

Original Article

Postnatal Depression and Associated Risk Factors among Women after Three Months Postpartum

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Abstract

Introduction: Postnatal depression is a mental illness exhibiting the strongest link to adverse child outcomes if it is under diagnosed and under-treated. There is a range of mental illnesses that women may experience during pregnancy and after delivery. The objective of this study was to detect postnatal depression among women after 3 months postpartum and also to identify any socioeconomic characteristics, and antenatal, intra-natal, and postnatal factors precipitating postnatal depression.

Materials and methods: A longitudinal comparative study was done at the Institute of Child and Mother Health (ICMH) from January to June 2019. A total of 204 pregnant women in the third trimester of pregnancy were purposively recruited for this study. The first interview was taken in the third trimester of pregnancy and the second interview after 03 months postpartum. Edinburgh Post-Partum Depression Scale (EPDS) was used to identify depression. Chi-Square test and t-test were done to find out the association of postnatal depression with socioeconomic characteristics, and antenatal, intra-natal, and postnatal factors. P value ≤ 0.05 was considered significant.

Result: Out of 204 women, 25 women screened positive for PND with the EPDS, and the prevalence was 12%. Women of the lower socioeconomic class were found to have significantly more (76.0%) cases of postnatal depression. Depression was found in more than two-thirds (68%) of primipara women. Women who underwent emergency caesarian section developed depression significantly more than women who underwent other modes of delivery. Unwanted newborn sex, fetal death, newborn illness, and mother's illness after delivery was also found significantly more in women with depression than in women without depression. Mothers with antenatal depression, those not satisfied with their quality of life, and victims of domestic violence developed significantly more depression compared to mothers without these life events.

Conclusion: Mothers of low socioeconomic conditions and primipara women were found more prone to develop postnatal depression in this study. Women who underwent emergency cesarean section, unwanted newborn sex, newborn illness and mother's illness after delivery, antenatal depression, dissatisfaction in quality of life, and victims of domestic violence were more likely to develop PND.

Key Words: Postnatal depression, Edinburgh Postpartum Depression Scale.

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Introduction

Maternal mental ill health is recognized as an important determinant of maternal and child morbidity and mortality in the least developed countries.¹ The WHO declared that one in four individuals will develop a mental or behavioral disorder during their lifetime and that 20–40% of women in developing countries experience depression during pregnancy or after childbirth.² The estimated average prevalence of perinatal mental disorders in the Eastern Mediterranean Region (EMR) is 15–36%.³ Women suffering from mental illness during pregnancy, specifically depression or psychosis will have limited care giving capabilities, thus leading to child neglect and future developmental and behavioral problems.⁴

Prevalence figures of postnatal depression are variable across different settings and cultures owing to variations in socioeconomic and gender-based determinants.⁵⁻⁸ In a country such as Sudan, the amount of social support pregnant women receive is substantial; however, women are also living in a male-dominated society and in the middle of conflict situations, migration, and deteriorating economic status, thereby making women highly susceptible to mental illness.⁹ Hence, pregnancy-related mental health problems are expected to be higher among women in such settings.

Existing knowledge shows variations in the prevalence of PND among low-income countries despite comparably associated factors. In Ghana, the 1-month prevalence of PND is 3.8%, with antenatal depression and adverse birth outcomes as associated risk factors.¹⁰ In the United Arab Emirates (UAE), 16.8% exhibited symptoms of PND at 2 months postpartum when screened with the Edinburgh Postnatal Depression Scale (EPDS). Antenatal depression, parity, religion and the use of formula for feeding are the significant risk factors.¹¹ In Lebanon, the prevalence of PND was 12.8% at 30–40 days after delivery, with a history of depression being a significant risk factor.¹² In Uganda, the 3-month prevalence was as high as 43%, while associated risk factors were bad marital relations, mother's parity, and infant characteristics.¹³ In Upper Egypt, mothers screened for PND up to 1 year after birth had a high prevalence of 49%. A low household income, child sleeping hours, complications after delivery and a lack of support from the husband after delivery were found to be statistically associated with PND.^{14,15}

Caring for mothers with mental illness is neglected in healthcare systems in low-income countries. This is because of the lack of understanding of the nature of

maternal depression among women and primary healthcare providers. In addition, the stigma associated with the condition prevents women from accessing mental healthcare. The prevalence of PND was 9.2% at 3 months after birth reported from a previous analysis from the study by Khalifa et al.¹⁶ There are limited studies in our country regarding PND and associated risk factors. Therefore, the study was done to identify the magnitude and factors associated with PND.

Materials and methods

A longitudinal comparative study was done at the Institute of Child and Mother Health for 06 months from 1st January to 30th June 2019. A total of 204 pregnant women in the third trimester of pregnancy were purposively recruited in this study. Women having known psychiatric illnesses were excluded from this study. For the calculation of socioeconomic status (SES) modified Kuppusswamy scale was used.¹⁹ First interview was taken during inclusion in the third trimester of pregnancy (T0) and the second interview was taken after 03 months postpartum (T1) using the Edinburgh Post-Partum Depression Scale (EPDS) which is a reliable and validated screening tool consisting of ten inventory questions for screening of postnatal depressive illness among women. The score on this scale ranges from 0 to 30.¹⁶

Women were identified as test positive if scored ≥ 12 and test negative if scored < 12 by EPDS. Socio-economic characteristics, antenatal history, intra-natal history, and postnatal follow-up was done, and findings were compared between test-positive and test-negative women. All data were entered and analyzed using SPSS version 20. Descriptive statistics such as mean, SD, frequency, and percentage were calculated. Data is presented in the form of tables. P value was determined by t- test for quantitative variables and by the chi-square test for qualitative variables. P value ≤ 0.05 was taken as the level of significance. Informed written consent was taken from the recruited women. The Study protocol was approved by the Institutional Review Board of ICMH.

First interview (T0)

In the first interview, data on socioeconomic characteristics, medical and obstetrical history and history of violence and stressful conditions were collected. In addition, the interview assessed participants' satisfaction with a number of issues such as marital support, sexual relationship, family and social support, living and housing conditions, income, self-satisfaction and satisfaction with the current quality of life.

Second interview (T1)

After 3 months postpartum, participants were assessed with Edinburg Post-Partum Depression Scale.

Result

Out of 204 women in this study, 25 women screened positive for PND with the EPDS, thus resulting in a prevalence of 12%. The mean age of the studied women was 26.80 ± 4.2 years. Women from rural areas were found slightly more than women from urban areas (53.4% vs 46.5%). Most (79.9%) of the women were found unemployed, which was a little more in women without depression (82.1%) than in women with depression (64%), though the difference was not statistically significant ($p > 0.05$). Women of the lower socioeconomic class were found to have significantly

more (76.0%) cases of post-natal depression than women of the middle and upper class- 20.0% and 4.0% subsequently (Table-I). Depression was found significantly more ($p < 0.05$) in primipara (68%) women than in multipara (32%) and women who underwent emergency caesarian section developed depression significantly more ($p < 0.05$) than women who underwent other modes of deliveries (Table-II). Unwanted newborn sex, fetal death, newborn illness and mother's illness after delivery was also found significantly more in women with depression than in women without depression (Table--II). Mothers with antenatal depression, those not satisfied with their quality of life and victims of domestic violence developed significantly more ($p < 0.05$) depression compared to mothers without these life events (Table III).

Table I: Association of socioeconomic characteristics with depression

Socioeconomic characteristics	Test positive N=25(%)	Test negative N=179(%)	Total N=204(%)	p-value
Age in years				
Mean \pm SD age	27.58 \pm 7.89	26..02 \pm 6.1	26.80 \pm 4.2	0.40
Residence				
Rural	14(56.0)	95(53.1)	109 (53.4)	0.78
Urban	11(44.0)	84(46.9)	95 (46.5)	
Occupation				
Housewife	16(64.0)	147(82.1)	163(79.9)	0.30
Service holder	5(20.0)	15(8.4)	20(9.80)	
Maidservant	2(8.0)	5(2.8)	7 (3.4)	
Student	1(4.0)	9(5.0)	10 (3.4)	
Socioeconomic class				
Upper	1 (4.0)	6 (3.30)	7 (3.4)	0.01
Upper middle	2 (8.0)	28(15.6)	30 (14.7)	
Lower middle	3 (24.0)	32 (17.8)	25 (12.2)	
Upper lower	3 (24)	44(24.5)	45 (22.0)	
lower	16 (64.0)	67 (37.43)	83 (40.6)	

* p-value obtained by χ^2 test for categorical variables & t-test for continuous variable.

Table II: Association of obstetric and infant-related factors with depression

Obstetric and infant-related factors	Test positive N=25(%)	Test negative N=179(%)	Total N=204(%)	p-value
Parity				
Primipara	17(68.0)	97 (54.2)	114(55.8)	0.02
Multipara	8 (32.0)	82 (45.8)	90 (44.1)	
Mode of delivery				
Vaginal delivery	3 (24.0)	46 (25.6)	49(24.0)	0.01
Emergency C/S	18 (72.0)	73 (40.7)	91 (44.6)	
Elective C/S	4 (32.0)	60 (33.5)	64 (31.3)	
Unwanted newborn sex	18 (72.0)	82 (45.8)	100 (49.0)	0.01
Fetal death	6(24.0)	3(1.7)	9(4.4)	0.01
Newborn illness	6 (24.0)	15 (8.3)	21 (10.2)	0.04
Mother's illness after delivery	19 (76.0)	36 (20.1)	55 (26.9)	0.01

Table III: Association of clinical and social factors with depression

Clinical and social factors	Test positive N=25(%)	Test negative N=179(%)	Total N=204(%)	p-value
H/O antenatal depression	16 (64.0)	12 (6.7)	28(13.7)	0.01
Presence of chronic disease	17 (68.0)	86 (48.6)	103 (50.4)	0.06
Dissatisfaction withthe quality of life	21 (84.0)	107 (59.7)	128 (62.7)	0.01
H/O domestic violence	16 (64.0)	14 (7.8)	30 (14.7)	0.01

Discussion

Postpartum women across different socioeconomic backgrounds are susceptible to PND which suggests a diversity in determinants.⁵ More than 70 predictors of PND are reported in developing countries.⁵ Factors associated with PND found in this study are lower socioeconomic class, primipara, emergency cesarean section, female baby, fetal death, newborn illness, dissatisfaction in quality of life and history of domestic violence are consistent with other studies as a predictor of PND.¹⁸⁻²⁰

Prevalence of postnatal depression was 12% in this study, which was almost consistent (10.5%) with Khalifa et al.¹⁶ There was around 5% prevalence of PND among Nepalese women,¹⁴ 13.15% in Thailand¹⁵ and 13.5 % in people of the Republic of China.¹⁷

PND was found in 76% of cases among lower socioeconomic conditions in this study. The lower socioeconomic condition was found in 72% of cases

with PND in a study done by Khalifa et al.¹⁶ Depression was found significantly more in primipara women than in multipara (68% vs 32%) in this study and it is inconsistent (primipara 10%) with Kakyo TA et al.¹³

PND was found significantly more in emergency cesarean section than in normal vaginal delivery (72% vs 24%) in this study. It was consistent with another study (68% vs 32%).¹⁶

Associated risk factors of PND like unwanted newborn sex (72% vs 68%), newborn illness (24% vs 21%) and mother's illness after delivery (76% vs 70%) in this study were similar to Dina Sami et al.²¹

Clinical and social factors of PND were inconsistent with Khalifa et al.¹⁶ H/O antenatal depression (64% vs 38%), presence of chronic illness (68% vs 18%), dissatisfaction of quality of life (84% vs 13.6%). H/O domestic violence (64% vs 27. %) may be due to social and cultural status of Bangladesh being different from other countries.

Conclusion

Low socioeconomic condition, primipara, emergency cesarean section, giving birth to newborn of unwanted sex, newborn's illness, mother's illness after delivery, H/o antenatal depression, presence of chronic illness, dissatisfaction with the quality of life and domestic violence were found to be associated with PND in this study.

References

- Cox JL, Holden JM, Sagovsky R. Detection of postnatal depression. Development of the 10-item Edinburgh Postnatal Depression Scale. *Br J Psychiatry* 1987; 150:782–6.
- WHO. Mental health aspects of women's reproductive health: A global review of the literature. WHO, UNFPA, 2009.
- EMRO. Maternal, child and adolescent mental health: challenges and strategic directions 2010–2015. WHO, 2010.
- Weinstock M. The potential influence of maternal stress hormones on development and mental health of the offspring. *Brain Behav Immun* 2005; 19:296–308.
- Halbreich U, Karkun S. Cross-cultural and social diversity of prevalence of postpartum depression and depressive symptoms. *J Affect Disord* 2006; 91:97–111.
- Stern G, Kruckman L. Multi-disciplinary perspectives on post-partum depression: an anthropological critique. *Soc Sci Med* 1983; 17:1027–41
- Fisher J, Cabral de Mello M, Patel V, et al. Prevalence and determinants of common perinatal mental disorders in women in low- and lower-middle-income countries: a systematic review. *Bull World Health Organ* 2012; 90:139–49.
- Wachs TD, Black MM, Engle PL. Maternal depression: a global threat to children's health, development, and behavior and to human rights. *Child Dev Perspect* 2009; 3:51–9.
- Salah TT, Abdelrahman A, Lien L, et al. The mental health of internally displaced persons: an epidemiological study of adults in two settlements in Central Sudan. *Int J Soc Psychiatry* 2013; 59:782–8.
- Weobong B, Ten Asbroek AH, Soremekun S, et al. Determinants of postnatal depression in rural Ghana: findings from the don population-based cohort study. *Depress Anxiety* 2015; 32:108–19.
- Hamdan A, Tamim H. Psychosocial risk and protective factors for postpartum depression in the United Arab Emirates. *Arch Women's Ment Health* 2011; 14:125–33.
- El-Hachem C, Rohayem J, Bou Khalil RB, et al. Early identification of women at risk of postpartum depression using the Edinburgh Postnatal Depression Scale (EPDS) in a sample of Lebanese women. *BMC Psychiatry* 2014; 14:242.
- Kikyo TA, Muliira JK, Mbalinda SN, et al. Factors associated with depressive symptoms among postpartum mothers in a rural district in Uganda. *Midwifery* 2012; 28:374–9.
- Mohammed ES, Mosalem FA, Mahfouz EM, et al. Predictors of postpartum depression among rural women in Minia, Egypt: an epidemiological study. *Public Health* 2014; 128:817–24.
- Armah B, Yeo D, Kedir BN, et al. MDG 2014 Report: Assessing progress in Africa toward the Millennium Development Goals (Analysis of the Common African Position on the post-2015 Development Agenda). In: United Nations Economic Commission for Africa AU, African Development Bank, and United Nations Development Programme. Addis Ababa, Ethiopia: Economic Commission for Africa, 2014, 6:58–66.
- Khalifa DS, Glavin K, Bjertness E, et al. Postnatal depression among Sudanese women: prevalence and validation of the Edinburgh Postnatal Depression Scale at 3 months postpartum. *Int J Women's Health* 2015; 7:67–70.
- Kaminsky LM, Carlo J, Muench MV, et al. screening for postpartum depression with the Edinburgh Postnatal Depression Scale in an indigent population. *J Matern Fetal Neonatal Med* 2008; 21:321–5.
- Howard LM, Oram S, Galley H, et al. Domestic violence and perinatal mental disorders: a systematic review and meta-analysis. *PubMed* 2013; 10:101–106.
- Saleem SM. Modified Kuppaswamy scale updated for the year 2018. *Indian J Res* 2018; 7(3):6–7.
- Giri RK, Khatri RB, Mishra SR, et al. Prevalence and factors associated with depressive symptoms among post-partum mothers in Nepal. *BMC Res Notes* 2015; 8:11–16.
- Khalifa DS, Glavin K, Bjertness E, Lien L, et al. Determinants of postnatal depression in Sudanese women at 3 months postpartum: a cross-sectional study. *BMJ Open*. 2016; 6(3): e009443.