

# Is depression common among Postnatal women? A cross-sectional study on Postnatal depression and its associated factors in North Karnataka.

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## Abstract

**Introduction:** Women are more vulnerable to mental disorders like depression during postpartum. Depression if untreated during postnatal period may adversely affects both mother and child health.

### Aims and objectives:

1. To estimate the proportion of postnatal depression among women attending Maternal and Child Health Clinic in Teaching Hospital.
2. To determine the risk factors associated with postnatal depression among women attending Maternal and Child Health Clinic in Teaching Hospital.

**Methodology:** A hospital based cross sectional study was conducted in Maternal and Child Health clinic in Teaching hospital among 100 postnatal women. A predesigned and pretested questionnaire was administered to postnatal women to screen for depression by EDPS.

**Results:** Among 100 study subjects 60% of them belonged to 21-25 years age group and 70% had first pregnancy at the age of 15-20yrs.

**Conclusion:** The proportion of depression was 15% among postnatal women and predictors of postnatal depression were women with more than one living child and who had female child in the recent delivery.

**Keywords:** Depression, Postnatal women, Risk factors, Screening, Edinburg Depression Scale.

## Introduction

Depression is most common mental disorder in the modern world affecting both male and female. Depression will rank as second major cause of disease burden with continuous raise in prevalence.<sup>1</sup> The prevalence of postpartum depression has been estimated as 100–150 per 1000

births globally.<sup>2</sup> Prevalence of postnatal depression ranges from 13 to 19 % in Western countries and 11 to 26.3 % in India.<sup>3,4</sup> Depression during antenatal period can continue even after delivery or it can start soon after delivery and it needs to be treated.<sup>5</sup> Many studies reported that depression in postnatal period can lead to recurrent or chronic depression affecting the mother–infant relationship and child growth and development.<sup>1, 6-8</sup>

The children of mothers with postnatal depression are at greater risk of being underweight and stunted as shown by meta-analysis of studies done in developing countries.<sup>7</sup> Depressed mothers are less likely to breastfeed their babies and seek health care appropriately.<sup>6</sup> Pregnancy and childbirth have a variety of physiological, psychological and social consequences on mother's health and attitudes toward it vary from culture to culture. Postnatal depression has a significant impact on the mother, the family, her partner and mother-infant interaction. Cognitive, behavioural, and interpersonal problems are more common among children of mothers with postnatal depression compared to children of non-depressed mothers.<sup>9</sup> The significant predictive factors for postnatal depression are self-esteem, unplanned pregnancy, antenatal depression, antenatal anxiety, marital relationship, marital status, childcare stress, infant temperament, low social support and socioeconomic status.<sup>10</sup> It also have adverse psychological outcomes in children up to 10 years according to longitudinal study done in a low- and middle-income country.<sup>11</sup>

Postnatal depression remains undiagnosed and hence untreated especially in developing countries like India which may adversely affects both mother and child health. Screening of postnatal depression at Primary health care by medical officer or trained nursing staff helps in early diagnosis and management of depression which inturn would help to improve the both maternal and child health. With this background the present study was conducted to estimate the proportion of postnatal depression and to identify the associated risk factors.

## Objectives

1. To estimate the proportion of postnatal depression among women attending Maternal and Child Health Clinic in Teaching Hospital.
2. To determine the risk factors associated with postnatal depression among women attending Maternal and Child Health Clinic in Teaching Hospital.

## Methodology

A cross sectional study was conducted among postnatal women attending Maternal and Child Health clinic in Teaching hospital for a period of 3 months. Based upon the prevalence<sup>12</sup> of Postnatal depression of 11% and with the help of formula  $n = \frac{4pq}{L^2}$ , 95% confidence interval with 6.5% marginal error,  $n=92.6 \approx 100$  for postnatal women. The study subjects were selected by Purposive sampling. Postnatal women having youngest child/ children more than one week and equal or less than 6months of age and who gave consent were included in the study. Postnatal Women with life threatening complications were excluded from the study. Informed

written consent in local Kannada language was taken from all the study participants for voluntary participation. The study subjects were administered with a predesigned and pretested questionnaire, which includes socio-demographic profile, other risk factors and Edinburg scale to diagnose depression.

**The 10 question Edinburg Depression Scale<sup>13</sup> (EDS)** was valuable, efficient and reliable screening tool for identifying people at risk for depression in India. It indicates how the mother has felt during the previous week. Each question was scored as 0, 1, 2 and 3 with maximum score of 30 and minimum score of 0 (zero). The study subjects with score of 13 and above were pointed towards the likelihood of presence of depression.

**Statistical Analysis:** Data was analyzed for frequency, proportions and chi square test and it was calculated using SPSS statistical software (version 16). Two-sided 'p' value of <0.05 was considered as statistically significant.

## Results and Discussion

Among 100 study subjects 60% of them belonged to 21-25 years age group, 38% completed High school and 26% PUC/Diploma, 85% were Hindus and 93% were Housewives. 84% postnatal women were from rural area and 54% lived in joint families. Majority 59% of postnatal women belonged to Upper Lower class by **modified B. G. Prasad socio-economic classification<sup>14</sup>** (Table 1).

**Table 1: Distribution of the Postnatal mothers according to Socio-demographic factors (n=100)**

Socio-demographic factors	Categories	Frequency	Percentage
Age (years)	15-20	10	10
	21-25	60	60
	26-30	27	27
	31-35	3	3
Education of women	Illiterate	2	2
	Literate	5	5
	Primary school	11	11
	Middle school	11	11
	High school	38	38
	PUC/Diploma	26	26
	Graduate	7	7
Occupation of mother	Housewife	93	93
	Working	7	7
Type of family	Nuclear	45	45
	Joint	54	54

	Three generation	1	1
<b>Socio-economic status</b>	Upper class	8	8
	Upper middle class	15	15
	Lower middle class	9	9
	Upper lower class	59	59
	Lower class	9	9
	<b>Total</b>		100

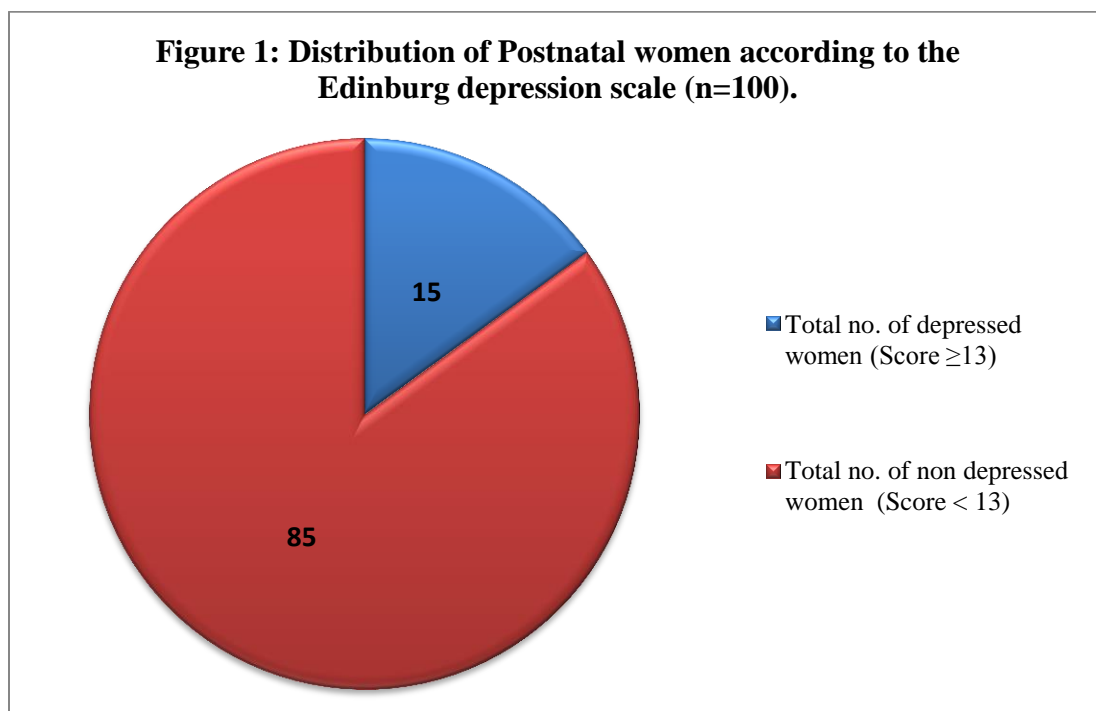
Majority of study subjects (65%) attained menarche at 11-13 years of age and most (65%) of them married at 15-20years of age. 29% of study subjects had consanguineous marriage and 74% were married for 1-5years. 70% study subjects had first pregnancy at the age of 15-20yrs. 53% of study subjects had Parity 1, Living 1 and 98% had no previous abortion. Majority of study subjects 96% had planned the pregnancy. 40% had male child and 60% had female child in recent delivery. 53% of study subjects had normal delivery, 98% postnatal women breast feed their child and 99% had UTI as postnatal complications. 84% of study subjects had newborn with birth weight more than 2.5kg (**Table 2**) in contrast to the study done by **Audrey prost et al**<sup>15</sup> in which majority 52.1% of postnatal women had more than one children, 69.5% had no health problem in the postpartum period, 98.3% had normal labour, 88.7% mother wanted the pregnancy and 89.3% father wanted the pregnancy.

**Table 2: Distribution of study subjects according to the Obstetric and Postnatal history (n=100)**

<b>Obstetrics history</b>	<b>Options</b>	<b>Postnatal mothers</b>	
		<b>Frequency</b>	<b>Percentage</b>
<b>Duration of marriage</b>	1-5yrs	74	74
	6-10yrs	23	23
	11-15yrs	2	2
	>15yr	1	1
<b>Age at first pregnancy</b>	15-20yrs	70	70
	21-25yrs	25	25
	26-30yrs	5	5
<b>Parity</b>	1	53	53
	2	37	37
	3	9	9
	4	1	1
<b>Sex of previous children</b>	Male	40	40
	Female	60	60
<b>Sex of new born</b>	Male	40	40
	Female	60	60
<b>Mode of delivery</b>	Normal	53	53

	LSCS	47	47
<b>Birth weight</b>	<2.5kg	15	15
	2.5-3.5kg	84	84
	$\geq 3.6$	1	1
<b>Breast feeding</b>	Yes	98	98
	No	2	2
<b>Postnatal complications</b>	UTI	99	99
	Mastitis	1	1
	<b>Total</b>	<b>100</b>	<b>100</b>

According to the 10 question Edinburg Depression Scale, 15 (15%) postnatal women who had score equal to or more than 13 were screened positive for depression and 85 (85%) postnatal women with score less than 13 were not depressed (**Figure 1**) was almost similar to the study done by **Shriraam V et al**<sup>12</sup> in which 11% of postnatal women were depressed (an EPDS score of 10 and above) and in contrast to study done by **Shenoy HT et al**<sup>10</sup> 29.4% were diagnosed with depression having score of EPDS>13 in the postnatal women and postnatal depression was 11% using revised Clinical Interview Schedule (CIS-R) reported by **Chandran et al**<sup>16</sup>.



Out of 100 postnatal women 15% were depressed, majority 12% belong to 21-30years age group, 6% of them had completed High school, all were housewives, 9% of their husband had skilled occupation, 14% resided in rural area, 7% had nuclear family and 8 had joint family and 9% belonged to upper lower class (**Table 3**) in contrast to study done by **Modi VP et al**<sup>17</sup>

24.44% women of  $\leq 30$  years had depression and 10% women aged  $>30$  years had depression, 27.17% women had depression living in families having  $<4$  members and 16.46% women were found to have depression in families having  $>4$  members.

**Table 3: Distribution of Postnatal women according to the association between Socio-demographic factors and Depression (n=100).**

Socio-Demographic factors	Categories	EDS Depressed		EDS Not-depressed		Total	%	P-value
		Frequency	Percentage	Frequency	Percentage			
<b>Age (years)</b>	1)15-20	1	1	9	9	10	10	$X^2 - 7.303$ df-3 p= 0.063
	2)21-25	7	7	53	53	60	60	
	3)26-30	5	5	22	22	27	26	
	4)30-35	2	2	1	1	3	3	
<b>Education of women</b>	1)Illiterate	0	0	2	2	2	2	$X^2 - 6.310$ df-6 p= 0.389
	2)Literate	2	2	3	3	5	5	
	3)Primary school	0	0	11	11	11	11	
	4)Middle school	3	3	8	8	11	11	
	5)High school	6	6	32	32	38	38	
	6)PUC/Diploma	3	3	23	23	26	26	
	7)Graduate	1	1	6	6	7	7	
<b>Occupation of mother</b>	1)Housewife	15	15	78	78	93	93	$X^2 -1.328$ df-4 p= 0.857
	2)Working	0	0	7	7	7	7	
<b>Type of family</b>	1)Nuclear	7	7	38	38	45	45	$X^2 - 0.189$ df-2 p= 0.91
	2)Joint	8	8	46	46	54	54	
	3)Three generation	0	0	1	1	1	1	
<b>Socio-economic status</b>	1)Upper class	2	2	7	7	9	9	$X^2 -2.184$ df- 4 p= 0.702
	2)Upper middle class	1	1	8	8	9	9	
	3)Lower middle	0	0	8	8	8	8	

class							
4)Upper lower class	9	9	50	50	59	59	
5)Lower class	3	3	12	12	15	15	
<b>Total</b>	15	15	85	85	100	100	



Majority 9% of depressed postnatal women had menarche at the age of 11-13yrs, 12% had marriage at the age of 15-20yrs, 9% had non consanguineous marriage, 8% had married life of 1-5yr, 12% had pregnancy at age of 15-20yrs, 11% had female child in recent delivery (**Table 4**) and according to the study done by **Shenoy HT et al<sup>10</sup> (n=119)** in the depressed postnatal women, 32 had planned pregnancy, 20 were primigravida, 24 had LSCS, 23 had marriage at the age of 20-30yrs, 22 had female child in recent delivery, 18 had newborn with birth weight <2.5kg, 21 had no breast feeding problems.

Majority of depressed study subjects 10 (10%) had more than one living child and 8% of postnatal women had female child in recent delivery, which were statistically significant and was similar to study done by **Shriraam V et al<sup>12</sup>**.

8% had LSCS for recent delivery and 12% had newborn with birth weight more than 2.5kg and 14% had breastfeed their child within one hour which were statistically significant. All 15% depressed postnatal women had planned pregnancy, postnatal complications and had good relationship with their husband. 13% of depressed postnatal women were satisfied with their in-laws whereas 2% of depressed postnatal women were not satisfied with their in-laws which was statistically significant. (**Table 4**)

**Table 4: Distribution of study subjects according to the association between Obstetric factors and Postnatal Depression (n=100).**

Obstetrics factors	Categories	Depressed		Not depressed		Total frequency	Total Percentage	P-value
		Frequency	Percentage	Frequency	Percentage			
<b>Parity</b>	1	4	4	49	49	53	53	$X^2$ -14.138 df-3 p= 0.003
	2	6	6	31	31	37	37	
	3	4	4	5	5	9	9	
	4	1	1	0	0	1	1	
<b>Living</b>	1	4	4	49	49	53	53	$X^2$ - 11.501 df-3 p= 0.009
	2	6	6	31	31	37	37	
	3	4	4	5	5	9	9	
	4	1	1	0	0	1	1	
<b>Sex of new born</b>	Male	4	4	36	36	40	40	$X^2$ - 1.307 df-1 p= 0.253
	Female	11	11	49	49	60	60	
<b>Mode of delivery</b>	Normal	7	7	46	46	53	53	$X^2$ - 5.802 df- 2 p= 0.05
	LSCS	8	8	39	39	47	47	
<b>Breast feeding</b>	Yes	14	14	84	84	98	98	$X^2$ - 7.782 df- 2 p= 0.02
	No	1	1	1	1	2	2	
<b>Medical condition of mother</b>	No medical illness	14	14	78	78	92	92	$X^2$ - 0.183 df- 2 p= 0.913
	Hypertension	1	1	6	6	7	7	

	Diabetes Mellitus	0	0	1	1	1	1	
<b>Relationship with husband</b>	Satisfied	15	15	84	84	99	99	$X^2 - 0.17$
	Not Satisfied	0	0	1	1	1	1	df- 1 p= 0.673
<b>Relationship with in-laws</b>	Satisfied	13	13	83	83	96	96	$X^2 - 4$
	Not Satisfied	2	2	2	2	4	4	df- 1 p= 0.045
<b>Family problems</b>	Absent	14	14	83	83	97	97	$X^2 - 0.815$
	Present	1	1	2	2	3	3	df- 1 p= 0.367
<b>Total</b>		15	15	85	85	100	100	

### Conclusion and Recommendation

Among postnatal women attending Maternal and Child Health clinic in tertiary hospital the proportion of depression was 15% by Edinburg Postnatal Depression Scale (EPDS), which may only, represents a small fraction of burden in the community. The postnatal depression was more among women with more than one child and who had female child in the recent delivery. Integrating screening of postnatal depression into routine postnatal care at primary health care may help in early diagnosis, identification of associated factors and management of depression which inturn improve overall health of mother and child. Further studies on postnatal depression at the field level are required to give a real scenario of the problem to help the policy makers.

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