Study of postpartum depression and association with obstetrics risk factors

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Abstract

Aim and Objectives: To know the prevalence of postpartum depression by Edinburgh postnatal depression scale and evaluate the obstetrics risk factors which predisposing to postpartum depression.

Material and Methods: The present prospective observation study was conducted in the Department of Obstetrics and Gynaecology, Netaji Subhash Chandra Bose Medical College, Jabalpur from1st March 2015 to 31st August 2016. Participants were screened for postpartum depression using EPDS. Various obstetrics risk factors were also completed by all the subjects. Main outcome measure: prevalence of a score of 13 or higher, on the EPDS. The data of the present study was recorded into computer and after proper validation, error checking, coding and decoding, the data was compiled and analysed using the SPSS window, appropriate univariate and bivariate analysis were carried out using the Chi-square test and odd ratio for categorical variables.

Result and Conclusion: The present study concludes that the prevalence of postpartum depression is 12.8 % (64/500) amongst postpartum women admitted of Obstetrics unit of N.S.C.B. Medical College, Jabalpur. (M. P.) The prevalence of an EPDS score ≥13 (which is suggestive of PPD) was found in a significant proportion of women, screening for PPD is indicated in all postpartum subjects to identify and promptly treat these women. Identification of a clear association between obstetric risk factors and PPD will lead to a prompt diagnosis of PPD.

Keywords: Postpartum depression (PPD), Edinburgh postnatal depression scale (EPDS).

Introduction

Post partum depression has been defined by the World Health Organization (WHO) as "a special state of mental health disorder and a variant of depression".[1] According to American Psychological Association (APA) " PPD is a serious mental health problem characterized by a prolonged period of emotional disturbance, occurring at a time of major life change and increased responsibilities in the care of the newborn".[2] postpartum depression onset symptoms occure from delivery of newborn to 12 months after delivery.[3] The prevalence of postpartum depression, worldwide varies from 0.5% to 60.8% in the first 12 months of delivery using self-reported questionnaire.[4] Edinburgh Postnatal Depression Scale [EPDS] is one of the most successful screening tools for PPD developed by Kendell et al in Edinburgh Scotland which is the result of the first major research on PPD over 30 years ago.[5,6] A review of 37 validation studies of the Edinburgh Postnatal Depression Scale had shown a highly variable sensitivity from 34 to 100% and a specificity of 44 to 100%.[7] An EPDS score of ≥13 is strongly suggestive of PPD. If postpartum depression is to be prevented by clinical or public health intervention, its risk factors need to be reliably identified.[8-11] Postpartum depression is clinically identified by various symptoms like tearfulness, despondency, emotional liability, feelings of guilt, loss of appetite, and sleep disturbances as well as feelings of being inadequate and unable to cope with the infant, poor concentration and memory, fatigue and irritability.[12]

Inclusion Criteria:

1. All women admitted in postnatal wards of Obstetrics unit of N.S.C.B. Medical College, Jabalpur.(M.P.)
2. Subjects who consented to participate in the study.

Exclusion Criteria:

1. Unconscious subjects who do not regain their consciousness.

Materials and Methods

The present observational study was conducted in Department of Obstetrics and Gynecology NSCB Medical College & Hospital, Jabalpur (M.P.) from 1st March 2015 to 31st Aug. 2016**.** Sample size was calculated by fallowing formula: -n = [DEFF*No (1-p)]/ [$(d^2/Z^2_{1-\alpha/2}$*(N-1) +p*(1-p)]

Where Z= 1.96 for 99% confidence interval, N = population size (5000), p=assumed probability (prevalence), d= marginal absolute error=5% DEFF (designed effect for cluster survey) =1

500 subjects were selected after a simple random sampling technique and informed consent for participation was taken. All the subjects were explained about the PPD and importance of scoring done by pretested structured questionnaires (EPDS) for the screening of PPD and its future consequences. An informed consent was obtained from all eligible subjects. A detailed assessment was done and pretested structured questionnaires (EPDS) were filled, which include obstetric history of every subjects. EPDS is the screening tool for postpartum depression; 10-items self-report scale specifically designs for screening of

postpartum depression in community samples. Each item is scored on a 4-point scale (from 0 - 3), with a total score ranging from 0 to 30. The items, written in the past tense, include questions related to maternal feelings during the past 7 days.[6]

Questions 1, 2, & 4 (without an*)

Are scored 0, 1, 2 or 3 with top box scored as 0 and the bottom box scored as 3.

Questions 3, 5-10(marked with an*)

Are reverse scored, with the top box scored as a 3 and the bottom box scored as 0.

Maximum score: 30

Subjects who score above 13 are likely to be suffering from a postpartum depression of varying severity.

Statistical Analysis: Data were entered in MS Office. The prevalence of PPD was estimated. Chi square test and ODDS ratio was calculated for each qualitative variable to evaluate the significance of association of risk factor with PPD. The relative risk for each statistically significant risk factor was calculated. P value <0.05 were considered statistically significant.

Results

Out of the 500 women studied 64 subjects score ≥13 on the Edinburgh postnatal depression scale. Prevalence of PPD is 12.8%. A total of 500 women were recruited in the study by simple random sampling technique. The obstetric history of subjects are shown in Table 1.

Table 1: Relation of obstetrics risk factors to EPDS

	EPDS≥13	EPDS<13	χ^2	Odd ratio	P value
Duration of marital life					
<5year	28	294	9.23	3.40	<0.001
≥5 year	36	142		(5.89-1.98)	
Gravida					
Primi Gravida	45	377	11.06	0.37	<0.005
Multi Gravida	19	59		(0.67-0.20)	
Parity					
Para 2 and below	56	328	4.72	0.43	<0.05
Multi para	08	108			
Live issue					
1	33	303	8.14	2.14	<0.01
<2	31	133		(3.77-1.21)	
Still birth					
No	47	421	49.808	10.18	<0.001
Yes	17	15		(22.28-4.43)	
Abortion					
No	58	380	11.96		<0.05
1	01	46			
2	01	4			
3	01	1			
4	03	5			
Mode of delivery					<0.01
NVD	33	308	9.37	2.26	
LSCS	31	128		(3.98-1.28)	
Gender of baby					
Male	22	230	7.54	2.13	<0.05
Female	42	206		(3.88-1.28)	

In present study prevalence of PPD 8.7% amongst the subjects who had duration of marital life <5years (total n=322) and 20.2% amongst the subjects who had duration of marital life more than 5 years (n=178). Prevalence of PPD was found more in subjects who had above 5 years. (p<0.001) Out of total, 84.5% (n=422) subjects were primi gravida, of which 10.6% (n=45) subjects were observed with PPD. 78 subjects were multigravida, of which 24.35% subjects were observed with PPD. Majority of subjects 76.8 % (n=384) were Para 2 and below, of which 14.5% of subjects were observed with postpartum depression. 116 subjects were multipara, of which only 6.8 % of subjects were observed with postpartum depression. This was statistically significant (p<0.05). PPD were observed in both the verge of divided group that subjects who had one live issues 9.8% (n=336) and 22.5% in subjects with more than 1 live issues were observed with

postpartum depression. This is probably because of social stigma and compulsion for any women to have children after marriage made them anxious and depressed and on the other verge women who had more children having increased burden of responsibilities. This was statistically significant (p<0.05). Subjects who had still birth have 10.18 times more chances of developing PPD which is statically highly significant. (p<0.001) Prevalence of PPD was highest 40% amongst subjects had 3 or more abortion. (n=10) Association of postpartum depression with multiple abortions was strongly found. This was statistically significant. (p<0.05) The prevalence of PPD 9.7% amongst the subjects who delivered NVD (n=341) while it is 19.5% amongst the subjects who underwent caesarean section. Subjects who underwent LSCS had 2.26 times more chances of having PPD. (p<0.01) indicate the comparison between subjects who delivered NVD and who underwent LSCS. This was statistically significant. The prevalence of PPD 8.7% amongst subjects who had male child total (n=252) and 16.9% amongst subjects who had female child (n=248). The male to female ratio was similar but the association of depression was strongly seen in favour of birth of female child which indicate that inspite of various mass publicity of survival of female child the depression is highly prevalent amongst this category. The difference was statistically significant [p<0.05] prevalence of PPD amongst subjects exclusively breast feeding is significantly lower than those who fail to initiate breast feeding of their babies. (p<0.001) In our study 160 subjects who had history of complications during delivery like (anemia, pre-eclamcia and eclamcia) out of which 24(15%) subjects were observed with postpartum depression. Risk of development of PPD statistically was not significant associated with subjects had history of complication during delivery. (p 0.143)

Discussion

In the present study 500 subjects were selected by a simple randomization table, 64 (12.8%) had postpartum depression. A similar study by Desai N et al (2012) reported prevalence of PPD 12.5%.[13] Gupta Swapan et al (2013) in their study "PPD in north Indian women: prevalence and risk factors" reported the prevalence of PPD was 15.8%.[14]

Association of Duration Marital life with PPD: In present study prevalence of PPD 8.7% amongst the subjects who had duration of marital life <5years (total n=322) and 20.2% amongst the subjects who had duration of marital life more than 5 years (n=178). Prevalence of PPD found more in subjects who had duration above 5 years. Because with each passing year of marriage, increase burden of responsibility of children and their family members predisposed to PPD. Statistically this was significant. [p<0.001] Shivali Siddharudha et al (2015) in their study "Postnatal Depression among Rural Women in South India" reported the prevalence of PPD found more in who had duration more than 1 year.[15]

Association of Gravida with PPD: Out of total, 84.5% (n=422) subjects were primi gravida, of which 10.6% (n=45) subjects were observed with PPD. 78 subjects were multigravida, of which 24.35% subjects were observed with PPD and odd ratio was 0.37. A study by Desai N et al (2012) reported the (OR= 5.391) multi gravida have 5.391 times more chances of developing PPD than the primigravida.[13] Gupta Swapan et al (2013) also observed similar finding(OR=4.60).[14]

Association of parity with PPD: Majority of subjects 76.8 % (n=384) were Para 2 and below, of which 14.5% of subjects were observed with postpartum depression. 116 subjects were multipara, of which only 6.8 % of subjects were observed with postpartum depression. This was statistically significant (p<0.05). This was probably because in subjects going through first pregnancy and child birth, anxiety and fear is more; this was further added on by previous bad obstetric experience. This can be prevented by easy access to quality health care and good antenatal support and counseling. Conversely, Gupta Swapan et al (2013)[14] al in their study found depression was significantly associated with having more than two children and expectation to deliver a male child. Shivali Siddharudha et al (2015)[15] also observed same finding as Gupta Swapan et al.

Association of Live birth with PPD: PPD were observed in both the verge of divided group that subjects who had one live issues 9.8% (n=336) and 22.5% in subjects with more than 1 live issues were observed with postpartum depression. This is probably because of social stigma and compulsion for any women to have children after marriage made them anxious and depressed and on the other verge women who had more children having increased burden of responsibilities. This was statistically significant (p<0.05).

Association of still birth with PPD: Subjects who had still birth have 10.18 times more chances of developing PPD which is statically highly significant. (p<0.001) Carol J.R. Hogue, et al (2006-2008) reported that the depression was more likely in women with stillbirth (14.8%) vs. healthy live birth (8.3%), OR 1.90 [95% CI 1.20, 3.02]).[16]

Association of number of abortion with PPD: In the present study prevalence of PPD increased as the number of abortions increased. Positive association of PPD was found with multiple abortions which was statistically significant (p<0.05). Desai N et al (2012) concluded in their study that a mother who had multiple abortions had 4.613 times higher risk of depression than a mother without any abortion.[13]

Association of mode of delivery with PPD: Present study reveals that subjects who underwent LSCS had 2.26 times more chances of having PPD. This was statistically significant (p<0.01). Boyce, et al (1992)

also found a significant correlation between caesarean section and developing postpartum depression at 3months.[17] they reported that women who had an emergency caesarean section had more than six times the risk of developing postpartum depression. Shivali Siddharudha et al (2015)[15] also observed highly association between caesarean section and PPD.

Association of sex of baby with PPD: In present study, the prevalence of PPD is 2.1 times higher amongst subjects who had given birth to a female child in present pregnancy. This strong association of depression of birth of female child with PPD (OR =2.13)may indicate that in spite of all efforts to sensitize the public towards a more gracious welcome to the birth of a girl child, a daughter is still considered a burden and her birth may not be always welcome. A study by Desai N et al (2012) found that subjects who had a female child had 5.487 times higher chances of getting depression than those having male child.[13] Gupta Swapan et al (2013) also observed similar finding.[14]

Association of breast feeding with PPD: The prevalence of PPD amongst subjects exclusively breast feeding was significantly lower than those who fail to initiate breast feeding to their babies ($p<0.001$). Breast feeding gives a sense of satisfaction and completeness and also helps to better deal with the hormonal changes occurring after delivery of baby. A study by Misri and colleagues (1997) observed a positive association between patients with PPD and cessation of breastfeeding.[18] Fergerson and coauthors[19] reported that a failed attempt of breastfeeding or early cessation of breastfeeding was found to be significantly associated with postpartum depression.[19]

Association of complication during pregnancy with PPD: In the present study, significant association of postpartum depression with obstetrics complication like anemia, severe pre-eclampsia, eclampsia, still birth was found. O'Hara and Swain (1996) concluded that complication during pregnancy (pre-eclampsia, eclampsia anemia) had a small effect [0.26] on the development of postpartum depression.[20] Josefsson et al. [2002] reported a significant association between pregnancy complications and depression.[21]

Conclusion

1. The prevalence of postpartum depression amongst postnatal women admitted of Obstetrics unit of N.S.C.B. Medical College, Jabalpur. (M.P.) at 12.8%.
2. Every antenatal clinic must have a separate section for counselling.
3. The postnatal period during which the just delivered mothers are at obstetrics risk of developing PPD must be well covered by social workers to aid early identification of women likely to develop PPD. It is also important to address the stigma associated with psychiatric disorders.

Recommendations

The findings of present study will be shared with all members of Obstetric Unit, Psychiatry Department and as well as all other related faculty of Medical College Hospital, Jabalpur to create awareness of the magnitude of psychiatric disorders in expectant and delivered mothers. I advocate, on the basis of my findings-

1. Routine screening of postnatal mothers especially those with obstetrics risk factors.
2. Formulating policies and integrating mental and reproductive health.

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