

ORIGINAL ARTICLE

Association of Anxiety and Depression in Postpartum Period: a Hospital Based Evaluative Study

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ABSTRACT:

Background: Postpartum period is associated with higher rates for depression, blue and psychosis. Anxiety is also significant. These disorders may have serious implications in the cognitive development of the infant. Many symptoms of both disorders overlap with each other. There is relative lack of data in this area. We tried to estimate postpartum anxiety and depression in a group of women and tried to assess their correlation.

Material & Method: 100 women were assessed for depression and anxiety using Edinburgh Postnatal Depression Scale, Hospital Anxiety and Depression Scale, ICD-10 criteria. They were selected on random basis. Analytical statistical methods were utilized.

Result: 18% and 15% depression and anxiety were found respectively. Higher maternal age, parity, any post operative history correlated with it significantly. It was found that anxiety and depression are not associated significantly and are distinct categories. However 1% of variance of symptomatologies of depression can be explained by anxiety and 20% of variance of symptomatologies of anxiety can be addressed by that of depression.

Conclusion: Depression and anxiety are separate clinical conditions having significant prevalence in postpartum period. As anxiety, depression, psychosis all are increased in postpartum period a term 'Postpartum mood disorder' may be proposed. Using easy screening tools by the paramedical workers will help early detection of the cases and it will have long term effect on cognitive development of the infants.

Key words: anxiety, depression, postpartum

INTRODUCTION

Both anxiety and sadness are part of normal human behaviour. A person is said to be suffering from these disorders if he/she exhibits significant distress and impairment in functioning as a result of his/her symptoms for a specified period of time. The morbidity and mortality associated with anxiety and depression

are considerable. Again their co morbidity is of particular interest. The associations between these disorders are explained by interaction of three systems of our body- neuroendocrine system, autonomic nervous system, and immune system. In the WHO primary care study, prevalence of depression and anxiety was 10.4% and 10.5% respectively as found by Sartorius et al. 1996. Even if anxiety and depression are considered to be two distinct disorders clinician frequently find that they are inter related. According to Clark, anxiety and

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depression have been viewed as different points on the same continuum¹. In patients with lifetime depression, prevalence of a lifetime anxiety disorder is high (47% in Epidemiological Catchment Area Study; 58% in National Co-morbidity Study; and 57% in an earlier meta analysis)^{1,2,3}. Although pure anxiety without depression is more common than pure depression without anxiety, the prevalence of depression in anxiety is still high: 56% in the meta-analysis found by Clark¹.

Sichel and Driscoll, 1999 explained women's increased vulnerability to mood disorders at critical times in her life, such as puberty, childbirth or menopause by using his EARTHQUAKE MODEL for conceptualization of woman's mental health. Depression can result from long-term 'biochemical loading' as a woman's brain responds to repeated stresses in her life. Altshuler et al. remarked that, women in the childbearing age are vulnerable to mood and anxiety disorders, and physicians in all patient care specialties need to be familiar with the prevalence and course of these disorders, particularly during pregnancy and the postpartum period⁴. In a review Andrews 1999 discussed postpartum depression (PPD) as an irritable, severely depressed mood occurring within 4 weeks of giving birth and possibly as late as 30 weeks postpartum. Murray et al. in his review on postpartum depression commented that the growing interest in postpartum mental disorders is due to the negative impact on the child's emotional and cognitive development exerted by maternal psychiatric problem⁵.

Anxiety has received very little importance in the postpartum period, however lately it is gaining recognition. In a study Wenzel et al. 2003 found that 4.4% met DSM-IV criteria for generalized anxiety disorder, and an additional 27.9% endorsed sub-syndromal difficulties with generalized anxiety. Jones et al. 2001 commented that anxiety disorders with or without panic attack and obsessive symptoms might develop during postpartum period. Researchers found that 11% mothers met criteria for major depression during the first 4 months postpartum, and an additional 13% met criteria for probable depression at 5 to 9

months postpartum⁶. In contrast 7.0% of the large cohort had a visit or prescription for depression. Hence a large population does not get attention to their problem⁶.

Although few studies have been done in India in respect to postpartum depression, studies in relation to postpartum anxiety are scarce. Again in India for a long time Reproductive Child Health Programmes are going on but this aspect of maternal health and infant health is neglected till now. Considering these facts the present study was designed to find out the prevalence of depression and anxiety in postpartum period along with the association of these disorders to each other.

MATERIAL & METHOD

This cross-sectional study was conducted in Gauhati Medical College and Hospital, Guwahati, a premier health institute in the north-eastern region of India. The study sample comprised of 100 women giving birth to their babies at Gauhati Medical College and Hospital selected on simple random basis. The interview was conducted at the outpatient department of obstetrics and gynaecology when the mothers came for their regular postnatal check-up and immunization of their babies at 6 weeks postpartum.

Inclusion criteria

Study group

The subjects meeting the following criteria were included in the study cohort-

1. Women of 18-42 years age giving birth to their babies at Gauhati Medical College.
2. Women giving informed consent for the study.
3. Women were literate.
4. Married women.

Exclusion criteria

Women with the following criteria were excluded from the study

1. Known chronic medical illness like asthma, chronic painful condition, hypertension, diabetes, neurological disorders, and chronic

gynaecological condition like white discharge per vaginum.

2. Known chronic psychiatric illness.
3. Known malignant condition.
4. Any history of substance dependence.
5. Any evidence of psychosis in the present postpartum period.
6. Patients receiving some medication continuously for last six months except for iron and folic acid supplements.
7. Any disability causing functional impairment.
8. Birth of a congenitally malformed baby.
9. Death of the newborn.
10. Death of important family members in last six months.

Sampling procedure

The women giving birth to their babies at Gauhati Medical College and coming for the routine postnatal check-up after discharge from hospital at 6 weeks postpartum comprised the study sample. The samples were taken as per systematic random sampling. In all cases a detailed history and mental status examination along with physical examination were carried out after the gynaecological examination done by doctors from department of obstetrics and gynaecology.

Tools used

1. A semi structured interview schedule for collecting socio-demographic and obstetrical data
2. Edinburgh Postnatal Depression Scale (EPDS): EPDS was designed specifically to detect Post Partum Depression, PPD⁷. It contains 10 self reported items, each scoring 0-3, depending on severity. A score of 10 requires repeat of the instrument in 2 weeks and a score above 13 requires further assessment for clinical depression⁸. It has been validated in Assamese⁹.
3. The Hospital Anxiety and Depression Scale (HADS): It is a self rating scale. This scale has

two subscales viz. HADS- Depression (HADS-D) and HADS- Anxiety (HADS-A). Each subscale has seven items with rating from 0-3. A cut-off score more than or equal to 11 for each subscale is considered a definite case (Zigmond A, Snaith R 1983).

4. ICD-10 criteria for clinical description and diagnosis guidelines: International Classification of Diseases and Related Health Problems, 10 th revision is the current diagnostic guideline for diagnosing the health problems across the globe adopted by the World Health Organization. The chapter V(F) is related to the behavioural problems.

Interview procedure

After a brief introductory phase informed consent from the subjects were taken after explaining the nature and purpose of the study. The EPDS was given to the subjects while they were waiting for their gynaecological examinations. After the gynaecological examination they were evaluated as per the ICD guidelines.

Analysis of data

The data obtained for the present study has been analyzed by the Fisher's exact test, chi square test, t test using the instat statistical package.

RESULTS

A total of 100 women were assessed for depressive and anxiety disorders. Of the 100 women 18 were found to have depressive disorders while 15 had anxiety disorders. The relationship of sociodemographic variable and obstetrical variables with these disorders has been shown in table 1.

Women with depressive and anxiety disorders were significantly older than the non diseased group ($p < .05$). Moreover mothers with some operative history also had higher chances of getting these disorders. Mothers with higher orders of pregnancy were more prone to get depressive disorders. Both the groups consisting of mothers with depressive

Table 1. Socio-demographic and obstetrical variables

	Depression n=18	Anxiety n=15	No diagnosis n= 67	significance
Religion Hindu muslim	12 5	12 3	46 20	p>.05
Family Joint Nuclear	7 11	6 9	32 35	p>.05
Locality rural Urban Semiurban	11 6 1	5 4 6	42 13 12	p>.05
Age (mean)	28.05	29.0	23.43	X ² =18.98 df 2 p<.05*
Education school college	7 11	4 11	39 28	p>.05
m/o delivery spont CS Assisted	8 10 0	3 10 2	37 23 7	X ² =6.64 df 2 p<.05*
Male baby Female baby	9 9	7 8	32 35	p>.05
b/o 1 st baby 2 nd baby 3 rd baby >3 rd	5 4 9 0	7 2 3 3	41 12 12 2	X ² =6.64 df 2 p<.05*

Table2: Scores on Edinburgh Postnatal Depression Scale

EPDS	Depression(n=18)	Anxiety(n=15)	No diagnosis(n=67)
>13	16 (88.89%)	9 (60%)	3 (4.48%)
<13	2 (11.11%)	6 (40%)	64 (95.52%)*
Mean value	16.11±3.08	14.33±2.52	7.63±2.12 #

*p<0.001, Fisher’s test p<0.001, ANOVA #

Table 3: Scores in subscales in Hospital Anxiety Depression scale

Category	No.of cases	HAD- depression subscale		HAD- anxiety subscale	
		Mean	Std dev	Mean	Std dev
Depression	18	13.78	1.44	7.67	1.88
Anxiety	15	9.40	3.58	11.73	2.84
No diagnosis	67	7.48	1.74	7.01	2.36

p<0.001, ANOVA

disorders and anxiety disorders had significantly higher score on EPDS. This association was found to be significant on Fisher’s test. Again the mean score of EPDS in the three groups had significant differences as shown in table 2. But the difference of mean value of EPDS in the group having depressive and anxiety disorders was not significant.

Similarly Table 3 shows that the mean values of depression and anxiety subscales in the HADS differ significantly in the three groups. Again Table 4 shows that values in the depression and anxiety Subscale in the depressed group is correlated in a weak manner. But the correlation is not significant (p>.05). In case of depression 1% variance of symptomatologies can be explained by anxiety. Similarly the correlation between anxiety and depressive symptomatologies in the anxiety disorder group is not significant.

In anxiety, from the co-efficient of determination we found that 20% of the variance of symptomatologies can be explained by variation in the depressive symptomatologies.

DISCUSSION

Use of multiple self report inventories forced us to exclude illiterate women from the study. So we selected literate women above 18 years of age for the present study. We found depression and anxiety disorders in 18% and 15 % of the cases. Higher prevalence has been observed in many previous findings both western and eastern^{10,11}. Adewuya et

Table 4 : Relationships between depressive and anxiety symptomatologies

Category	No. of cases	HAD score		Co-efficient of co-relation(r)	Co-efficient of determination (r ²)	P value
		Depression (mean)	Anxiety (mean)			
Depression	18	13.78	7.67	0.12	0.01	>0.05
Anxiety	15	9.4	11.73	-0.45	0.20	>0.05

al. replicated similar results in Nigerian women¹². In a study done in India, it found higher prevalence of postpartum depression and its significant association with antepartum depression¹³. Anxiety disorders were also higher in the postpartum period. Higher prevalence has been reported by many researchers,^{6,14,15}. Findings from India are relatively less in this regard. A researcher reported 11% of generalized anxiety disorders in mothers attending a postpartum clinic in India¹⁶. We also voice in similar manner. Hence both anxiety and depressive disorders are of concern in postpartum women.

These disorders are found in mothers with older age group as compared with that in the younger mothers. This goes against a previous finding that reported the mean age for onset of depression to be 22.8 years¹⁷. This contradiction may be the result of the sampling procedure because we excluded the mothers below 18 years in our study.

The significant relationship of anxiety and depression with operative history goes in line with previous findings^{18,19}. This might be due to the somatic symptoms found in postoperative women which correspond to the somatic symptoms found in depressive disorders. Another interesting finding of the study is that as the birth order increases the chances of depression also increases. A similar finding was reported²⁰. Again depressive disorder is said to have a link with infantile development⁵. So we may encourage our population to stick to small family norms.

On the other hand anxiety disorders were higher in first time mothers. Maes et al had similar results²¹. These results are self explanatory. In a poor country like us the entry of a new born in the family carries lots of economic burden so the mother may be concerned with that. Our finding did not found any significant relationship of the sex of the newborn to these disorders. A researcher reported about higher prevalence of depressive illness if the newborn was a female in a study done in Goa, India²². On the other hand another study reported about no significant relationship between maternal depression and her preference for male or female baby¹⁷. This result can

be explained from cultural aspects of the north eastern part of India. In this part of India boys and girls are usually given equal weight.

Higher scores in the EPDS both in the anxiety and depression group goes in line with previous findings²³. The sensitivity of 88.89% and specificity of 85.37% of EPDS in detecting postpartum depression was found in a regional language of India⁹. A researcher commented that it can be regarded as a good tool for assessing anxiety in postpartum period also²³. In the present study also mothers with anxiety disorders scored significantly high than the non diseased group in EPDS score. Hence we may consider it to be a good tool to detect postpartum anxiety too. As the tool is very easy to administer and can be given to even illiterate persons with little aid, this can be utilized as a screening tool for the new mothers so that the conditions are recognized early. This will have long term beneficial effect on the population. The newly created accredited self help activists can be utilized very effectively for this purpose.

In the HADS the scores for depression and anxiety differed significantly. However no significant correlation between the anxiety and depressive symptoms was observed. In case of depression 1% variance of symptomatology can be explained by anxiety and in anxiety, 20% of the variance of symptomatology can be explained by variation in the depressive symptomatology. It establishes that anxiety and depression are separate categories of disorders in postpartum period apart from psychosis. Matthey et al voiced in similar manner and suggested the term 'postnatal mood disorders' for the psychiatric problems in the postpartum period²⁴.

In the current study we looked into the problems of anxiety and depression in postpartum period. Data in relation to anxiety in postpartum period is scarce. Again it gives an idea to integrate mental health component in the Reproductive Child Health Component of health policies prevailing in India. The concept of 'postpartum mood disorder' is a timely one at the time of revision of ICD and DSM. Our study

has the limitations of having smaller subjects for such a common condition and there was no assessment done in the ante partum period. A study that looks into association of anxiety disorders both in antepartum and postpartum period will be interesting.

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