (33.3%) with anxiety symptoms (using a cut-off + 8). A total of 69 women were identified with symptoms of anxiety and depression (anxious-depression). The multinomial regression analysis (MLA) showed that the history of depression, and being a mother aged 15–29 years had a significant effect on the development of anxiety symptoms in women. Although not significant, mother's income level, and being a younger mother were more likely to predict depressive symptoms in postnatal women. Attendance at postnatal care services in the PHCs was significantly associated with anxious-depressed in the studied postnatal women. In conclusion, the findings of this study showed a direct association between depressive symptoms, anxiety and younger maternal age, rural residence, and low income. The higher prevalence of depressive and anxiety symptoms in this study is a call for postnatal care that is culturally sensitive, patient-centered, accessible and affordable by women, most importantly poor and rural women. Silverman et al. (2017) noted that, postpartum depression (PPD) can result in negative personal and child developmental outcomes, and observed that, only a few large population-based studies of PPD have used clinical diagnoses of depression and no study has examined how a maternal depression history interacts with known risk factors. The objective of the study was to examine the impact of a depression history on PPD and pre- and perinatal risk factors. Nationwide prospective cohort study of all women with live singleton births in Sweden from 1997 through 2008 were recruited for the study. Relative risk of clinical depression within the first year postpartum and two-sided 95% confidence intervals were considered. Findings showed that, the relative risk of PPD in women with a history of depression was estimated at 21.03 (confidence interval: 19.72–22.42), compared to those without.

Hypotheses

The study tests the following hypotheses

i. Psychosocial factors will significantly predict postpartum depression among women attending clinic in Makurdi metropolis.

ii. Obstetric factors will significantly predict postpartum depression among women attending clinic in Makurdi metropolis.

iii. Psychosocial factors and obstetric factors will jointly predict postpartum depression among women attending clinic in Makurdi metropolis.

Method

Design

The study adopted a cross-sectional survey design. A cross-sectional survey design examines data from respondents in various dimensions at a particular point in time (Shindi, 2017). This design is considered appropriate because the study did not manipulate any variables, but only observed the relationship between the independent and dependent variables of this study.

Population

The population of this study comprised 475 women attending post-natal clinic in four hospitals in Makurdi metropolis including; Federal Medical Centre Makurdi, Benue State University Teaching Hospital Makurdi, Family Support Centre Makurdi, and General Hospital Makurdi (Hospital Records, 2024).

Participants

Participants comprised a sample of 213 postnatal women, whose ages ranged from 18 – 47 (Mean age = 32.72, SD=13.097) currently attending post-natal clinics in Federal Medical Centre, Benue State University Teaching Hospital, Family Support Centre, and General Hospital all in Makurdi Local Government Area of Benue State.

Sampling Technique

Purposive sampling method was used in selecting the public hospitals from which participants were drawn to take part in the study. In similar vein, purposive sampling was adopted in selecting the participants from the hospitals. By this procedure, only those who were available and willing to take part in the study were issued copies of the questionnaire to respond to.

Sample Size Determination

The sample size for the study comprised 213 participants determined using the Raosoft online sample size determination calculator at: www.raosoft.com. The online sample size calculator has specifications into which figures are imputed as follows:

Margin of error - 5%
Confidence level - 95%
Population size - 475
Response distribution - 50%
Sample size = 213

Afterwards, proportional sampling method based on Halleck's (2001) formula for proportional distribution was used to determine the sample for each of the participating hospitals as follows:

$$\left(\frac{n}{N}\right) Ni$$

n = Population Size Per Stratum
N = Total Population
Ni = Determined Sample Size

For example, Family Support Centre has 182 persons attending antenatal care at the time. To get the proportion, the number was divided by the total population of women in the four participating hospitals and multiplied by the sample as follows:

Family Support Centre: $\frac{182}{475}$ x 213 = 81
Fed. Med. Centre: $\frac{171}{475}$ x 213 = 76
BSUTH: $\frac{93}{475}$ x 213 = 42
Gen. Hospital: $\frac{29}{475}$ x 213 = 14

Instruments

i. Rosenberg Self-esteem Scale

This scale was developed by Rosenberg (1965). The scale is a 10-item self-report measure with predetermined response patterns ranging from strongly disagree (0) to strongly agree (3). The scale demonstrated a test-retest reliability of .85 and .88 over a period of 2 weeks, indicating excellent stability. The scale also demonstrated excellent concurrent validity with the State Self-esteem Scale, with a significant positive correlation ($r = 0.530$, $p<0.001$), indicating homogeneity between the two scales. This means that, the two scales (Rosenberg Self-Esteem Scale and State Self-Esteem Scale) measures the same or similar construct. The scale generates scores that range from 0 - 30. Items: 1, 2, 4, 6 and 7 are scored directly (For instance: Strongly agree = 3; Agree = 2; Disagree = 1; and Strongly Disagree = 0). On the other hand, items: 3, 5,

8, 9 and 10 are scored in the reversed order (For instance: Strongly agree = 0; Agree = 1; Disagree = 2; and Strongly disagree = 3). Scores between 15 and 25 are within normal range, while scores below 15 suggest low self-esteem.

ii. Edinburgh Postnatal Depression Scale (EPDS)

The scale was designed by Cox et al. (1987). It is a 10-item scale used in measuring depression among pregnant women or women who have already given birth, using a 4-point scale with options ranging from 0 – 3. Items 3, 5 to 10 are scored in the reverse direction, while the remaining items are scores as printed. Individual scores on the scale are added, and scores of 12 or 13 and above as the case may be suggests that the mother is likely to be suffering from depression, and should seek medical attention. The psychometric properties of the EPDS in primary health care as reported by (Cox, *et al.* 1987) were: 86 % sensitivity (correctly identifying true cases), 78 % specificity (correctly identifying people without the condition) and 73 % positive predictive value (proportion of respondents scoring positive in the test who had a mental disorder diagnosed by clinical interview). The Edinburgh Postnatal Depression Scale (EPDS) is one of the most widely used screening instruments for assessing symptoms of perinatal depression and anxiety.

Pilot Study

In testing the reliability of the instruments for this study, a pilot study was conducted using 24 women from General Hospital Otukpo and General Hospital Gboko. Their maternal ages ranged from 18 – 44 (Mean age = 31.63, SD = 9.26). Of this number, 17(70.8%) had given birth through natural method, while 7(29.2%) was through Cesarean method. Furthermore, 19(79.2%) of the participants were married; 3(12.5%) were single; while 1(4.2%) each was separated and widowed respectively. Moreover, 6(25.0%) were civil servants; 5(20.8%) were business women; 5(20.8%) were artisans, while 8(33.3%) were unemployed. Findings from the pilot study revealed that, the 10-item Rosenberg Self-esteem scale yielded a Cronbach's alpha reliability coefficient of .76. All items of the scale had correlated item-total correlation scores above the .30 cut-off mark. This means that, all 10-items of the Rosenberg Self-esteem scale are reliable for inclusion in the main study. Further, the 10-item Edinburg Postnatal Depression Scale yielded a Cronbach's alpha reliability coefficient of .83. Item 5 of the scale (I have felt scared or panicky for no good reason) had a correlated item-total correlation score of .291, which is less than the .30 cut-off mark. Based on this, item 5 of the scale will not be included for data collection in the main study. On the whole, the two instruments for data collection (Rosenberg Self-esteem Scale and the Edinburgh Postnatal Depression Scale) had adequate Cronbach's alpha reliability coefficients above the .70 required cut-off point for scale reliability, hence shown to be fit for data collection on the population of women attending clinic in Makurdi metropolis.

Procedure

The researcher received a letter of introduction from the Head of Department of Psychology, Rev. Fr. Moses Orshio Adasu University, Makurdi to be used for self-introduction. The letter was taken to the management of the participating hospitals, seeking permission to carry out study using participants from the hospitals. The researcher obtained written ethical clearance from Federal Medical Centre, Benue State University Teaching Hospital, and Family Support Clinic Makurdi, while verbal permission was obtained from General Hospital Makurdi. Thereafter, the researcher proceeded to administer the questionnaire to participants that were available and willing to take part in the study. To achieve a seamless procedure, the researcher established rapport with the management of the participating hospitals. The researcher also

enlisted the services of research assistants to help in the administration of questionnaires. The completed questionnaire was thereafter retrieved and taken for analysis.

Data Analysis

Descriptive statistics such as frequency counts, mean and standard deviation were used in analysing the demographic characteristics of the respondents. The study used Multiple Linear Regression in testing hypothesis one and two, while Hierarchical Multiple Regression was used in testing hypothesis three.

Results

The results obtained from the test of hypotheses are presented as follows.

Table 1: Summary of Multiple Linear Regression showing the Prediction of Psychosocial Factors on Postpartum Depression among Women attending Clinic in Makurdi Metropolis

Predictors	R	R^2	df	F	P	β	t	p
Constant	-.352	.123	2,211	6.551	.000		9.451	.000
Self-Esteem						-.272	-2.197	.002
Employ Status						-.389	-6.758	.000

The result in Table 1 showed that, psychosocial factors significantly and negatively predicted postpartum depression among women attending clinic in Makurdi metropolis [R=-.352, R^2=.123, F(2,211)= 6.551, p<.01]. This means that, women with high scores on psychosocial factors (self-esteem and employment status) are likely to experience low levels of postpartum depression. The results further indicated that, psychosocial factors explained 12.3% of the total variance observed in postpartum depression among the women. Based on this finding, hypothesis one was confirmed. In terms of the independent contributions of the dimensions of psychosocial factors on postpartum depression, finding indicated that, employment status made the highest significant negative contribution to postpartum depression (β=-.389, t=-6.758, p<.01), followed by self-esteem (β=-.272, t=-2.197, p<.05). This suggests that, women who are employed, and who have high self-esteem are likely to experience low levels of postpartum depression among women attending clinics in Makurdi metropolis.

Table 2: Summary of Multiple Linear Regression showing Prediction of Obstetric Factors on Postpartum Depression among Postnatal Women in Makurdi Metropolis.

Predictors	R	R^2	df	F	P	β	t	p
Constant	.443	.196	2,211	9.195	.000		11.278	.000
Maternal Age						-.312	-4.111	.000
Birth Method						.544	7.641	.000

Results of Multiple Linear Regression in Table 2 showed that, obstetric factors significantly predicted postpartum depression among women attending clinic in Makurdi metropolis [R=.443, R^2= .196, F(2,211)=9.195, p<.01]. This means that, when obstetric factors are high, postpartum depression is also likely to be high. Results also indicated that, obstetric factors accounted for 19.6% of the total variance observed in postpartum depression among the women. Based on this result, hypothesis two was confirmed. On the independent contributions of the dimensions of obstetric factors to postpartum depression, finding showed that, birth method made a significant positive contribution (β=.544, t=7.641, p<.01). This means that, when maternal age is high, postpartum depression is likely to be high among the women. On the other hand, maternal age made a significant negative contribution to postpartum depression among the women (β=-.312, t=-4.111, p<.01). This suggests that, birthing methods considered

as high in this study (Natural Birth) is likely to lead to low rates of postpartum depression among women in Makurdi metropolis.

Table 3: Summary of Hierarchical Multiple Linear Regression showing joint prediction of Psychosocial and Obstetric Factors on Postpartum Depression among Women attending Clinic in Makurdi Metropolis

Model	Predictors	Step 1 β	Step 2 B	Step 3 β
Model 1	MarStat.	.194*	.135	.114
Demographics	Hosp.	.188*	.179*	.152
Model 2				
Psychosocial Factors	Self-esteem		-.193*	-.221*
	Employment Status		-.355**	-.320**
Model 3				
Obstetric Factors	Maternal Age			.274**
	Birth Method			.216**
	R	.155	-.441**	.477**
	R^2	.024	.194	.227
	ΔF	3.002	17.32	20.33

** p is significant at the 0.01 level (One-tailed)
* p is significant at the 0.05 level (One-tailed)

The result of hierarchical Multiple Regression in Table 3 showed that, in Model 1 when demographic was tested, the model did not significantly predict postpartum depression among women attending clinics in Makurdi Metropolis [R=.155, R^2=.024, F(1,212)=3.002, p>.05]. Furthermore, the Model explained 2.4% of the total variance observed in postpartum depression among the women. In Model 2, when psychosocial factors were introduced, the Model significantly and negatively predicted postpartum depression among the postnatal women [R=-.441, R^2=.194, F(2,211)=17.32, p<.01]. Results also indicated that, the Model accounted for 19.4% of the variance observed in postpartum depression among the postnatal women. Moreover, in Model 3 when obstetric factors were introduced, the Model significantly positively predicted postpartum depression [R=477, R^2=.227, F(2,211)=20.33, p<.01]. The result indicated that, the Model accounted for 22.7% of the total variance observed in postpartum depression, with a significant ΔF (F-change) of 20.33 after controlling for the influence of demographic. Based on this finding, hypothesis three was confirmed.

Discussion

Hypothesis one tested the predicting power of psychosocial factors on postpartum depression among postnatal women in Makurdi Metropolis. Findings indicated that, psychosocial factors (self-esteem and employment status) significantly negatively predicted postpartum depression. This means that, postnatal women in Makurdi metropolis with high self-esteem and high employment status are not likely to experience postpartum depression. This finding is consistent with that of Han and Kim (2020) found a significant relationship between self-esteem and postpartum depression among women in Korea; Nnadozie and Nweke (2017) found significant effect of self-esteem on postpartum depression among Nigerian women; Bdier, et al. (2023) found significant association between self-esteem and postpartum anxiety among Palestinian women; Wake, et al. (2022) found that occupational status was significantly related

to postpartum depression among mothers attending postnatal and vaccination services at public health institutions in Addis Ababa, Ethiopia. The implication of this is that, it has established empirically that psychosocial factors are linked to postpartum depression among postnatal women in Makurdi metropolis. This holds potential for therapeutic purposes aimed at managing postpartum depression among postnatal women in the study area or elsewhere as the case may be. Hypothesis two tested the influence of obstetric factors on postpartum depression among postnatal women in Makurdi metropolis. Findings indicated that obstetric factors (maternal age and birthing method) significantly positively influenced postpartum depression among postnatal women in Makurdi metropolis, and explained 19.6% of the total variance observed in postpartum depression among the women. This means that, when obstetric factors such as maternal age is high, postpartum depression is also likely to be high. Also, when birth method is high, postpartum depression is also likely to be high. It should be elucidated that, high birthing method as intended in this study refers to birth through Cesarean section. This implies that, women who give birth through Cesarean section are likely to experience postpartum depression. This finding agrees with that of Adeyemo et al. (2020) found that obstetric factors such as delivery through Cesarean section was significantly linked to postpartum depression among mothers in Eti-Osa Local Government Area of Lagos State, southwest Nigeria; Agbaje et al. (2019) found significant association between maternal age and postpartum depression among postnatal women; Bradoshaw et al. (2022) found that postpartum depression symptoms decreased with advancing age and was higher among first-time mothers; while Silverman et al. (2017) found that, maternal age was associated with postpartum depression among women in Sweden. By implication, this finding has shown that, obstetric factors are potent predictors of postpartum depression among postnatal women in Makurdi metropolis. This holds positive implications in the management and treatment of postpartum depression among the study population in the study area or elsewhere. To elucidate, it means that, the age and birthing method of women need to be taken into consideration in the prevention, management and treatment of postpartum depression among the population under investigation. Hypothesis three tested the joint prediction of psychosocial and obstetric factors on postpartum depression among postnatal women in Makurdi metropolis. Findings based on the hierarchical model indicated that, in model 1 when marital status was tested, the model did not significantly predict postpartum depression. This means that, the marital status of a pregnant woman is not related with her experiencing of postpartum depression or not. In model 2 when psychosocial factors were introduced, the model significantly predicted postpartum depression and explained 19.4% of the total variance observed in postpartum depression among the postnatal women. This means that, psychosocial factors are related to postpartum depression among postnatal women in Makurdi metropolis. In Model 3 when obstetric factors (maternal age and birthing method) were introduced, the model significantly predicted postpartum depression among the postnatal women. The model also explained 22.7% of the variance observed in postpartum depression among the women. This means the higher the maternal age and birthing method, the higher the likelihood of experiencing postpartum depression among the women. This finding holds implication for therapeutic intervention aimed at managing and treating postpartum depression among postnatal women in Makurdi metropolis.

Conclusion

The conclusion of this study derives from its findings. In this light, the following conclusions are reached:

i. Psychosocial factors, such as self-esteem and employment status of postnatal women

in Makurdi metropolis are found to be significantly linked to postpartum depression. Specifically, high self-esteem and high employment status are found to significantly reduce the tendency of experiencing postpartum depression among the women.

ii. It is also the position of this study that, obstetric factors such as maternal age and birthing method are significant predictors of postpartum depression. In this wise, birth through Cesarean section is found to predispose women to postpartum depression. Similarly, older maternal age is also found to be significantly predictive of postpartum depression among postnatal women in Makurdi metropolis.

Recommendations

Based on the finding, the following recommendations are advanced:

i. Management of the hospitals should ensure that postnatal women under their care undergo psychological therapies aimed at enhancing self-esteem deficits. This is important given that, high self-esteem has shown to reduce the potential for experiencing postpartum depression among postnatal women.

ii. Couples should be encouraged to plan for child birth at relatively early ages. This is important considering that, younger maternal age has been shown to reduce the likelihood of experiencing postpartum depression among postnatal women in the study area.

iii. Further studies may be carried out in different setting, using larger populations or samples to obtain a larger picture of the phenomenon.

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