



## SCREENING FOR POST-PARTUM DEPRESSION USING EDINBURGH POSTNATAL DEPRESSION SCALE IN A TERTIARY CARE CENTRE.

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### ABSTRACT

**AIM:** To determine the need to screen post-partum women for post-partum depression using 10 item-EPDS score.

**OBJECTIVE:** To determine the prevalence of an Edinburgh Postnatal Depression Scale (EPDS) score of  $\geq 13$  in post-partum women and to evaluate the association of different sociodemographic and obstetric factors with post-partum depression.

**MATERIAL AND METHODS:** All females delivered at Sharda hospital during the study period of 90 days were recruited for the research after looking for exclusion criteria and obtaining written and informed consent. They were screened using 10 item EPDS score questionnaire and score was given accordingly after third postpartum day.

**STUDY DESIGN:** Prospective observational study.

**RESULTS:** Prevalence in our study population was found to be in the range that is seen across the globe. Most of the women with EPDS score of  $\geq 13$  belonged to age group of 20-35 years, were from urban sectors, had female child and delivered by caesarean section. Intra-uterine death and preeclampsia were among high risk factors which had significant association with post-partum depression.

**CONCLUSION:** Routine screening for post-partum depression has significant impact on improving mental health of postpartum females by early diagnosis and prompt treatment of any underlying psychiatric illness. This improves the postpartum health of a female and ultimately helps to improve the infants well-being.

**KEYWORDS:** EPDS (Edinburgh Post-Natal Depression Score), Post partum depression, Intra-uterine death, preeclampsia.

### INTRODUCTION

Depression is common in pregnant and postpartum women and is associated with untoward consequences for the mother, child, mother-infant relationship, and marital relationship<sup>1,2</sup>. Maternal depression that damages the relationship between the mother and her infant, contributes to a higher risk for infant and child's developmental outcomes. Competence in maternal behaviour and health is very important for ensuring the infant's safety and well-being.

The prevalence of postnatal depression ranges from 7.6 to 39 % in various areas of the world. PPD is associated with various chronic medical disorders and addiction such as tobacco smoking and alcohol abuse<sup>3,4</sup>. Differences are based on the tools used for screening and the population which is tested<sup>5</sup>. Screening helps in improving detection and management of perinatal depression. Depression screening involves use of a self-report questionnaires to identify women above a cut-off limit for further evaluation and examination<sup>6</sup>.

The Edinburgh Postnatal Depression Scale (EPDS) was designed by Cox et al. in 1987<sup>7</sup>. Based on data from various studies, it has been seen that EPDS has a variable sensitivity of 34-100% and specificity of 44-100%<sup>8</sup>. It is a 10 questions based scale which is valuable and efficient way of identifying a patient at risk of perinatal depression. It is assessment of how a post-partum women has felt in previous 7 days. In case of any doubt, the assessment can be repeated after 2 weeks. An EPDS score of  $\geq 13$  is strongly suggestive of post-partum depression. Patients who score above this cut-point require prompt treatment planning and possible referral for mental health care to psychiatrist. Once post-partum depression is identified, immediate action regarding prompt treatment is essential. In case of any kind of delay in treatment, it could lead to prolonged illness, worsening of symptoms, treatment failure and in some cases may end up with suicide. Evidence based treatment options of post-partum are psychotherapy and antidepressant medication.

NICE guidelines recommends application of EPDS for assessment in pregnant or postpartum females in whom depression is suspected. It recommends against screening in all postpartum females<sup>10</sup>. The UK National Screening Committee and Canadian Task Force on Preventive Health Care recommend against screening<sup>11,12</sup>. This was because of high false positives and lack of evidences from well conducted trials that screening improves mental health outcomes.

However, the United States Preventive Services Task Force (USPSTF) recommends depression screening in pregnant and postpartum women. As per USPSTF, screening should be implemented with adequate systems in place in order to have accurate diagnosis, effective

treatment, and appropriate follow-up<sup>13</sup>. Depression screening is sometimes promoted in low and middle income countries, but it is not known whether it would improve mental health in those settings<sup>2</sup>.

### MATERIALS AND METHODS

This prospective study was conducted at a tertiary care centre in the Department of Obstetrics and Gynaecology in School Of medical Sciences and research, Sharda Hospital, Greater Noida, Uttar Pradesh in the time period of 90 days (September 20121-November 2021). Total of 217 patients were included in the study. This centre caters to all the sections of society.

All postpartum female who delivered at Sharda Hospital during study period of 90 days and have given the consent to participate in research process were included in the study. They were screened for depression third post-natal day onwards after getting written and informed consent. Participants were asked to complete the risk factor questionnaire and depression was assessed using EPDS. Postpartum females who were mentally retarded or had history of any kind of prior psychiatric illness were excluded from the study.

EPDS was developed by Cox et al in 1987 to identify and screen for women having or are at risk of post-partum depression. It's a questionnaire having 10 questions with each answer score ranging from 0-3 and total score ranging from 0-30. In this study, women having score  $\geq 13$  were considered to be at risk of depression of varying severity.

The primary outcome was EPDS score of  $\geq 13$ . Postpartum females whose score was  $\geq 13$  were considered to be at risk of depression. It was done using the questionnaire system. Secondary outcomes were to review various demographic factors and high risk factors in delivered females and their association with the post-partum depression. Complete history was taken regarding age, gravida, parity, region, mode of delivery, gender of baby and various medical disorders in pregnancy.

Edinburgh Postnatal Depression Scale (EPDS) (4)

in the past 7 days:	
1. I have been able to laugh and see the funny side of things Yes, most of the time No, not at all	16. Things have been getting on top of me Yes, most of the time No, not at all
2. I have looked forward with enjoyment to things Yes, most of the time No, not at all	17. I have been so unhappy that I have had difficulty sleeping Yes, most of the time No, not at all
3. I have blamed myself unnecessarily when things went wrong Yes, most of the time No, not at all	18. I have felt sad or miserable Yes, most of the time No, not at all
4. I have been anxious or worried for no good reason Yes, most of the time No, not at all	19. I have been so unhappy that I have been crying Yes, quite often No, not at all
5. I have felt like a failure Yes, most of the time No, not at all	20. The thought of harming myself has occurred to me Yes, quite often No, not at all
6. I have been unable to get going for no very good reason Yes, quite a lot No, not at all	

**STATISTICAL ANALYSIS-**

Results were analysed using Chi-square test and Fischer exact test to evaluate the significance of association of risk factors with post partum depression. P values were calculated and the value <0.05 were considered to be statistically significant.

**RESULT**

This study included a total of 217 females over the period of 90 days which was the defined study period. Majority of the women belonged to age group 20-35 years. Most of them were multiparous and belonged to rural area. Out of 217 women studied, 20 women had score of  $\geq 13$  showing 9.2% of prevalence of post-partum depression (Table 1), Fig. 1.

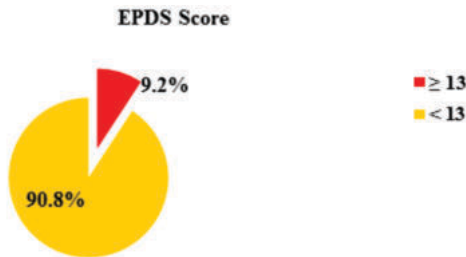


Fig. 1

Table 1.

EPDS Score	N = 217	Percentage
$\geq 13$	20	9.2%
< 13	197	90.8%

This data correlates with the findings in various other studies globally as well as in India.

Table 2.

Age (years)	EPDS Score		p value
	$\geq 13$	< 13	
< 20	3(15%)	5(2.5%)	0.280
20- 35	12(60%)	167(84.8%)	0.006
> 35	5(25%)	25(12.7)	0.129
Parity	EPDS Score		p value
	$\geq 13$	< 13	
Primiparous	12(60%)	56(28.4%)	0.004
Multiparous	8(40%)	141(71.6%)	
Region	EPDS Score		p value
	$\geq 13$	< 13	
Rural	7(35%)	109(55.3%)	0.082
Urban	13(65%)	88(44.7%)	

Table 2. shows the association of certain sociodemographic factors to the depression in post-partum females. Most of the women recruited in the study belonged to 20-35 yrs of age group and P value was found to be statistically significant(0.006). Among women with EPDS score  $\geq 13$ , (n=20) 60% were in this group.

More women belonged to multiparous group while EPDS $\geq 13$  was more seen in primiparous females(60%) and P value was found to be statistically significant (0.004).

Out of 20 females with EPDS score $\geq 13$ , 65% belonged to urban region while P value was found to be 0.082. Increasing westernisation has been found to be a contributing factor for increasing depression in young post-partum females.

Table 3.

Gender of Baby	EPDS Score		p value
	$\geq 13$	< 13	
Male	5(25%)	111(56.3%)	0.007
Female	15(75%)	86(43.7%)	
Mode of Delivery	EPDS Score		p value
	$\geq 13$	< 13	
NVD	8((40%)	113(57.4%)	0.136
LSCS	12(60%)	84(42.6%)	

Regarding gender of baby,(Table 3.) those women who had female child birth scored  $\geq 13$  (75%) out of the total with higher score(n=20). P value was found to be statistically significant (0.007).

Out of the total women with higher score, 60% had delivered by LSCS and P value was found to be 0.136.

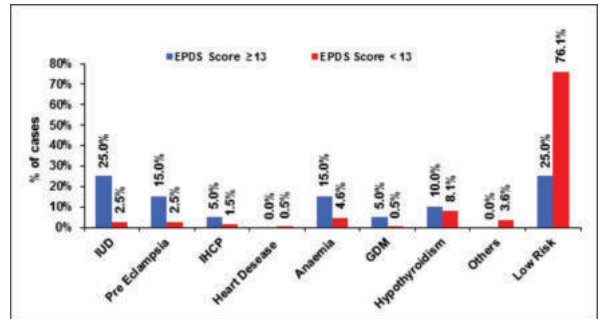


Fig. 2

Table 4.

High Risk Factors	N = 217	EPDS Score $\geq 13$	EPDS Score < 13	p value
IUD	10	5	5	<0.001
Pre-eclampsia	8	3	5	0.028
IHCP	4	1	3	0.323
Heart Disease	1	0	1	1.000
Anaemia	12	3	9	0.086
GDM	2	1	1	0.176
Hypothyroidism	18	2	16	0.675
Others	7	0	7	1.000
Low Risk	155	5	150	<0.001

Among obstetric and medical risk factors(Table 4. and Figure 2), intrauterine death and preeclampsia had P values as 0.001 and 0.028 respectively which was statistically significant.

5 out 155 in low risk category had EPDS score  $\geq 13$  and it was found to be statistically significant (p value 0.001).

**DISCUSSION**

Post-partum depression is a serious health concern which needs attention in order to diagnose it at early stage and for prompt treatment. EPDS 10-item questionnaire system is a very important screening tool which needs to be implemented routinely in all delivered females. EPDS score of  $\geq 13$  screens those female who are at risk of depression of varying severity. In our study 20 out of total 217 study subjects had score of  $\geq 13$ , hence the prevalence was found to be 9.2% which is similar to Chaaya et al<sup>14</sup>.

Parity has been found to have impact on mental health in post-partum period leading to post-partum depression. This was seen in a Japanese study by Mori et al<sup>15</sup>. Delayed initiation of lactation and anxiety have been seen more frequently in primiparous females. It has been seen that as the number of births increases the frequency of postpartum depression decreases. In our study 60% of the total women with EPDS score  $\geq 13$  were primiparous and P value was found to be significant.

Gender of the baby has got significant impact on EPDS score  $\geq 13$ . Most of the studies have shown that mother with female newborn are more likely have higher score and land into depression. It has been seen that there is strong gender bias in India supporting more of birth of boys<sup>16</sup>. Adewuya et al. in Nigerian women study found out that female sex of the baby was one of important predictors of post-partum depression<sup>17</sup>. Similarly Chandran et al in Tamil Nadu had shown that birth of a girl child was an important factor for depression<sup>18</sup>. Result in our study had also shown that 75% of the women with EPDS score  $\geq 13$  had female new born. P value was found to be 0.007 which was statistically significant.

Mode of delivery has not got significant impact on development of post-partum depression<sup>7</sup>. In our study the p value for same was 0.136 and was not statistically significant.

Including all antenatal complications and high risk pregnancy, women who had intrauterine death and hypertensive disorder of pregnancy had statistically significant p values. Intra uterine death is a serious complication of pregnancy and disturbs the psychological well being of the female. It leads to depression in long run and anxiety for next pregnancy<sup>19</sup>. Women with hypertensive disorders of pregnancy are

exposed to various maternal and neonatal complications. This could be the reason behind disturbed psychological well being<sup>20</sup>.

Therefore screening for various high risk factors and its association with post-partum depression becomes an important routine process not just to detect post-partum depression at its earliest stage but also to help in prompt treatment. This way it might help in improving mother's overall health, bonding with the infant and children's developmental outcomes.

## CONCLUSION

The study that we conducted at our institute over the period of 90 days recruiting 217 post-partum females showed the prevalence of 9.2 % which is similar to the prevalence in India and worldwide. Various sociodemographic factors and medical risk factors have association with the post-partum depression. Routine screening helps in early diagnosis of depression and thus helps in initiating early treatment. Mental health is very important for mother infant bonding and child's developmental outcomes. It is being concluded from the study that every women needs to be screened for the post- partum depression and hence it should be universal.

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