

## PREVALENCE OF POSTPARTUM DEPRESSION AMONG POSTNATAL WOMEN RESIDING IN RURAL INDIA

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### ABSTRACT

**Background & Objectives:** Postpartum depression (PPD) is defined as presence of depressive symptoms in the postpartum period. A seemingly innocuous disorder, if untreated can lead to foeticide or maternal suicide. Furthermore, there is currently no screening tool designated for use in clinical practice and no data are routinely collected on the proportion of perinatal women with postpartum depression. Hence the current study is taken to accurately estimate the burden of postpartum depression using valid tool. To assess the prevalence of postpartum depression among postnatal mothers in rural India **Methods:** A cross-sectional study was done among the 110 postnatal mothers attending immunization clinics and general OPD in the field practice area of department of Community Medicine, GMC, Srikakulam. Modified EPDS scale validated in local language was used to collect data. **Results:** The mean age of the mothers 23.7 ±2.6 ,most(42.7%) of them were intermediate educated and upper lower class(70%) of SES. The prevalence of possible depression (score ≥10) is 19.1% and the prevalence of Depression of varying severity (score >13) is 10%. Post partum depression is associated with age, SES, type of delivery, immediate outcome of delivery. **Conclusion:** EPDS tool can be effectively used to screen post partum depression at primary health care level.

**Keywords-** Postpartum depression, symptoms.

### INTRODUCTION

Life with the newborn can be very thrilling and rewarding but at the same time, it can be very hard and strenuous for some. This beautiful moment of having a newborn brings about many physical, hormonal, and emotional changes in the women during childbirth. These changes, collectively with other compounding factors, may lead to a feeling of sadness, anxiety, scare, and confusion among many mothers. Such feelings make it extremely difficult for the mother to take care of herself or to tend to the needs of the new born. This in turn puts a lot of strain on the family relationships. For most mothers these feelings are temporary and disappear as quickly as they appear but for some unfortunate mothers, it not only remains but develops into a serious yet common disorder known as postpartum depression (PPD). PPD is characterized by depressive symptoms and a diagnosis of depression that occur several weeks after childbirth. Postpartum depression (PPD) is defined as presence of depressive symptoms in the postpartum period. A seemingly innocuous disorder, if untreated can lead to foeticide or maternal suicide [1].

Despite the launch of India's national mental health programme in 1982, maternal mental health is still not a prominent component of the programme. Dedicated maternal mental health services are largely deficient in health-care facilities, and health workers lack mental health training. The availability of mental health specialists is limited or non-existent in peripheral health-care facilities [2].

Furthermore, there is currently no screening tool designated for use in clinical practice and no data are routinely collected on the proportion of perinatal women with postpartum depression. Hence the current study is taken to accurately estimate the burden of postpartum depression using valid tool.

### MATERIALS & METHODS

A cross-sectional study was done among the 110 postnatal mothers attending immunization clinics and general OPD in the field practice area of department of Community Medicine, GMC, Srikakulam. Modified EPDS scale validated in local language was used to collect data.

**Study population:** The Area Hospital Narsannapeta and Rural Health Training centre, Srikurmam are the field practice areas of Government Medical College Srikakulam. Postnatal Mothers attending immunization clinics, attending outpatient department for minor ailments for the children were taken up for the study.

**Sample size:**

The overall pooled estimate of the prevalence of postpartum depression was 22% (95% CI: 19–25)<sup>3</sup> in a systematic review and meta-analysis done by Upadhyay RP et al [3] in 2017, Hence the Prevalence taken was as 22%

Level of confidence- 95%

Error -10%

Sample size = 110 using this formula  $4pq/l^2$

**Selection criteria:**

Apparently healthy postnatal women attending immunization clinics up to 6 weeks postpartum, and postnatal mothers attending Anganwadi centers in the field practice area and in the Area hospital, Narasannapeta. Paediatric OPD patients with minor ailments.

**Exclusion criteria:** Mothers of sick children were excluded.

**Data collection procedure:**

Data was collected from all the postnatal women up to 6 weeks postpartum period. Pre tested semistructured questionnaire was used to collect the data using google forms.

**Instruments:**

Edinburgh Postpartum depression scale [4, 5] (EPDS) was used to collect the data validated to Indian context in local language. The questionnaire was first translated to Telugu local language and back translated to English. Postpartum depression is the most common complication of childbearing. The 10-question Edinburgh Postnatal Depression Scale (EPDS) is a valuable and efficient way of identifying patients at risk for “perinatal” depression. The EPDS is easy to administer and has proven to be an effective screening tool.

**Cut off score**

Mothers who score above 13 are likely to be suffering from a “depressive illness of varying severity”.

The scale has Maximum score: 30, “Possible Depression”: 10 or greater.

In the current study both the cutoff scores for “Possible Depression” and “Depression of Varying Severity” were taken separately and analysed.

The data collected was analysed for validity using Crohnbach’s alpha (0.766). The questionnaire was self-administered using google form or the investigator collected the data among the mothers who needed help to fill the google form.

**Confidentiality:**

Data collected is kept confidential and will be used only purpose of research.

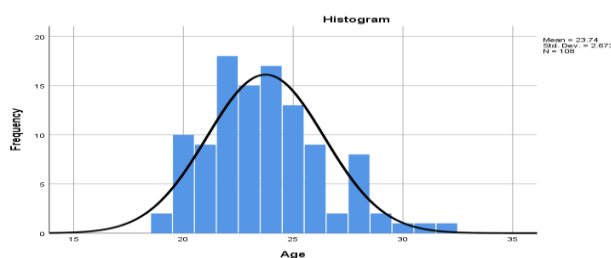
**Analysis:**

Data collected in google forms and analysed in Microsoft Excel and SPSS trial version.

**Ethical considerations:**

Informed consent of the participant was taken. Institutional ethics committee permission was obtained before the start of the study.

**RESULTS**



**Figure 1: Age**

The mean age of the study population is 23.74 with SD of 2.67

**Table 1: Distribution of study population according to age category**

Age of Mothers in years	Frequency	Percent
missing	2	1.8
<20	2	1.8
>30	2	1.8
20-25	82	74.5
26-30	22	20.0
Total	110	100.0

Majority (74.5%) of the mothers are the age group of 20-25

**Table 2: Distribution of study population according Education Status**

Education status	Frequency	Percent
Illiterate	7	6.4
Primary	9	8.2
Middle school	6	5.5
High school	24	21.8
Intermediate	47	42.7
Graduate	17	15.5
Total	110	100.0

Majority of the Mothers (42.7%) studied intermediate and 15.5% of the mothers were graduates which is considerable proportion in rural area.

**Table 3: Distribution of study population according Occupation**

Occupation	Frequency	Percent
Unemployed	88	80.0
Elementary	2	1.8
Craft and related	2	1.8
Skilled	2	1.8
Shop and sales	7	6.4
Clerks	3	2.7
Associate professionals	4	3.6
Professionals	2	1.8
Total	110	100.0

Majority of the mothers (80) were unemployed since most of them were home makers.

**Table 4: Distribution of study population according Family Income**

Monthly Family Income	Frequency	Percent
<=9226	14	12.7
9232-27648	70	63.6
27654-46089	15	13.6
46095-68961	6	5.5
68967-92185	5	4.5
Total	110	100.0

Majority of the families were in the income group of 9232- 27648.

**Table 5: Socio Economic Status of the Study Population**

SOCIO ECONOMIC STATUS	Frequency	Percent
Lower	11	10.0
lower middle	16	14.5
upper lower	77	70.0
upper middle	6	5.5
Total	110	100.0

Majority of the mothers were from upper lower socioeconomic status according to modified [6] Kuppaswamy scale 2022.

**Table 6: Possible Depression**

Possible Depression	Frequency	Percent
No depression	89	80.9
Possible Depression	21	19.1
Total	110	100.0

Table showing possible depression among antenatal mothers according to modified Edinburgh post partum Depression scale. 19% of the mothers could have possible depression with a score less than 10 on this scale. This implies a significant proportion of the Mothers could be suffering from possible depression.

**Table 7: Depression of varying severity**

Depression of varying severity	Frequency	Percent
Depression of varying severity	11	10.0
No Depression	99	90.0
Total	110	100.0

Table showing, 10% percent of the study population is having depression of varying severity.

**Table 8: Various factors associated with possible depression among post natal Mothers**

		No Depression	Possible depression	Total	p- value
Type of delivery	NVD	32(91.5%)	3(8.5%)	35	0.055
	C- Section	57(76%)	18(24%)	75	
Gestational age of pregnancy	Full term	82(83%)	17 (17%)	99	0.124
	Pre term	7 (64%)	4(36%)	11	
Immediate outcome of the delivery	Healthy and active baby	84(85%)	15(15%)	99	0.002
	Baby admitted in ICU	5(55.5%)	6 (54.5%)	11	
Any diet restrictions in postnatal period	No restriction	73(79.2%)	18(19.8)	91	0.68
	Diet restricted	18(85.7%)	3 (14.3)	21	
Breast Feeding	Exclusive breastfeeding	76	10(11.6%)	86	0.0001
	Mixed feeding	13	11(45.8%)	24	
Place of Delivery	Government	49(79%)	13 (20.9%)	62	0.569
	Private	40(83.4%)	8(16.6%)	48	
Birth order	First order	51(81%)	12(19%)	63	0.98
	Second order	38(80.9%)	9(19.1)	47	

Type of delivery, breastfeeding, immediate outcome of delivery are significantly associated with possible postpartum depression. Birth order, place of delivery, diet restrictions, gestational age at delivery are not significantly associated possible Depression.

**Table 9: Type of Delivery**

		No Depression	Depression of varying severity	Total	p- value
Type of delivery	NVD	32(91.4%)	3(8.6%)	35	0.069
	C- Section	57(76%)	18(24%)	75	

Gestational age of pregnancy	Full term	82(82.8%)	17(17.2%)	99	0.216
	Pre term	7(63.6%)	4(36.4%)	11	
Immediate outcome of the delivery	Healthy and active baby	84(84.8%)	15(15.2%)	99	0.006
	Baby admitted in ICU	5(45.4%)	6(54.6%)	11	
Any diet restrictions in postnatal period	No restriction	73(80.2%)	18(19.8%)	91	1.00
	Diet restricted	16(84.2%)	3(15.8%)	19	
Breast Feeding	Exclusive breastfeeding	76(88.4%)	10(11.6%)	86	0.001
	Mixed feeding	13(54.2%)	11(45.8%)	24	
Place of Delivery	Government	49(79%)	13(21%)	62	0.631
	Private	40(83.3%)	8(16.7%)	48	
Birth order	First order	51(81%)	12(19%)	63	1.00
	Second order	38(80.8%)	9(19.2%)	47	

Immediate outcome of delivery , Breast feeding are significantly associated with Depression of varying severity. Factors like Birth order, place of delivery, diet restrictions, gestational age at delivery and type of delivery are not significantly associated Depression of varying severity, though the depression of varying severity is more in mothers who underwent caesarean section(24%)as compared to mothers who had normal delivery(8.6%) this difference is not significant.

**Table 10:**

Possible depression * SES Cross tabulation						
		SES				Total
		lower	lower middle	upper lower	upper middle	
possible depression	NO	7	9	69	4	89
	present	4	7	8	2	21
Total		11	16	77	6	110

**P= 0.005**

There is significant association between possible depression and Socio Economic Status.

**Table 11: Depression \* SES Crosstabulation**

Depression * SES Crosstabulation						
		SES				Total
		lower	lower middle	upper lower	upper middle	
Depression	present	3	4	4	0	11
	no	8	12	73	6	99
Total		11	16	77	6	110

**P= 0.005**

There is significant association between possible depression and Socio Economic Status

**Table 12: Age category vs Possible Depression**

Age category vs Possible Depression				
		Age category		Total
		<25	>=25	
possible depression	<10	63	24	87
	=>10	8	13	21
Total		71	37	108

**P=0.003**

There is a significant association between age and possible depression.

**Table 13: Age category vs Depression**

Age category vs Depression				
		Age category		Total
		<25	>=25	
Depression	>13	4	7	11
	upto13	67	30	97
Total		71	37	108

**P=0.03**

There is a significant association between age and possible depression.

**DISCUSSION**

The prevalence of depression of varying severity was 10 % in the current study, which is similar to study done by Shreshta et.al [1] with title “Incidence and prevalence of postpartum depression in a rural community of India” which showed 12% of varying Depression. “Postpartum depression in India: a systematic review and meta-analysis” done by Ravi Prakash Upadhyay et al [3] the pooled prevalence was 19% (95% CI: 17–22) when 32 studies reporting postpartum depression within 2 weeks of delivery. Although in the current study it showed only 12% of postpartum depression and the prevalence of possible depression was 19% which is comparable to the pooled estimate of systematic review done by Ravi Prakash Upadhyay et al.

In another study done by Desai Nimisha et al [7] titled “Study of Prevalence And Risk Factors Of Postpartum Depression” prevalence of postpartum depression was 12.5% which is similar to current study. Gender, multigravida, abortion history were strongly associated with post-partum depression, however these factors were not analysed in the current study.

In the current study, Immediate outcome of delivery, Breast feeding, age of the mother is significantly associated with Depression of varying severity.

In a study done in Anand Gujarat [8] titled “Characteristics of Postpartum Depression in Anand District, Gujarat” it was observed prevalence of PPD as 48.5% using cutoff score of 10.5 for classifying depression in Gujarati women. In the current study when 10 is taken as cut off for possible depression the prevalence was 19%.

Factors associated with depression were: age of mother, modified Kuppuswami category (MKC) score, family type, violence from husband, gravida, para and sex of infant when compared to present study were Breast feeding, SES, immediate outcome of delivery, age of the mother. In a systematic review done by Prabhu et al [9] titled, “Prevalence and Associated risk Factors of Postnatal Depression in South Asian region-A Systematic review” the pooled estimate of 28 cross sectional and cohort studies was 26% which is comparable to current study of 19% when cutoff was taken as score of 10.

**CONCLUSION**

Unrecognized postpartum Depression is clearly one important problems in rural India and EPDS can be used effectively by self or by Health workers to screen postpartum Mothers for Depression and act early. Efforts and guidelines should be given to screen postpartum Depression at primary Health care centre.

**FUNDING**

Nil

**CINFLICT OF INTEREST**

None

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