Prevalence and determinants of postpartum psychiatric morbidity in mothers of eastern India.

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Type of Publication: Original Research Paper

Conflicts of Interest: Nil

Abstract

Introduction: Postpartum psychiatric health is important for wellbeing of mother- baby dyad. Postpartum blues are quite common but transient ailment. After one month other psychotic and non-psychotic morbidities becomes prominent, and was assessed in this study to understand the possible determinants of such morbidity.

Materials: A socio demographic and clinical questionnaire along with Bengali translation of SRQ (Self Reporting Questionnaire)-24 was given to 71 mothers in a tertiary care hospital in eastern India at 4 weeks review after their child birth.

Results & Analysis: 23.9% mothers had psychiatric morbidities. 12.9% mothers had psychotic symptoms. Though socio-demographic status came close to significance, only newborn health (p= 0.000), family type (p=0.006) and labour type (p=0.016) were significantly associated with psychiatric morbidity. Among that newborn health and family type can predict the occurrence, among those newborn health have significant contribution.

Conclusion: Care of newborn health is essential for maternal mental health also. Further studies with large sample will be needed.

Keyword: Determinants, Postpartum psychiatric disorder, Post-partum depression, Post-partum psychosis,

Introduction

Pregnancy is a journey of a woman towards motherhood. Though childbirth is a lifetime experience but it is also stressful. Stress precipitated several psychiatric illnesses, which may be preexisting or new, such as postpartum blues, postnatal depression and postpartum psychosis.(1) Half of the mothers experience some depressive symptoms in the first year of child birth (2).

Postpartum psychological health is more critical, especially in primiparous women. The transition to new motherhood has been found to be associated with emotional distress in up to 30% of women. It involves changes in the nature of relationships between couples as well as within families. Postpartum psychiatric disorders may include transient depressive symptoms (i.e., the "postpartum blues"), postpartum depression, postpartum psychosis, and postpartum anxiety (including new onset or

exacerbation of obsessive-compulsive disorders). Postpartum blues are the most commonly observed puerperal mood disturbance. Its symptoms arise within a few days of delivery, most probably on the third or fourth day and persist from few hours to over several days.(3) A meta-analysis and systematic review showed 22% prevalence of postpartum depression in Indian mothers.(4) A review observed, women with more children and those from lower socioeconomic groups had more risk of post-partum depression. They have also hypothesized underlying depression might be due to the problem in early childhood relationships, lack of current supportive relationship, marital difficulties, social adversity and life stress are among the most commonly cited precursors.(5) We conducted the study in a tertiary care hospital of Kolkata to know the outcome of pregnancy in terms of psychiatric morbidity, and attempted to find the socio demographic determinants of such outcomes.

Materials & Methods

Patients were recruited from gynecology department during their childbirth, initially a semi structured questionnaire is given. Then during one month follow up, Bengali validated version of a screening questionnaire for psychiatric morbidities SRQ -24 (6,7), was applied by a gynecologist, who was given a short training to apply and score the questionnaire. Regarding 20 items non-psychotic scale, six/seven was taken as a cutoff point. In four item psychotic scale, zero/one was considered as cut-off(8). Total 100 patients were approached, of which 92 consented and recruited in the study. 71 mothers could be followed up after one month for the screening questionnaire and included in analysis. A socio-demographic and clinical questionnaire was also filled up. Socioeconomic status was determined by monthly family income. Age, years of marriage, number of children are used as respective numerical values. Family type coded as

nuclear and joint. Nuclear family comprised of husband, wife and dependent children if existed, and joint family is designated if other family member also existed in the same household, sharing same kitchen. Delivery type can be vaginal or cesarean and labor can be term (37-42 weeks) and non-term (preterm (<37 weeks) or post-term (>42 weeks)). Health of the new born is labelled normal if 5 minute 'apgar' score is 7 or above. If less than that it's designated non normal.

Results & Analysis

Among the 71 mothers consented for the inclusion in the study, the socio-demographic and clinical characteristics of the group is depicted in the table 1.

Table 1: Socio-demographic characteristics of the group.

		Descriptive
Age		23.11 ± 4.221
Socioeconomic Status		2628.17 ± 1831.25
Years of marriage		2.99 ± 1.812
No of children	One	47 (66.2%)
	Two	22 (31.0%)
	Three	2 (2.8%)
Family type	Joint (n)	38(53.5%)
	Nuclear (n)	33(46.5%)
Delivery Type	Vaginal (n)	8 (11.3%)
	Cesarean (n)	63 (88.7%)
Sex of the Child	Male (n)	20 (28.2%)
	Female (n)	18 (25.4%)
	Missing Value	33 (46.5%)
Newborn Health	Healthy (n)	50 (70.4%)
	Not fully healthy (n)	17 (23.9%)
	Missing Values	4 (5.6%)
Labour Type	Term (n)	51 (71.8%)
	Non-Term (Pre + Post) (n)	11 (15.5%)
	Missing Value	9 (12.7%)
Education of the	Below Primary	18 (25.4 %)

Mothers	Below High School	51 (71.8 %)
	Completed High School	2 (2.8%)
Psychiatric Morbidity	Absent	54 (76.1%)

	Present	17 (**23.9 %**)
Non psychotic Morbidities	Absent	57 (80.3%)
	Present	14 (19.7%)
Psychotic Morbidities	Absent	62 (87.3%)
	Present	9 (12.7%)

Table 2: socio-demographic and clinical parameters and their relation with psychiatric morbidity

		Psychiatric Morbidities		Significance (p- Value)
		Absent (n=54)	Present (n=17)	
Age		23.15 ± 4.393	23.00 ± 3.742	t-test p= 0.901
Socioeconomic Status		2846.3±1976.5	1935.2±1029.5	*t-test p= 0.073*
Years of marriage		2.91 ± 1.735	3.26 ± 2.070	t-test p= 0.482
No of children		1.33 ± .476	1.47 ± .717	t-test p= 0.468
Family type	Joint (n)	24	14	*X^2 test p= 0.006*
	Nuclear (n)	30	3	
Delivery Type	Vaginal (n)	5	3	X^2 test p= 0.340
	Cesarean (n)	49	14	
Sex of the Child (Available n=38)	Male (n)	18	2	Exact test p= 0.653
	Female (n)	15	3	
New born Health (Available n= 67)	Healthy (n)	45	5	*X^2 test p= 0.000*
	Not fully healthy (n)	7	10	
Labour Type (n= 62)	Term (n)	41	5	*X^2 test p= 0.016*
	Non-Term (Pre + Post) (n)	10	6	
Education of the Mothers	Below Primary	13	5	Exact test p = 0.859
	Below High School	39	12	
	Completed High School	2	0	

As an exploratory exercise, 'forward stepwise' model based on log-likelihood is attempted with Socio-economic status, family type, new born health, labour type; as these were significant or close to being significant in individual tests of significance.

Model Summary: Final model after second step has Cox & Snell's R^2 0.334, Nagelkerke R^2 0.501. That showed the variables in the model reasonably contributes to predict the resultant variable, the psychiatric morbidity (in between 0 (no predictive ability) and 1 (predicts completely)). Results showed (Table 3) 'newborn's health' significantly predicts the psychiatric morbidity. Family type was also has significant contribution individually, hence it was included in the model, but in model its contribution is less. Other two predictors did not qualify to be included in the model with significance of contribution > 0.05) (Table4)

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
Ch_Health_Mod(1)	-3.292	.909	13.121	1	.000	.037	.006	.221
FAMILY type(1)	1.935	1.006	3.696	1	.055	6.922	.963	49.764
Constant	-.200	.950	.044	1	.833	.818		

Table 3: Variables in the Equation in Logistic regression test

		Score	df	Sig.
Variables	SEStatus	1.159	1	.282
	Labour_type(1)	2.209	1	.137
Overall Statistics		2.975	2	.226

Table 4: Variables not in the Equation in Logistic regression

Discussion

Frequency of psychiatric morbidity varies widely across different studies from India or abroad. It also varies with setting of study, instrument used, time of the assessment etc. One meta-analysis of Indian women showed post-partum morbidity to be 22%. When excluded the studies which assessed morbidity before 2 weeks and included post-partum blues, the pooled prevalence became 19% (4). Another study from south-west India that examined incidence by diagnostic schedule validation, found 44% incidence of psychiatric morbidity (9). Another study from Chennai found incidence of depressive disorder as 33.4% and psychotic disorder as 6.5% (1). One large scale global literature review observed incidence if psychiatric morbidity using self-report scales in developing country to range from 5.2% to 74%. Highest in Turkey and lowest in a study from Pakistan (10). Two study used non psychotic version of the same scale used in these study (though with a different cut off scores assessed at different time points). One study from Brazil showed prevalence at 12 months using 8 as the cut off score the incidence to be 27.9%.(11). Another study from Nepal observed the incidence to be lot

less at 3.1% with a cut off at 10, though in this study mothers were assessed at 4-8 weeks (12). Hence there was wide variations across the globe. This study showed that when assessed through a self-reporting screening questionnaire at one month postpartum, psychiatric morbidity of mothers found to be 23.9% including both psychotic and non-psychotic symptoms. Among those, psychotic symptoms were present in 12.9% mothers. Only non-psychotic symptoms comprises of 19.7%. These are close to other Indian studies, i.e. 15.3% to 23 % (13–15) and also that is found in a recent global meta-analysis (23.8%), though prevalence varies from 5% - 61% in the studies those are included in these meta-analysis (16).

Though, in some studies before, younger maternal age was significantly associated with more psychiatric morbidity (3,17), that was not in this study. Though some study observed primigravida as a risk factor for psychiatric morbidity (17), some study focused only on primiparous mothers (3), some other study (9) along the same line of this study showed no association with the order of birth with psychiatric morbidity. Though poor socio economic status was shown to be associated with psychiatric morbidity across studies (4,13–16,18), in this study socio economic status was not associated with psychiatric morbidities in mothers. Though a study from India had shown nuclear families to have higher (9.4%) psychiatric morbidities than joint families (1.2%) (1), this study had shown on the contrary. According to this study, Joint families had significantly (p = 0.006) higher incidence of psychiatric morbidities (36.84% as opposed to 9.09%). It can be secondary to other family factors like interpersonal relationship, spousal support, domestic violence etc. These were proven to be determinants in lot of other studies, but were not assessed in this study.(4,10,13–16). Maternal education was not a determinant of psychiatric morbidity

in this study in line with another Indian study (9)though a study from Pakistan observed on the contrary.(17)

Among obstetric parameters, Mode of delivery was inconclusive across the studies all over the world (10). Though some study showed cesarean section to more associated with psychiatric issues (19,20), one study from India had shown that forceps delivery resulted in more psychiatric morbidity (3), this study in line of some other studies (21) failed to show any such associations. Sex of the baby had a mixed finding across the studies in world (10). Though some Indian studies (3,4,13–15)had shown female babies are associated with more psychiatric morbidity, this study in line with some other Indian studies(1,9) observed no association of psychiatric morbidities with female sex.

Though some Indian studies observed type and term of the labour was not associated with psychiatric morbidities of mothers (1,9), this study along with some global studies (22) observed non-term deliveries were significantly (p = 0.016) associated more with psychiatric morbidity. Not fully healthy babies (apgar at 5 minutes <7) were widely associated with psychiatric morbidities across studies (10,16,22–25). This study also observed the same very strongly (p=0.000).

Newborn's health is the strongest predictor if all the significant or near significant predictors put into a data model to predict psychiatric morbidity of mothers. Joint family is another contributing predictor in the model. Labor type, though significantly associated, could not predict the occurrence of psychiatric morbidity, in a valid model.

Conclusion

Newborn's health (child factor), family type (demographic factor) and labor type (obstetric factor) also were associated with psychiatric morbidities. Hence both mother and baby care is essential for optimal result of a

delivery. Newborn care is beneficial for maternal wellbeing also. Post natal psychiatric issues were quite common in India. We need further studies with large sample, more manpower to infer more confidently about this problem. Longitudinal follow up of psychiatric morbidity patients were essential in psychiatric department, which can be taken up as a future study.

Conflicts of Interest: None

Source of Funding: None

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