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# Research

# Postpartum depression among mothers as seen in hospitals in Enugu, South-East Nigeria: an undocumented issue

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## Abstract

**Introduction:** Postpartum depression is an uncommon and frequently undocumented issue that impacts negatively on maternal and child health. **Methods:** The study was carried out among mothers who attended postpartum clinics from two teaching hospitals and three private hospitals all in Enugu metropolis. The instrument employed for data collection was a structured self-administered questionnaire developed from the Edinburgh Postnatal depression Scale. The families were assigned socio-economic classes (SEC) using the recommended method (modified) by Oyedeji. The objectives of this study was therefore aimed to highlight the pattern and prevalence of post-natal depression among mothers in Enugu, south east Nigeria. **Results:** A total of 214 mothers attending postpartum clinics were recruited in this study. The prevalence of postpartum depression from this study is 22.9%. There are no significant association between socio-demographics of mother and depression, age (p= 0.556), educational level (p= 0.667), occupation (p=0.494), parity (p= 0.823) and mode of delivery (p= 0.760). **Conclusion:** This study has shown that the prevalence of postpartum depression in Enugu, south east Nigeria is 22.9% which is comparable to that obtained in African continents. We noted no significant associations between socio-demographics of mother, age, educational level, occupation, parity and mode of delivery and depression.

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## Introduction

The birth of a new baby is a major developmental transition in life that affects not only the woman, but also her baby and the family [1,2]. A common mental health problem during this period is postpartum depression [1]. It is a serious public health concern and is associated with numerous medical and psychosocial problems in both mother and child [1]. While postpartum depression poses a medical problem to the family, It is contrary to the condition called maternity blues. Postpartum depression meets the criteria of the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) for depression with incidence rate of 11 to 42% varying from one population to another [3,4].

Maternity blues a common, benign, transitory condition occurs in the first day after delivery with incidence ranging from 30 – 80 %. It normally starts 3-4 days after delivery and peaks on the fourth to fifth day [5]. Characteristic symptoms of maternity blues are crying, confusion, anxiety, mood changes, insomnia and dysphoria.

Postpartum depression is highly indicated when symptoms are severe and have lasted over two weeks. It is noted that in about 1 to 2 per 1,000, postpartum depression results in postpartum psychosis. In the United States, postpartum depression occurs in about 8 per 100,000 births [6,7]. Postpartum depression has also been seen as a temporary depression that afflicts about 15 percent of women following childbirth. It is more intense and long lasting than the "baby blues," which affect as many as half of new mothers [7]. The cause of postpartum depression is not well known, however, it has been linked to a variety of endocrine root causes-especially postpartum thyroid dysfunction [8, 9]. Antenatal depression has also been considered to increase the risk for postnatal depression [9]. Maternal postpartum depression disturbs the attachment and bonding between mother and child and therefore adversely affects the infant´s development [10]. Some of these adverse effects include negative effects on cognitive development and social-emotional development of the child. These problems may persist and are unlikely to be responsive to intervention over time if the maternal depression remains untreated [11]. Postpartum depression also leads to increased costs of medical care, inappropriate medical care and discontinuation of breastfeeding [10].

The family unit is also affected by postnatal depression which may coexist with child abuse and neglect, marital discord, divorce and family violence [12]. Addressing maternal postpartum depression in a timely and proactive fashion is therefore essential to ensure optimal growth and development of the child [13]. The need for the study therefore cannot be downplayed especially its impact on health which had been mentioned hitherto. This study was therefore aimed to address the pattern and prevalence of post-natal depression among mothers in Enugu, south east Nigeria and associated factors.

## Methods

### Study area

The study was carried out among mothers who attended postpartum clinics from two teaching hospitals and three private hospitals all in Enugu metropolis. A simple random sampling was used to select the participants and University Of Nigeria Teaching Hospital, Ituku Ozalla and Enugu State University Teaching, are the major tertiary hospital used for the study.

### Study population

The questionnaire was administered to the mothers who attended postnatal clinic within the first six weeks after delivery. Consent was obtained from the mothers after they had been told that their participation was completely voluntary in nature and that they could discontinue their involvement at any time. Enugu has a population of 3.5 million people according to the national population census [12]. Anonymity and confidentiality of responses were also conveyed. Mothers who gave consent and who had no history of any psychiatric illness were included in this study while mothers who were on any antipsychotic drugs or who had psychiatric disorders were excluded.

### Case selection

A total of 214 mothers attending postpartum clinics and who fulfilled the inclusion criteria were consecutively recruited in this study .

Sample size estimation

The minimum sample size used in this study was calculated using the formular [13]. N = $Z^2$P (I - P)/$D^2$ Where Z = 1.96 i.e. the level of significance, P = Prevalence Maternal depression (0.14) from previous study [14]. D = Tolerable error (0.05). Using the above formula, the minimum sample size is 197. 10% attrition rate was considered, this brought the final value to 214.

### Study procedure

The instrument employed for data collection was a structured self-administered questionnaire developed from the Edinburgh Postnatal depression Scale, a Screening Test for postpartum depression [15]. The questionnaire contains 10 items with each item bearing 5 sub questions. These questions are graded. Response categories were scored 0, 1, 2, and 3 according to increased severity of the symptom. The total score was calculated by adding the scores for each of the 10 items. Score between 15 and 30 suggest depression. The families were assigned socio-economic classes (SEC) using the recommended method (modified) by Oyedeji [16].

### Ethical considerations

Ethical clearance for the study was obtained from the Research and Ethical Committee of the Enugu State University of science and technology. A written consent was obtained from the parents/caregivers of the subjects and controls after explaining to them, in detail, the objectives of the study

## Results

**Table 1** shows that majority of mothers were aged 30 years and below (65.9%). Their mean age was 29.52 ± 4.44. About 70% had tertiary education. They were mainly Civil or public servants (36%). Almost equal proportion was multiparous and primiparous (49.1% and 48.1% respectively). Highest proportion (63.1%) delivered by vaginal means. **Table 2** shows that 40.2% were less than 4 weeks (Neonates) and 54.7% from 4 weeks to 52 weeks. Most mothers had baby boy (57.5%).

Forty nine (49) mothers out of two hundred and fourteen had post partum depression .This gives a prevalence rate of 22.9%. Table 3 shows that there were no significant association between socio-demographics of mother and depression, age (p= 0.556), educational level (p= 0.667) , occupation (p=0.494 ), parity (p= 0.823 ) and mode of delivery (p= 0.760). Table 4 shows that there were no significant association between socio-demographics of baby and depression. age (p= 0.521 ) and sex (p= 0.546).

## Discussion

This study has shown that postpartum depression does exist in our environment. The prevalence of 22.9% obtained in this is much lower than the prevalence of 43% obtained by Nakku [14] et al in Uganda but similar to the prevalence estimates of 18.3% seen in African as a region by Sawyer [17] et al. Findings from developed countries on the African continent such as South African have found prevalence rates of depressive symptoms of 34.7% [18]. It is known that postpartum depression is the most common complication of childbearing affecting some women which poses a public health problem.

In general, Studies report prevalence rates among women from 5% to 25%. However, among men, who are new fathers, the incidence of postpartum depression has been estimated to be between 1% and 25.5% [19]. The variation in prevalence obtained in this study from that obtained in other studies could be due to Methodological and geographical differences. We noted no association between maternal age, social class, parity and gender of baby with postnatal depression. A Study has also shown no increased risk of depression in older first-time mothers due to their age [20].

Arianna [21] et al in their study also noted no association between depression and parity but noted an association with the onset of depression within 6 weeks in women with mood disorders (Bipolar depression). They concluded that primiparity is also associated with postpartum psychosis/mania. Psychosocial factors and biological differences between first and subsequent pregnancies may play a role and are factors to consider in further studies [22].

We noted no association between postpartum depression and mode of delivery. Other studies also noted no association between postpartum depresssssion and mode of delivery [22,23]. Lucic [24] et al did a systematic review of five studies and noted no association between postpartum depression and mode of delivery.

Our findings on the association between age of the baby and post-natal depression is refuted by Heron et al who reported an increase incidence of depression as the age of the child increases. He noted that the incidence of depression at 3 and 12 months post-partum for mothers was similar to that reported by other authors who used the same cut-off score and scale of measurement [25]. We noted from this study that more than 70% of mothers have tertiary education and 60% are working class. This shows increase rate of female education and women empowerment in this part of the country. However, these two strong variables pose little or no influence on postpartum depression.

## Conclusion

This study has shown that the prevalence of postpartum depression in Enugu, south east Nigeria is 22.9% which is comparable to that obtained in African continents. We noted no significant associations between socio-demographics of mother, age, educational level, occupation, parity and mode of delivery and depression.

**Limitation:** Conducting a study in the community would avoid, at least to some degree, selection bias by including those who do not attend postnatal care. Furthermore, a multi centre study would presumably increase the sample size and thus the power to find associations.

**What is known about this topic**

- Maternal postpartum depression distorts the attachment and bonding between mother and the new born and therefore adversely affects the infant's development.
- Evaluation of postpartum depression among mothers attending post-natal clinic in south east Nigeria is a very vital issue often under reported in this part of the world.
- The prevalence of postpartum depression in sub-Saharan Africa has also increased due to apparent lack of interest by researchers.

**What this study adds**

- This study therefore highlighted the pattern and prevalence of post-natal depression among mothers in Enugu, south east Nigeria and advocate for the early identification and referral of affected mothers for appropriate intervention.
- It also raise an alarm that not all maternal blues are really maternal blues, they should be further evaluated.

## Competing interests

The authors declare no competing interests.

## Authors' contributions

CJM , NIK, OOI had primary responsibility for protocol development, patient screening, enrolment, outcome assessment, preliminary data analysis, and writing of the paper. ECA performed the final data analyses. UE, ATA and EUS participated in the development of the protocol and analytical framework for the study and contributed to writing of the paper. All authors have read and agreed to the final version of this manuscript and equally contributed to its content and to the management of the case.

## Acknowledgments

## Tables

**Table 1**: Socio-demographics of mother
**Table 2**: Socio-demographics of baby
**Table 3**: Associations between socio-demographics of mother and depression
**Table 4**: Associations between socio-demographics of baby and depression

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| Table 1: socio-demographics of mother | | |
|---|---|---|
| **Variables** | **Frequency** | **Percent %** |
| **Age(Years)** | | |
| ≤30 | 141 | 65.9 |
| 30 | 73 | 34.1 |
| *Mean(SD)* | *29.52(4.44)* | |
| **Educational Level** | | |
| No formal education | 5 | 2.3 |
| Primary | 5 | 2.3 |
| Secondary | 54 | 25.2 |
| Tertiary | 150 | 70.1 |
| **Occupation** | | |
| Civil/Public servant | 77 | 36.0 |
| Trader/business | 48 | 22.4 |
| Student/applicant | 49 | 22.9 |
| Others | 40 | 18.7 |
| **Parity** | | |
| Grandeparous | 6 | 2.8 |
| Multiparous | 105 | 49.1 |
| Primiparous | 103 | 48.1 |
| **Mode of delivery** | | |
| Vaginal | 135 | 63.1 |
| Caesarean section | 75 | 35.0 |
| Instrumental | 4 | 1.9 |

| Table 2: socio-demographics of baby | | |
|---|---|---|
| **Age(weeks)** | **Frequency** | **Percent %** |
| <4 | 86 | 40.2 |
| 4-52 | 117 | 54.7 |
| >52 | 11 | 5.1 |
| *Mean(SD)* | *15.11(33.49)* | |
| *Median(IR\*)* | *6(0.9-13)* | |
| **Sex** | | |
| Male | 123 | 57.5 |
| Female | 91 | 42.5 |
| **IR\*  Interquartile range** | | |

| Table 3: associations between socio-demographics of mother and depression | | | |
|---|---|---|---|
| Variables | Depression | No Depression | P value (derived from chi square) |
| | n(%) | n(%) | |
| **Age(Years)** | | | |
| ≤30 | 34(24.1) | 107(75.9) | 0.556 |
| Ø 30 | 15(20.5) | 58(79.5) | |
| **Educational Level** | | | |
| No formal education | 0(0.0) | 5(100.0) | |
| Primary | 1(20.0) | 4(80.0) | 0.667 |
| Secondary | 13(24.1) | 41(75.9) | |
| Tertiary | 35(23.3) | 115(76.7) | |
| **Occupation** | | | |
| Civil/Public servant | 17(22.1) | 60(77.9) | |
| Trader/business | 14(29.2) | 34(70.8) | 0.494 |
| Student/applicant | 8(16.3) | 41(83.7) | |
| Others | 10(25.0) | 30(75.0) | |
| **Parity** | | | |
| Grandeporous | 2(33.3) | 4(66.7) | |
| Multiporous | 24(22.9) | 81(77.1) | 0.823 |
| Primiporous | 23(22.3) | 80(77.7) | |
| **Mode of delivery** | | | |
| Vaginal | 33(24.4) | 102(75.6) | |
| Caesarean section | 15(20.0) | 60(80.0) | 0.760 |
| Instrumental | 1(25.0) | 3(75.0) | |

| Table 4: associations between socio-demographics of baby and depression | | | | |
|---|---|---|---|---|
| Age(Weeks) | Yes | No | | |
| <4 | 21(24.4) | 65(75.6) | | |
| 4-52 | 27(23.1) | 90(76.9) | 1.303 | 0.521 |
| >52 | 1(9.1) | 10(90.9) | | |
| **Sex** | | | | |
| Male | 19(20.9) | 72(79.1) | 0.365 | 0.546 |
| Female | 30(24.4) | 93(75.6) | | |