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STUDY OF PREVALENCE AND RISK FACTORS OF POSTPARTUM DEPRESSION

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ABSTRACT

Background: The burden of postpartum depression is significant because it remains unrecognized and it not only affects the mother adversely but also has a negative consequence on the family life and the development of the infant.
Aim: The present study aims to study the prevalence and risk factors of postpartum depression among mothers attending the well baby clinic for vaccination of their
Children.
Methods: Around 200 Gujarati women of postpartum period, up to 1year, were randomly selected and assessed using the semi structured proforma including DSM-IV TR diagnostic criteria for depression and predictive index of postnatal depression, to find out risk factors.
Results: The prevalence rate of postpartum depression was 12.5%. Women who delivered a girl child were observed to have higher odds of getting PPD [OR 5.487, CI (1.563,19.258)], also multigravida [OR 5.391, CI (1.17,24.849)], women having past history of miscarriage [OR 4.613 ,CI(1.299,16.385)], women feeling tense during pregnancy [OR11.716, CI (2.729,50.293)],women who could not confide in partner [10.43 ,CI (3.642,28.219] and absence of someone other than mother and partner in whom the woman could confide [OR 8.909, CI(1.869,42.473)] were found to be the strongest predictors for developing postpartum depression.
Conclusion: A significant proportion of Gujarati women had postpartum depression and many psychosocial factors are associated with it.

Key Words: Postpartum depression, Risk factors, Prevalence

INTRODUCTION

Postpartum depression is a nonpsychotic depressive episode of mild to moderate severity, beginning in or extending into the first postnatal year. Beck described it as a thief that steals motherhood [1]. A Meta analysis of studies mainly based in the developed world found the incidence of postpartum depression to be 12-13 % [2]; with higher incidence in developing countries [3, 4].

Postpartum depression is an important public health problem, having a significant impact on the mother, the family, her partner, mother-infant interaction and on the long term emotional and cognitive development of the baby [1]. Indian studies also show post partum depression as a cause of significant psychiatric morbidity in mothers [3] and malnutrition in infants [5].

Hence preventive measures, early intervention and identification can alleviate sufferings of the mother and minimize its potential harmful effects on the newborn. The first step in preventing postpartum depression is the identification of women who are at risk for developing it. [1]

A recent review of literature found that the following risks factors are the strongest predictors of postpartum depression (in decreasing order of effect): depression during pregnancy, anxiety during pregnancy, experience of stressful life events during pregnancy, low levels of social support and previous history of depression [6]. An earlier Meta analysis of the research had also found the following variables to be predictors of postpartum depression: Prenatal depression, self-esteem, child care stress, prenatal anxiety, marital relationship, infant temperament, marital status, low social support, socioeconomic status and unplanned/unwanted pregnancy [7]. Limited research has been conducted in India so far. In a cohort study from rural area of Tamilnadu, Low income, birth of a daughter when a son was desired, relationship difficulties with mother in

law and parents, adverse life events during pregnancy and lack of physical help were risk factors for the onset of post partum depression [4]. Another qualitative study in the community from rural south india shows that the following factors were associated with postpartum depression: age less than 20 or over 30 years, schooling less than five years, thoughts of aborting current pregnancy, unhappy marriage, physical abuse during current pregnancy and after childbirth, husband's use of alcohol, girl child delivered in the absence of living boys and a preference for a boy, low birth weight and a family history of depression [8]. A study of mothers in goa shows economic deprivation, poor marital relationship, the gender of infant as important risk factors for occurrence of postpartum depression [3]. According to Sichel and Driscoll's 'EARTHQUAKE MODEL', these risk factors can repeatedly weaken a mother's fault line placing her in a dangerous position for an emotional earthquake, such as post partum depression [9].

This study examines the predictors of postpartum depression in Gujarati postpartum women so that early detection is possible and intervention can be planned well in advance.

MATERIALS AND METHODS

The present cross sectional study was conducted at Well-baby clinic of pediatrics department, New Civil Hospital, Surat. 200 Gujarati postpartum women above 18 years of age, up to postpartum period of 1 year were randomly selected and requested to participate in the study. After a brief introductory phase explaining the nature and purpose of the study, an informed consent was taken from the participants.

All women were interviewed using semi-structured Proforma based on DSM-IV diagnostic criteria for major depression [10] and predictive index for postnatal depression, were specifically inquired to assess the risk factors [11].

Following tools were utilized for data collection.

1) Semi structured proforma including socio-demographic and clinical detail

2) DSM IV-TR Diagnostic criteria for Major depressive disorder [10]

3) Predictive index for postpartum depression: It was specifically inquired to assess the risk factors. It was developed by P.J.Cooper et al in 1996 consisting of 40 item questionnaire designed to detect the presence of factors that were likely to increase the risk of postpartum depression. The list of questionnaire covers 37 items; the remaining three concerned the participant's age and occupation and her partner's occupation. Although the sensitivity and specificity of the predictive index is limited, the index offers a system for the prediction of postpartum depression that could be of use in both research and clinical purpose. [11]

Inclusion criterion: All Gujarati postpartum women who visited the well baby clinic for the vaccination of their child in the age range of 18-35 years up to postpartum period of 1 year.

Statistical Analysis

The Prevalence of post partum depression was calculated. The frequency distribution of the socio demographic variables was made in order to describe the data.

The predictive index for postpartum depression was specifically noted, to assess the predictors of post partum depression.

First the univariate analysis was performed to find the association of various predictive factors from the predictive index with the depression as per DSM-IV TR gold standard.

For the purpose of analysis certain of the predictive variables had to be redefined by clubbing some of its categories into one, as the frequencies earlier were not sufficient for any analysis. The univariate analysis was repeated using the clubbed variables and then the logistic regression analysis was done using only the independent variables that were significant at the univariate level finally.

The logistic regression test was applied using backward Likelihood Ratio method, with p values of 0.05 for entry and 0.1 for the removal of the variable from the model, taking depression by DSM as the dichotomous dependent variable and "gravida, previous miscarriage, literacy, any previous termination, any previous still birth, no. of children (one or more), help ever sought for covering, whether the last pregnancy was planned , feelings on learning of pregnancy, whether pregnancy was a positive experience , were there any complications in the pregnancy, did the female feel miserable during her pregnancy, was the female generally tense during the pregnancy, time with current partner, can she confide in partner, how were her relations with the partner in recent times, was there any bereavement in her life with respect to her parents, participants' relationship with her mother currently, sex of child, can the participant confide in anyone else apart from her partner and mother " as the independent variables. The classification table of the model built finally was able to correctly classify the sample for depression 92.5% times.

All the statistical analysis was done using the software Statistical Package for the Social Sciences-version 14 [SPSS 14].

RESULTS

200 Gujarati women were studied for their depression status and risk factors during their well baby visits. The age ranged from 18-35 years with mean age 23.84 years. All women were married at the time of interview. Majority of the women (85%) were Hindu. Around

30% women were illiterate, 50% of women belonged to joint families, 65.5% had urban background, 62% of the women had monthly income less than 3000 rupees and majority (89.5%) were unemployed (housewives). (Table 1)

Table 1: Sociodemographic characteristics

Characteristic	Depressed n=25 (%)	Non-depressed n=175 (%)	Total n = 200 (%)
Age			
< 20 years	1 (4)	5 (2.8)	6 (3)
20-24 years	12 (48)	101 (57.8)	113 (56.5)
25-29 years	10 (40)	49 (28)	59 (29.5)
30-34 years	2 (8)	18 (10.3)	20 (10)
> 35 years	0	2 (1.1)	2 (1)
Education			
No Education	9(36)	50(28.5)	59(29.5)
1-7 standard	10(40)	48(27)	58(29)
Higher secondary	6(24)	61(34.5)	67(33.5)
Further qualification (Courses after 10th)	0	6(3.5)	6(3)
Degree/Graduate	0	7(4)	7(3.5)
Higher Degree	0	3(1.5)	3(1.5)
Domicile			
Urban	15 (60)	116 (66.3)	131 (65.5)
Rural	10 (40)	59 (33.7)	69 (34.5)
Religion			
Hindu	19 (76)	151 (86.3)	170 (85)
Muslim	6 (24)	22 (12.6)	28 (14)
Others	0	2 (1.1)	2 (1)
Family			
Joint	12 (48)	88 (50.3)	100 (50)
Nuclear	13 (52)	87 (49.7)	100 (50)
Monthly income			
< 1000	0	2 (1.1)	2 (1)
1000-2000	4 (16)	48 (27.5)	52 (26)
2000-3000	14 (56)	56 (32)	70 (35)
> 3000	7 (28)	69 (39.4)	76 (38)
Employment			
Unemployed	22(88)	157(89.7)	179 (89.5)
Employed	3(12)	18(10.3)	21 (10.5)

The prevalence of postpartum depression was 12.5% (25/200) through a structured clinical interview which included DSM-IV diagnostic criteria of depression. The women in their first postpartum year were interviewed. 157 (78.5%) women interviewed were within their first 6 months postpartum period, of which 19 were found, depressed. From remaining 43 (21.5%) women interviewed, 6 were found depressed. Past history of depression was present in 2 cases, of which 1 was depressed during interview and the other was not and the family history of depression was present in only 4 cases, of which 2were depressed during interview and 2 were not.

The results of the logistic regression analysis gives the independent effect of the parameters on the outcome i.e. depression. (Table 2)

The odds of multi gravida getting depression are seen to be 5.391 times higher than the primigravida. If there is any previous history of miscarriage, the odds that such a female gets depressed is 4.613 times higher than a female without any miscarriage.

If a woman is tense during her pregnancy, she has 11.716 times higher odds of getting depressed than the non tense women.

The poor relationship with mother although significant at univariate level, was not observed to be a significant contributor for developing PPD in the logistic model after removing the effects of the confounders. It could be because the females having bad relation with mother were observed to have warm relations with the partner and also they could confide in the partner very well. The relationship with the partner and whether the woman could confide in her partner were highly associated variables, hence only one of them i.e. can the woman confide in her partner was taken in the model finally. The women who could not confide in their partners were observed to be having odds 10.43 times higher of having PPD than those who could confide.

The females who had a girl child are seen to have 5.487 times higher odds of getting depression than those having boy child.

If a female does not have anyone, other than her mother and husband to confide in, the female has 8.909 times higher odds of getting depression as compared to a female who has someone else to confide in.

DISCUSSION

All the women in this study were recruited while attending the well baby clinic when they had come for vaccination of their child. They were not aware about their mental health status. Majority of women (78.5%) were within their first 6 months of postpartum period.

In this study we found that the prevalence rate of depression was 12.5% through a structured clinical interview which included DSM-IV TR diagnostic criteria. O' Hara and Swain [1996] did meta-analysis of 59 studies and estimated that the average prevalence rate of post natal depression was 13% [2].

Risk factors:

Predictive index for postnatal depression was applied to identify predictors of postpartum depression which is already validated tool that could be used in research and clinical practice [11]. After doing logistic regression analysis strongest predictors identified were pregnancy related factors like multigravida, history of miscarriage, feeling tense during pregnancy, having girl child ,women not able to confide in their partner and , absence of person other than mother and partner who can be confided in.

Table: 2 Predictive index factors associated with post partum depression

Variable	Depressed	Not depressed	Crude OR (95% CI)	Adjusted OR (95% CI)	P value (adj OR)
Is it the first pregnancy?					
yes	5	69	1	1	
no	20	106	2.6(0.89-9.26)	5.391(1.17-24.85)	0.031
Any previous miscarriage					
no	14	153	1	1	
yes	11	22	5.46(1.96-4.74)	4.613(1.30-16.38)	0.018
Feeling tense during pregnancy					
no	14	160	1	1	
yes	11	15	8.38(2.86-23.83)	11.716(2.73-50.29)	0.008
Sex of the child					
male	8	110	1	1	
female	17	65	3.6(1.37-10.13)	5.487(1.56-19.26)	0.008
Anyone apart from mother and partner who can be confided in					
yes	4	89	1	1	
no	21	86	5.43(1.72-22.50)	8.909(1.87-42.47)	0.006
Can confide in partner					
yes	19	167	1	1	
no	6	8	6.59(1.87-7.84)	10.43(3.64-28.22)	0.015

The unadjusted OR(CI) were calculated using WinPepi software.

In this study if there is any previous history of miscarriage, the odds that such a female gets depressed is 4.613 times higher than a female without a miscarriage. This result was comparable to similar finding of the previous study by Playfair and Gower (1981) but no such association was noticed by Kumar and Robson (1984) [12].

The females who had a girl child are seen to have 5.487 times higher odds of getting depression than those having boy child. A similar finding was noted by Vikram Patel [3], M.Chandran [4]and R.J.S.Savarimuthu [8].

Culturally, in our male dominated Indian society, male children are preferred and this male-bias is deeply rooted. When a girl child is delivered, the mother may be subjected to antipathy, criticism and even hostility from her spouse and extended family, leading her to major depression. If the father is dissatisfied with the girl child, post natal depression is more likely to occur. Women who already had a girl child face greater stress because of social and family pressure to give birth to a male child and if the child is a girl again the risk of post partum depression is greater. Such gender bias and the limited control, a woman had over her reproductive health may make pregnancy a stressful experience for her and ultimately lead to post partum depression. This response is a cogent reminder that child birth is more than a biological event, and that the personal experience of child birth is deeply embodied in the socio-moral values of the local culture.

In this study feeling tense during pregnancy was also identified as predictor of post partum depression. If a female is tense during her pregnancy, she has 11.716 times higher odds of getting depressed. Beck [1, 7] Robertson [6] had reported a high level of anxiety during pregnancy as predictive of post partum depression.

Relationship related risk factors:

In this study, poor relationship with one's spouse / partner, absence of other person (except mother and partner) in whom they could confided were found to be significant predictors statistically. If the women could not confide in partner she has 10.43 times higher odds of getting depression compared to those who could confide.

Vikram Patel [3] and Beck [1, 7] had found that poor marital relationship preceded post partum depression.

If a female does not have anyone other than mother and husband to confide in, the female has 8.909 times higher odds of getting depression as compared to a female who has someone else to confide in. O'Hara et al (1983) and Paykel et al (1980) found that lack of an adequate confidant or lower level of social support from a confidant are associated with postpartum depression. [12]

Robertson [6] and Beck [1, 7] found that inadequate social support is linked to depression in mothers during pregnancy and post partum period.

84% of depressed women had no other person to confide in (except their mother or partner) compared with 48% of non depressed women. (Who confided in a friend / other family member). Thus relationship with one's mother / partner and the presence of another person with whom a woman could share their problems / worries were most important to a woman's emotional and mental well-being. A good emotional

support system in the form of one's mother, partner or friend may prevent women from falling pregnancy to post partum depression.

This study is limited by cross-sectional design, hospital based and small sample size including only Gujarati women not represents the general population.

CONCLUSION

This study found factors like multigravida, history of miscarriage, feeling tense during pregnancy, having girl child and relationship related factors like poor relation with partner in recent months, absence of person other than mother and partner who can be confided in, were significant predictors for postpartum depression. All of these potential risk factors can be ascertained during routine pregnancy care; therefore, it is important that antenatal healthcare providers and women themselves are educated about these risk factors so that early identification of high risk women for closer follow-up and intervention is possible.

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