Original Research Paper

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Psychiatry

A STUDY ON PREVALENCE OF POSTPARTUM DEPRESSION AT TERTIARY HOSPITAL, WEST BENGAL.

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ABSTRACT The investigators assessed the prevalence of Postpartum Depression (PPD), its clinical features and relationship of PPD with socio-demographical and obstetrical factors. The samples were selected from the OPD and IPD, of a Medical college in Kolkata.. Observational study was performed on 500(N=500) postpartum mothers who were selected by using Simple Random Sampling Technique within the six weeks of postpartum period. Data were collected by using the Structured Questionnaire for background information, Edinburgh Postnatal Depression Scale (Bengali Version of EPDS) for postpartum depression.

Data analysis was performed using Descriptive Statistics, Chi-square, Logistic Regression and Decision Tree. A total of 112 (Prevalence Rate 22.4%) postpartum mothers had PPD. Stepwise logistic regression model correctly classified 92.2% of women who developed PPD. Using logistic regression model, postpartum depression is best predicted by: No. of Postpartum days p< 0.001***, Age of the mother p<0.024**, Religion p<0.003**, Type of family p<0.020**, Education of the mother p<0.001***, Monthly Income of the family p<0.001***, No of other living children p<0.001***, Pregnancy outcome p<0.033**, Any complication during pregnancy / delivery/ postpartum p< 0.001*** and Problems with family members p< 0.001***.

The study recommends that evaluation should be carried out for Postpartum Depression and its risk factors to prevent and treat PPD in a timely manner.

KEYWORDS :

Postpartum Depression (PPD) is a mental and behavioral disorder associated with childbirth starting within six weeks of delivery .As per study findings, prevalence of PPD in India ranging from 11 to 46.9% (Chandran et al., 2002; Ghosh et al.,2011;; Savarimuthu et al., 2010.).

Despite the high prevalence of postpartum depression, the condition often goes undiagnosed and untreated by primary care providers. The direct and indirect costs associated with postpartum depression are unknown. Moreover, maternal depression can negatively effect the health of mother & infant, mother-infant relationship and infant development, on the woman's marital status and in fact on the entire family.

Women affected by depression in the postpartum have shown to be at higher risk for developing a recurrent depressive disorder.

OBJECTIVES OF STUDY

1. To find out the prevalence of postpartum depression among postpartum mother in a tertiary hospital, West Bengal.
2. To assess common clinical presentation of postpartum depression cases.
3. To find out association of postpartum depression with various demographical and obstetrical variables.

Operational Definition

Postpartum period: Postpartum period is the duration after delivery which begins immediately after the birth of a child and extends up to six weeks.

Postpartum Depression (PPD): PPD is a clinical term refers to a depressive episode of postpartum mother after delivery to six weeks postpartum period and it measures by Edinburgh Postpartum Depression Scale Bengali Version (EPDS-B).

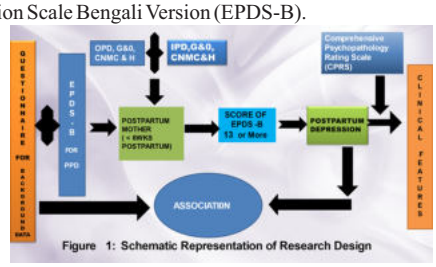

Figure 1: Schematic Representation of Research Design

Sample Size

Total sample was 500. The sample size was calculated by taking Expected Frequency (46.9%), Population Size(10,000), Acceptable Margin of Error 5% and 95 % Confidence Interval by using the StatCal program of Epi info, it was 369. By taking 30% of non-response rate of 369, recruitment target was 500 by rounding off 480.

Simple Random Sampling Technique was used to select the sample by considering inclusion and exclusion criteria and taking informed consent.

- At first a general list was prepared & study Serial No. was given from 01 to 1500
- Total 650 numbers were taken by Computer generated Simple Random Sampling to allow for around 25% non-response rate so that 500 sample to be recruited.

INCLUSION CRITERIA

POSTPARTUM MOTHER –

History of vaginal or caesarian section delivery,
Within six weeks of postpartum period,
Subjects must be competent to read Bengali/ English/Both.

Willing to participate.

EXCLUSION CRITERIA

Subjects have medical problems i.e., PIH, Heart disease, Diabetes Mellitus, Hyper or Hypothyroidism, Epilepsy.

Substance abuse.
Previous psychiatric disorder except postpartum depression.

Part I:

Questionnaire for collecting background information - It consists of 20 items which covered the demographical and obstetrical information.

Part II:

Edinburgh Postpartum Depression Scale (EPDS):-It is 10-items self-report questionnaire to rate how they felt in previous 7 days . Each item consists of a statement with four possible answer choices with a scoring system & scores range from 0 to 30. EPDS is a screening tool and has the advantage of being the first scale developed specifically for PPD screening and has been used for more than 30 years in both research and clinical settings (Cox, Holden & Sagovsky, 1987).

The psychometric properties of EPDS have been tested and shown high agreement with standard diagnostic methods such as DSM-IV and ICD-10 classification for postpartum depression.

The instrument showed stable four factor structure- Depression, Anxiety, Suicide and Difficulty in sleep.

Bengali version of EPDS (EPDS-B) is a valid and reliable instrument to assess the postpartum depression.

It was also published by adopting and piloting EPDS-B along with all tools (Maity et al.,2015). During this study period, EPDS was translated into Bengali version(EPDS-B) Part III :

Formal Permission taken from the Dept. of Gynae & Obs, C.N.M.C. Hospital, Kolkata.

Informed Consent taken from the respondents.
The respondents reassured that the obtained data would be held confidential and only be used for research.

Setting of the study: The study was conducted at OPD and IPD, Dept. of Gynae & Obs, Calcutta National Medical College, Kolkata, West Bengal.

Sample: Postnatal mother admitted in postpartum unit and attending Outpatient Department of Gynae & Obstetrics within 6weeks after delivery was selected for study sample by considering inclusion and exclusion criteria.

Questionnaire for demographic data and EPDS status analyzed by Frequency & Percentage distributions and Pie Chart. **For brevity we are NOT reporting the findings related to CPRS here**

RESULTS

Table 1 shows summary of demographic and clinical data. Clearly most subjects belonged less than 7 days post-partum, of 20-25 years age, Hindu by religion, had 4-5 family members, middle school educated, unemployed, had normal delivery, had living issue, mostly males. Most had no adverse life events. The EPDRS positive e rate was 22%

Table 1 Summary Of Demographic And Clinical Findings

	Frequency	Percentage
No. of Postpartum Days		
Less Than 7 Days	**290**	**58.0**
7 To 14 Days	**107**	**21.4**
15 To 29 Days	**11**	**2.2**
30 To 42 Days	**92**	**18.4**
Age in years		
Below 20 Years	**77**	**15.4**
20 To 24 Years	**323**	**64.6**
25 To 29 Years	**66**	**13.2**
30 To 34 Years	**32**	**6.4**
35 Years And Above	**2**	**.4**
RELIGION		
Hindu	**358**	**71.6**
Muslim	**130**	**26.0**
Others	**12**	**2.4**
No. of Family Members		
Less Than 4	**108**	**21.6**
4 To 5	**290**	**58.0**
6 And Above	**102**	**20.4**
EDUCATION		
Primary School	**38**	**7.6**
Middle School	**237**	**47.4**
High School	**114**	**22.8**
Intermediate	**78**	**15.6**
Graduate	**33**	**6.6**
Unemployed	**225**	**45.0**
Unskilled Worker	**57**	**11.4**
Semiskilled Worker	**84**	**16.8**
Skilled Worker	**67**	**13.4**
Clerk, Shop Owner, Farm Owner	**58**	**11.6**
Semi Profession	**7**	**1.4**
Profession	**2**	**0.4**
Type of Delivery		
Vaginal Delivery	**322**	**64.4**
Caesarean Section	**178**	**35.6**
Pregnancy outcomes		
Dead Baby	**37**	**7.4**
Living Baby	**463**	**92.6**
Sex of the baby delivered		
Male	**262**	**52.4**
Female	**201**	**40.2**
Total	**463**	**92.6**
Dead Baby	**37**	**7.4**
Adverse life events		
No adverse life event	**494**	**98.8**
Adverse life event present	**6**	**1.2**
EPDS Status **EPDS Screen Negative**	**388**	**77.6**
EPDS screen Positive	**112**	**22.4**

Table 2 shows result of association between EPDRS positive status and various clinical and demographic variables. Relationship between EPDS screener status with demographical and obstetrical characteristics result show significant association with following variables-

No. of postpartum days p<0.001***
Age of mothers in years p<0.001***
Religion p=0.026**
Type of family p<0.001***
No. of family members p=0.012**
Education p< 0.001***
Monthly Income of the family (Rs)p= 0.002**
No. of other living children p< 0.001***
Gender of the children p=0.003**
History of Miscarriage p<0.001***
History of Still birth p=0.004**
Type of delivery of present pregnancy p<0.001***
Pregnancy outcomes p<0.001***

Any complication during pregnancy/ delivery/ postpartum p<0.001***
Problems with family member p<0.001***
Adverse life events before delivery p<0.001***.

Table 2 Association Of EPDS Status With Different Independent Variables By Using Chi-square Test

Name of the variables	Value of Chi-Square	Df	P value
No. of postpartum days	112.842	3	P<0.001 ***
Age of Mothers (in years)	50.614	4	P< 0.001 **
Religion	6.604	2	P< 0.026 *
Type of family	13.333	1	P<0.001 ***
No. of family members	9.399	2	P< 0.012 **
Education	22.938	4	P< 0.001 **
Occupation	10.701	6	P> 0.120
Monthly Income of the family (Rs)	18.056	5	P< 0.002 ***
Number of other living children	59.820	3	P< 0.001 ***
Gender of other living children	11.537	2	P< 0.003 ***
History of Miscarriage	49.823	1	P< 0.001 ***
History of Still Birth	10.002	1	P< 0.004 ***
Type of delivery in present pregnancy	14.723	1	P< 0.001 ***
Pregnancy outcome	12.744	1	P< 0.001 ***
Sex of the baby delivered	8.775	1	P< 0.004 ***
Any complication during pregnancy/ delivery/ postpartum	81.846	1	P< 0.001 ***
Support person to assist at home	1.767	1	P> 0.218
Problems with family member	68.858	1	P< 0.001 ***
Adverse life events before delivery	21.038	1	P< 0.001 ***

To identify the most important confounding variables, logistic regression analysis was carried out entering each variable, first alone, then in groups, systematically. The presence of depression was taken as a dependent(dichotomous) variable and various risk factors were assessed as independent variables.

Stepwise logistic regression model correctly classified 92.2% of

women who developed PPD.

Using logistic regression model, postpartum depression is best predicted by: No of post-partum

days p<0.001***, Age p<-0.024**, Religion p<0.003**, Type of family p<0.020**, Education

p<0.001***, Monthly Income p<0.001***, No of other living children p<0.001***, Pregnancy

outcome p<0.033**,Any complication before/during/after delivery p< 0.001*** and problems

with family members p< 0.001***. Other variables are either direct or indirect outcome of
these factors.

Table 3 Result Of Logistic Regression Predictiong Probality Of EPDRS Positive Status With Various Clinical Demographic Variables

	B	S.E.	Wald	Df	Sig.	Exp(B)
No. of postpartum days			25.817	3	.000	
No. of postpartum days(1)	-1.255	.534	5.516	1	.019	.285
No. of postpartum days(2)	1.056	.594	3.157	1	.076	2.874
No. of postpartum days(3)	3.434	1.414	5.896	1	.015	30.994
Age in years			11.252	4	.024	
Age in years(1)	.566	4.141	.019	1	.891	1.761
Age in years(2)	2.681	4.103	.427	1	.513	14.605
Age in years(3)	3.058	4.088	.560	1	.454	21.293
Age in years(4)	3.607	4.133	.762	1	.383	36.844
Monthly Income of the family			22.763	5	.000	
Monthly Income of the family (1)	4.366	2.450	3.175	1	.075	78.733
Monthly Income of the family (2)	4.435	2.367	3.509	1	.061	84.331
Monthly Income of the family (3)	4.049	2.355	2.957	1	.086	57.344
Monthly Income of the family (4)	-.741	2.464	.090	1	.764	.477
Monthly Income of the family (5)	2.201	2.303	.914	1	.339	9.034
No. of other living children	-2.464	.501	24.198	1	.000	.085
History of Miscarriage(1)	-.755	.657	1.317	1	.251	.470
History of Stillbirth(1)	-1.744	.908	3.687	1	.055	.175
Type of delivery of present pregnancy(1)	-.162	.472	.118	1	.731	.850
Pregnancy outcomes(1)	1.384	.648	4.557	1	.033	3.989
Any complication during pregnancy delivery postpartum(1)	-2.457	.702	12.265	1	.000	.086
Support person to assist at home with you(1)	2.241	3.556	.397	1	.529	9.406
Problems with family member(1)	-3.849	1.511	6.491	1	.011	.021
Adverse life events before delivery(1)	-22.874	14054.514	.000	1	.999	.000
Constant	10.762	31706.292	.000	1	1.000	47174.477

Classification Tree typically starts with single Node denoting EPDS Status is significant with No. of Postpartum Days (p<0.001***). In Figure 2

showing the No. of Postpartum Days Less than 7 days postpartum is significant with adverse

life event before delivery (p<0.001***). Further the data no adverse event present before

delivery is significant with education (0<0.001***). 7 to 14 days

postpartum is significant with the sub-set data Any Complication present during

pregnancy/delivery/postpartum period (p<0.001***). This outcome branches off in to two

significant sub set of data. No complication present is significant with history of miscarriage

(p<0.001***) and complication present is significant with occupation (p<0.026**).

presented postpartum days 30 to 42 days significant with No. of family members (p<0.001***); less than 4 & 4-5 members are significant with Type of delivery (p<0.001***) and 6 & more

family members significant with Religion (p<0.032**).

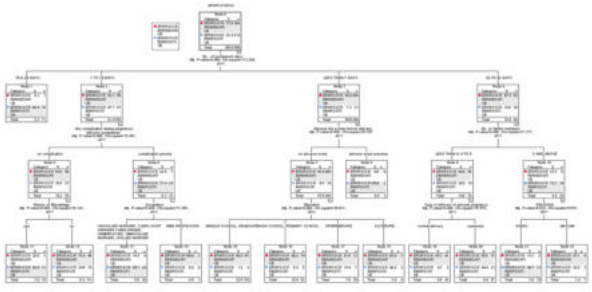

Figure 2 Result Of Decision Tress Analysis Predictiong Post Partum Depression From Study Variables

DISCUSSION

Prevalence of Postpartum Depression of present study is 22.4%. Upadhay et al., 2017 the overall pooled estimate of the prevalence of PPD was 22%.

Studies in India have found prevalence of PPD ranging from 11 to 26.3% (Chandran et al., 2002; Ghosh et al.,2011; Savarimuthu et al., 2010.).

On logistic analysis, it was found that No. of postpartum days, Age of the mother, Religion, Type of family, Education, Monthly Income, No. of other living children, Pregnancy outcome , Any complication before/during/after delivery and problems with family members are independent variables for development of PPD. These findings are consistent with findings of previous studies.

Low income, birth of daughter, relationship difficulties with family members, adverse life event were risk factors for the onset of PPD (Chandran, M & Tharyan, P).

Numerous studies support the correlation between postpartum depression and lack of social support (Beck 2000).

Global level suggests low education associated with PPD; Problems with family members(parents, husbands, in-laws) associated with PPD).Robertson and Beck found that inadequate social support is linked to depression in mothers during pregnancy and postpartum period.

Results of this study uncover many implications with regard to promotive, preventive, curative and rehabilitative services.

Counselling program for the pregnant mother (during pregnancy and after delivery), partner and family members should be planned and executed to prevent and detect PPD at the earliest.

Measures to be implemented to identify high risk mothers for PPD during antenatal care.

Prompt management once the cases have been identified to prevent complications associated with PPD.

- Similar studies should be done in different health care settings and community area to validate the hypotheses of current study.
- Parental postpartum depression to be assessed in different health care setting.
- Counseling services should be planned to prevent PPD.
- Considering the clinical significance of the PPD it is recommended that in addition to raising public awareness and implementing educational programs on childbirth.
- Partner must also be investigated for mood disorders and predisposing factors during this period, especially when their wives are depressed.

Shortcomings of the study

Prevalence detected by the study may be an underestimation of the problem as some women who are depressed may not turn up in the hospital. Hence community-based survey can be done to compare the prevalence rate.

It should also be mentioned that some factors (e.g., bio- hormonal factors) was not controlled in the present study, which may have a role in PPD.

Direct intervention could not be done for subjects who had reported problems except that they have been referred to primary health services.

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This study provides useful information about the prevalence of PPD and risk factors especially the role of socio-cultural environment and practices prevalent in India.

Since socio-cultural factors play a major role in causation of PPD, these should be aimed for. People still consider a girl child a liability. Efforts to improve the condition of women by identifying the loopholes and measures to make them independent both economically and emotionally such as higher literacy and improved socio-economic status warrant further research.

Further more effective measures, at the level of health care setting, to screen and counsel for PPD are required since none of the mothers had sought treatment despite having functional disability. This will improve quality of care to the postpartum mother to reduce maternal morbidity due to depression and neglect.

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