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Prevalence of Post-Partum Depression and Factors Associated in a Tertiary Care Centre: A Cross Sectional Study

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ABSTRACT

Background: Post-partum depression is a non-psychotic depressive disorder of which the onset is in puerperium. The disease is a significant public health problem, yet underrecognized and undertreated in our society. If left untreated, up to 25 % of affected women will be depressed one year later. Children of affected mothers can have nutritional, behavioral and developmental disability later on.

Material and Methods: This cross-sectional study was conducted in a tertiary care hospital from Dec 19 to June 21. Patients who underwent delivery at this centre and visited the hospital for medical checkup, to seek contraception advice and vaccination to the new born between 4-6 weeks in the post-partum period were interviewed. They were given translated Hindi version of Edinburgh Post-Partum Depression Scale (EPDS) and a pre-designed questionnaire regarding their socio-demographic, obstetrical and psycho-social factors. The collected data was entered in a spreadsheet and analyzed by SPPS version 20 software. Identifying of the factors and its association with post-partum depression was done by bivariate and multivariate logistic regression analysis. Each independent variable was subjected to bivariate analysis and Crude odd ratio (COR) was calculated. The variables with P-value <0.05 were subjected to Multivariate analysis and Adjusted odd ratio (AOR) was calculated.

Results: A total of 348 mothers were included in the study. An EPDS score >13 was taken as risk factor for PPD. The prevalence of post-partum depression is found to be 12.93% (OR1.79, 95%CI=9.41, 16.46). The factors associated with PPD were multiparity, poor obstetrical outcome, Abortions prior to this pregnancy, post-partum blues, undesired sex of the baby, lack of social support, recent loss of family member, stressful life in puerperium and chronic disease in previous child on multivariate analysis.

Conclusion: Post-partum depression is a significant but neglected part of maternal health in our country. The disease can be easily be diagnosed by EPDS score which is very much cost effective. An early treatment can save both mother and baby from its disastrous consequences. The health care providers should be well aware of the condition and factors

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associated with it and special attention should be given if any of the risk factor is found during screening. All efforts should be made for its early recognition by screening of the mothers attending health care centers in the post-partum period.

Keywords: Post-partum depression (PPD), Edinburgh Post-partum depression scale (EPDS), Prevalence, Risk factors.

INTRODUCTION

Puerperium is a stressful time and it could provoke mental illness. This mental illness represents onset of a new disorder in majority of the cases or it may be a recurrence of preexisting psychiatric disorder. Post partum depression is one of the non psychotic depressive disorder of which onset is in puerperium. Symptoms mostly begin as early as one week in the post partum period or sometimes extend beyond this period till a year post delivery.[1]

According to WHO depression is a leading cause of disease burden in reproductive age group in both developing and developed nations.[2]. The global prevalence of post partum depression ranges between 4-63.9%.[3] Postpartum depression whether major or minor develops in 10-20 % of parturient in the western world. However the prevalence is higher in the developing nation particularly in low/middle income country.[4] The prevalence in African continent ranges between 6.6-50.4 %.[5] and in China it ranges between11-14% in.[6] Various studies done in our country shows the prevalence ranging from 11- 45%.[7, 8, 9, 10]

Post partum psychological disorder can be classified into three categories: Post partum blues, postpartum depression and postpartum psychosis. Postpartum blue is a transient depressive illness characterized by bouts of sadness, crying, anxiety, forgetfulness and irritation. It is self limiting and usually remits within 10 days.[11] Postpartum depression is a more protracted disorder. The causes are multifactorial with stress of recent delivery, rapid changes in the body systems and responsibility of child rearing being the predominant ones. Multiple studies have shown the association between factors as young maternal age, unmarried status, substance abuse, infertility issues before conception, abortions, nausea and vomiting of pregnancy, preterm birth, mode of delivery, poor neonatal outcome, and stressful life in puerperium with postpartum depression. Many social factors as lack of social support, undesired sex of baby, emotional and physical violence, loss of near and dear one, chronic illness in husband and previously diseased baby.[7,8,9,10,12,13] Patients usually report feeling of worthlessness and marked diminished interest in all activities of the day. It is also associated with pessimism, fatigue, insomnia or excessive sleeping, loss of libido and negative feeling towards the infant.[14] The Corona virus disease is stressful in pregnancy and can affect the mental health of parturient. Fear regarding a new disease and what could happen next, can be overwhelming and can cause strong emotions in pregnant patients. Public health actions such as social distancing can make people feel isolated and lonely and can increase their stress and anxiety. Beside this, it can be more stressful to be separated from near and dear ones in case they got infected or exposed to COVID 19 infected people.[15]

Postpartum depression is generally underrecognized and undertreated. Major depression during pregnancy or after delivery can have devastating consequences for affected women, their children and families. If left untreated up to 25 % of women with postpartum depression will be depressed one year later. It will give rise to increased incidence of suicide which is more frequent in women with mental illness. Maternal depression after delivery can lead to insecure attachment and later behavioral problems in the child.[16]

Several screening tools are available and have been validated for use during pregnancy and the puerperium. One of the most popular and widely used screening tools used for detection of postpartum depression is the Edinburgh Postnatal Depression Scale (EPDS)

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originally designed by Cox et al in 1987. It has 10 questionnaire and each answer is given a score of 0 to 3 with a maximum score is 30.[17]
The index study aimed to screen the pregnant patients after delivery and to determine the prevalence of post partum depression by using EPDS score and to identify the risk factors associated with this condition.

MATERIAL & METHODS

The Study Design, Area and Duration

This cross sectional study was conducted at department of obstetrics & gynecology in a tertiary care centre of Pune. The study duration was from Dec 19 to June 21.

Population

Source Population: All antenatal patients who underwent delivery at this centre and discharged subsequently. At the time of discharged they were advised to visit at well women clinic along with their babies between 04-06 weeks for gynecological checkup, contraception advice and vaccination services.
Study Population: All antenatal patients who underwent delivery at this centre and reported between 04-06 weeks in the well women clinic for follow up.

Eligibility

Inclusion Criteria: All antenatal patients who underwent vaginal/caesarean delivery at our centre and reported for follow and were willing to participate were included in the study.
Exclusion Criteria: Patients who were unwilling to participate in the study and having difficulties to comprehend the questionnaire of the study were excluded from the study. Women who were on psychiatric medication during pregnancy were also excluded.

Data Collection Procedure

The data collection team consists of intern doctor, family wing matron and nursing staff. All mothers reporting to well women clinic were attended by the doctors and during the visit they were sounded regarding the study and motivated to participate. The data collector team then disclosed them the purpose and benefits of study and encouraged them to participate. After obtaining consent from the participants they were taken to a separate room and were given two subsets of questionnaire. The first subset of questionnaire was translated version of EPDS and second subset included obstetrical and associated and psycho-social factors. Once the participants completed the questionnaires, it was checked by the data collectors regarding the completeness and put in a sealed envelope and given back to the researcher.

Data Quality Control

The data collection team was given proper training regarding the techniques and soft skills. The questionnaires were checked for their language clarity, font size and necessary amendments were done. The researchers also checked the completeness of the data and also visited the data collection room from time to time.

Study Variables

Outcome Variable: The main outcome was to find out the prevalence of postpartum depression in our study. It was done by using Edinburgh Post-partum Depression Scale (EPDS). Validation of Hindi version of EPDS scale for screening of cases of postpartum depression is done in 2020 in India.[18] A translated Hindi version of EPDS score was used for our study. We have used an EPDS cut-off value of 13 or higher to detect postpartum depression as used by multiple studies.[7, 8, 9, 10]
Independent Variable: The following independent variables were included in the study.

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Socio-Demographic Factors: The factors included were maternal age, parity, education status, occupation and type of family.

Obstetrical and Associated Factors

The obstetrical factors in the study were nausea and vomiting in pregnancy, Covid infection in pregnancy, mode of delivery, obstetrical outcome in terms of healthy/sick baby and H/O post partum blue in post partum period. Neonates who were admitted in the NICU and remained there for 72 hrs and more were considered as sick baby. The associated factors were infertility issues and H/O abortions prior to this pregnancy.

Psychosocial Factors

A thorough search of literature was done for psycho-social factors of postpartum depression in Indian scenario. The factors analyzed were COVID infection in family members, attitude of nursing staff after delivery, stressful life in puerperium, undesired sex of baby, social support, family conflict, recent loss of family member and chronic disease in previous child.

Sample Size Calculation

The sample size was calculated by using the single proportion population Sample size = Z2 ×P× (1-P) /e2. The prevalence was taken as 25% (P=0.25), Z=1.96 for 95 CI with margin of error 5% (e=0.05). The requisite sample calculated was 288 and assuming a non response rate of 10%, it was calculated and found to be 317. We analyzed a sample of 348 for this study.

Statistical Analysis

The collected data was entered in an excel spreadsheet and analyzed by SPSS version 20 software. The variables were presented as frequency and percentage in a tabular form. Each independent variable was subjected to binary logistic regression analysis and Crude odd ratio (COR) was calculated. The variables with P-value <0.05 during bivariate analysis were subjected to multivariate analysis and this was presented as Adjusted odd ratio (AOR). A P-value <0.05 was used as statistical significance.

Ethical Considerations

An approval of the study was taken by Institutional Ethical committee (IEC/2020/54). A written informed consent was obtained from all mothers before handing over them the questionnaires and Hindi version of EPDS Performa.

RESULTS

Socio-demographic profile of study subjects and their association with postpartum depression:

A total of 348 participants were included in the study. Majority were in the age group of 25-30 yrs (147,42.2%) followed by 20-25yrs (132,37.9%) with education status of 12 std in maximum (245, 70.4%). Most of the study participants were housewife (341, 98%) as compared to working (07, 2%), staying in nuclear family (323, 92.8%) as compared to joint family (25, 7.2%) (Table1).

Table 1: Socio - demographic profile of study subjects

Variables	Frequency	Percentage
Maternal age (yrs)		
a) ≤ 20	09	2.6
b) 20 - 25	132	37.9
c) 25 - 30	147	42.2

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d) 30 - 35	53	15.2
e) > 35	07	2.0
Education		
a) 10th Std and below	53	15.2
b) 12th Std	245	70.4
c) Graduate	48	13.8
d) Post graduate	02	0.6
Occupation		
a) Working	07	2.0
b) Housewife	341	98.0
Type of family		
a) Joint	25	7.2
b) Nuclear	323	92.8

There is no statistically significant difference between the various variables of socio-demographic factors with respect to EPDS score of >13 and ≤ 13 (Table 2).

Table 2: Distribution of patients with and with postpartum depression in relation to socio-demographic factors

Variables	>13	≤ 13	Total	P-value
Maternal age (yrs)				
a) ≤ 20	0	09	09	
b) 20 - 25	13	119	132	
c) 25 - 30	18	129	147	0.075
d) 30 - 35	12	53	53	
e) > 35	02	05	07	
Parity				
a)1	15	167	182	
b)2	26	126	152	0.003
c)3	04	09	13	
d)4	0	01	01	
Education				
a)10th Std and below	16	37	53	
b)12th Std	24	221	245	
c)Graduate	05	43	48	0.004
d)Post graduate	0	02	02	
Occupation				
a)Working	01	06	07	0.999
b)Housewife	44	297	341	
Type of family				
a)Joint	03	22	25	0.999
b)Nuclear	42	281	323	

Prevalence of postpartum depression: An EPDS score of >13 were taken as screen positive for post partum depression. Out of 348 subjects, 45 (12.93%) had score of >13 and 303 (87.07%) had score of ≤ 13. The prevalence of post partum depression is 12.93 %, OR1.79, 95% CI (9.41, 16.46) (Table 3).

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Table 3: EPDS Score

EPDS score	Frequency	Percentage	OR	95% CI
> 13	45	12.9	1.79	9.41,16.46
≤ 13	303	87.1		

Obstetrical and associated factors of study subjects: A majority of study participants were Primigravida (182, 52.3%) as compared to multigravida (152, 43.7%). Parity status of 3 in 13 (3.7%) and 4 were in 01 (0.3%) of study participants. Out of 348 patients, 30 (8.6%) had infertility and conceived by ART techniques as compared to 318(91.4%) who conceived spontaneously. A total of 76 patients (21.8%) had history of abortions. Excessive nausea and vomiting had affected 108 (31%) as compared to 240 (69%) who had no such history. Corona virus 19 had infected 14 (4.0%) of patients in the antenatal period. The mode of delivery is vaginal in 182 (52.3%) and LSCS in 166(47.7%) of subjects. After delivery 271 (77.9%) neonates stayed with the mother during hospital stay. A total of 77 (22.1%) neonates were admitted in the NICU for delayed cry, meconeum aspiration, neonatal jaundice and other ailments. There was one neonatal death and remaining NICU admitted babies were discharged subsequently. Post partum blues had affected 62(17.8) mothers as compared to 286(82.2%) who were unaffected (Table 4).

Table 4: Obstetrical and associated factors

Variables	Frequency	Percentage
Parity		
a) 1	182	52.3
b) 2	152	43.7
c) 3	13	3.7
d) 4	01	0.3
Nausea & vomiting in pregnancy		
a) Yes	108	31.0
b) No	240	69.0
H/O Infertility		
a) Yes	30	8.6
b) No	318	91.4
H/O pregnancy loss		
a) Yes	76	21.8
b) No	272	78.2
H/O Covid infection in pregnancy		
a) Yes	14	4.0
b) No	334	96.0
Mode of delivery		
a) Vaginal	182	52.3
b) Caesarean	166	47.7
Obstetrical outcome		
a) Healthy baby	271	77.9
b) Sick baby	76	21.8
c) Death	01	0.3
H/O Post partum blues		

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a) Yes	62	17.8
b) No	286	82.2

Psycho-social factors of study subjects: Corona virus infection in close family member was in 60(17.2%) of study subjects. 334(96.0%) patients complained that the attitude of the nursing staff after delivery was helpful as compared to 14(4%) who said the opposite. A total of 109(31.3%) of patients had stressful life in puerperium. Lack of social support, family conflict and recent loss of near and dear one was present in 20(5.7%), 05(1.4%) and 07 (2.0%) of patients respectively. 24(6.9%) of subjects had accepted of having delivered undesired sex of the baby in the index pregnancy. Chronic illness of previous child for which continuous hospital visit was required was in 08(2.3%) of subjects (Table 5).

Table 5: Psychosocial factors

Variables	Frequency	Percentage
Covid infection in family member		
a) Yes	60	17.2
b) No	288	82.8
Attitude of nursing staff in puerperium		
a) Helpful	334	96.0
b) Non helpful	14	4.0
Stressful life in puerperium		
a) Yes	109	31.3
b) No	239	68.7
Undesired sex of baby		
a) Yes	24	6.9
b) No	324	93.1
Social support		
a) Yes	328	94.3
b) No	20	5.7
Family conflict		
a) Yes	05	1.4
b) No	343	98.6
Recent loss of family member		
a) Yes	07	2.0
b) No	341	98.0
Chronic illness in previous child		
a) Yes	08	2.3
b) No	340	97.7

Association of Obstetrical and associated and psycho-social factors with Post partum Depression: To find out the association between Post partum Depression and each independent variable we performed bivariate and multivariate analysis. A total of 13 independent variables were associated with post partum depression during bivariate analysis. The P-value and corrected crude ratio (COR) is shown in Table 6.

Table 6: Bivariate analysis of factors associated with post partum depression

Variables	P Value	SE	COR(95% CI)
Nausea & vomiting in pregnancy			

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a) Yes b) No	0.001	0.91	18.23(3.07,108.37) 1.00
H/O Infertility a)Yes b)No	<0.001	0.41	6.83(3.04,15.35) 1.00
H/O pregnancy loss a)Yes b)No	<0.001	0.35	11.17(5.58,22.38) 1.00
H/O Covid infection in pregnancy a)Yes b)No	0.005	0.57	5.67(1.87,17.21) 1.00
Mode of delivery a)Vaginal b)Caesarean	0.154	0.32	0.63(0.33,1.18) 1.00
Obstetrical outcome a) Healthy baby b) Sick baby c) Death	<0.001	0.38	15.70(7.52,32.78) 1.0
H/O Post partum blues a)Yes b)No	<0.001	0.64	198.10(56.41,695.63) 1.0
Covid infection in family member a)Yes b)No	<0.005	0.35	9.57(4.82,19.00) 1.0
Attitude of nursing staff in puerperium a) Helpful b) Non helpful	<0.001	0.79	54.73(11.74,255.16) 1.0
Stressful life in puerperium a)Yes b)No	<0.001	1.02	164.31(22.21,1215.63) 1.0
Undesired sex of baby a)Yes b)No	<0.001	0.47	20.34(8.02,51.59) 1.0
Social support a) Yes b) No	<0.001	0.48	10.57(4.09,27.32) 1.0
Family conflict a)Yes b)No	0.127	0.93	4.65(0.76,28.64) 1.0
Recent loss of family member a)Yes b)No	0.001	0.85	18.81(3.53,100.21) 1.0
Chronic illness in previous child a)Yes b)No	0.012	0.73	7.29(1.76,30.29) 1.0

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We performed multivariate analysis on the variables which had a significant association (P<0.05) during bivariate analysis. The result of multivariate analysis in terms of P-value and adjusted odd ratio (AOR) is in Table 7.

Table 7: Multivariate analysis of factors associated with post partum depression

Variables	SE	P-Value	AOR(95% CI)
Nausea & vomiting in pregnancy	1.260.	0.493	2.37(0.2,27.95)
H/O Infertility	1.58	0.054	21.14(0.95,469.86)
H/O pregnancy loss	1.08	0.002	27.19(3.25,227.35)
Covid infection in pregnancy	4.62	0.442	34.76(0.00,295965.98)
Covid infection in family	0.95	0.845	1.20(0.19,7.79)
Obstetrical outcome	1.23	0.036	13.27(1.19,148.52)
H/O Post partum blues	1.42	0.009	41.26(2.57,661.63)
Attitude of nursing staff in puerperium	1.55	0.223	6.64(0.32,139.78)
Stressful life in puerperium	2.63	0.023	386.96(2.25,66617.96)
Undesired sex of baby	1.45	0.025	26.19(1.52,452.24)
Social support	1.97	0.023	86.18(1.83,4059.09)
Recent loss of family member	2.07	0.019	125.49(2.18,7217.31)
Chronic illness in previous child	1.62	0.016	49.17(2.04,1185.87)

A total of 08 independent variables have significant association with post partum depression. These independent variables are obstetrical outcome in terms of healthy and sick baby, H/O abortions prior to this pregnancy, Postpartum blues, undesired sex of the baby, stressful life in puerperium, lack of social support, recent loss of family member and chronic disease in the previous child. It is clearly evident that NICU admission of the baby after delivery is associated with a risk of postpartum depression by 13 times (AOR-13.27, 95% CI=1.19, 148.52). Patients who had history of abortions and having postpartum blues and stressful life in puerperium are of increased risk of having postpartum depression by 27 times (AOR-27.19, 95% CI=3.25, 227.35), 41 times (AOR-41.26, 95%CI=2.57, 661.63) and 386 times (AOR-2.25, 95%CI=2.25, 66617.96) respectively. Lack of social support increases the risk of postpartum depression by 86 times (AOR-86.18, 95%CI=1.83, 4059.09). Patients who had chronic disease increases the risk of postpartum depression by 49 times (AOR-49.17, 95% CI=2.04, 1185.87). Recent loss of family member is associated with postpartum depression by 125 times (AOR-125.49, 95%CI=2.18, 7217.31). Patients who had disclosed the undesired sex of the baby had 26 times risk of postpartum depression (AOR-26.19, 95%CI=1.52, 452.24).

DISCUSSION

The current literature suggests that the prevalence of postpartum depression is high in low- and lower-middle-income countries. A systematic review done by Fischer et al in 2012 which included 47 studies in 18 low and middle income countries reported a prevalence of 18.6% (95% CI: 18.0, 19.2). A systematic review and meta-analysis done in India by Ravi et al in 2017 involving 20043 women across 31 studies from 2000 to 2016, shows the prevalence of

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postpartum depression as 22% (95% CI: 19, 25).[7] On the contrary, the prevalence of postpartum depression in the index study revealed to be 12.9% (OR 1.79, 95%CI 9.41, 16.46). This prevalence is lower as compared to other nations in south Asia as 29%in Nepal,[19] 22% in Bangladesh,[20] 29-63 % in Pakistan.[21] This prevalence rate is also lower as compared to 31.7% in South Africa,[22] 22.9% in Ethiopia,[23] 38.55 in Saudi Arabia.[24] However this prevalence rate is more as compared to developed nation as 8.46% in Canada,[25] 5.5% in Denmark[26] and 10.1 % in Norway.[27] Studies done in Uganda and Egypt had also reported a lesser prevalence rate of 6.1% and 7.14 % respectively.[28, 29]

Among the socio-demographic profile, post-partum depression was associated with high parity and low education status. It might be because older women have difficulty to cope up with the outcome of pregnancy as compared to young mothers. Studies done by Nielson Forman et al,[30] Ho-Yen et al[31] and Mayberry et al[32] shows association with multiparity and according to study done by Blackmore et al[33] primigravidas are more vulnerable to PPD. Studies done by Kosinska-Kaczynska et al[34] and Saldanha et al[35] reported that low education status is associated with PPD, similar to our study. Other variables such as age, occupation of the mother and nuclear/joint family has shown no relation with prevalence of postpartum depression.

Having a sick baby was observed to be a risk factor for post-partum depression. In our study 77 babies were taken to the NICU within 72 hrs of their birth and an EPDS score of ≥ 13 was present in 33 mothers. However majority of babies were send back to the mothers in next 72 hrs, still it possess a risk factor for post-partum depression (COR 15.7, 95%CI=7.52,32.78: AOR 13.27, 95%CI=1.19,148.52). The results were consistent with studies done by Kosinska-Kaczynska et al,[34] Ho-Yen et al[31] and Ghosh A.[8]

Post-partum blue which is a transient depressive illness is a precursor of post-partum depression as 20 % cases of them gets further depressed. In our study we found 62 mothers giving history of post-partum blue and positive screening of post-partum depression on EPDS score was present in 42 mothers. The association was significant (COR 198.1, 95%CI=56.41, 695.63: AOR 41.26, 95%CI=2.57, 661.63).[36]

Abortion is one of the commonest obstetrical complication which affects10–25% of pregnancies. The physical consequences of miscarriage have been researched extensively, but psychological sequelae less so. In our study we tried to find out the relation between abortions and the risk of post-partum depression in subsequent pregnancy. A total of 76 mothers had one or more abortions and positive score for depression (>13) was present in 30 as compare to 15 out of 272 mothers who do not have history of abortions. The association of abortions and onset of post-partum depression after subsequent successful pregnancy is significant in the study (COR 11.17, 95%CI=5.58, 22.38: AOR 27.19, 95%CI=3.25, 227.35). A recent study done in Switzerland has similar finding[37]

Our study shows no association with infertility with post-partum depression on multivariate analysis as similar to studies done by Aygul et al[38] and Lynch et al[39] showing no association. No association was also found between excessive nausea and vomiting and post-partum depression contrary to the study done by Helena et al in 2017.[40] which had shown a positive association. After first wave of COVID 19 pandemic, multiple studies have been done to find out the association between COVID 19 infection in pregnancy and development of post-partum depression subsequently. Most of the study do not show any increased depressive symptoms during and after pregnancy.[41, 42] Our study also shows no association with mother getting COVID 19 infection during pregnancy or in any family member as a risk factor with post-partum depression. Similarly mode of delivery is not associated with post-partum depression in our study unlikely the study done by Adewuya et al[43] and Bergant et al[44] who found that caesarean delivery is a risk factor for post-partum depression.

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Since the study had been done in a tertiary care centre of a military hospital where the clientele has access to the hospital round the clock and the treatment is completely free. Being in armed forces, the husband's job is secured and there is no difficulties to avail leave at any time to look after the family. In the absence of the husband during emergency, it is the responsibility of the unit to look after the pregnant lady till the arrival of the husband. Apart from this, a lot of other welfare activities are also being carried out at unit level. We had selected psycho-social factors for our study depending on this background. We analyzed multiple variables which are relevant to this scenario. The independent variables which had bearing on post-partum depression were undesired sex of baby (AOR 26.19, 95% CI 1.52, 452.24), lack of social support (AOR 86.18, 95% CI 1.83, 4059.09), stressful life in puerperium (AOR 386.96, 95% CI 2.25, 66617.96), Recent loss of family member (AOR 125.49, 95% CI 2.18, 7217.31) and chronic disease in previous child (AOR 49.17, 95% CI 2.04, 1185.87). Indian society is predominantly male dominant. In a family where the previous child is female, there is tremendous amount of social pressure particularly from the in-laws to deliver a male child in subsequent pregnancy. If a female child is delivered, it increases the risk factor for postpartum depression for the mother. This undesired sex of the baby along with lack of social support results in stressful life in puerperium. Multiple studies done in our country reports that undesired sex of baby, lack of social support and stressful life in puerperium is a risk factor for post-partum depression.[7, 36, 45, 46] Social support impacts the brain and the part of brain involved in supporting social cognition and regulation of emotion is the posterior lobe of right cerebellum (CPL). A recent study done by Cheng et al revealed that lack of social support affects the CPL which was measured by analysis of Functional Connectivity Strength (FCS) of brain.[47] Similar findings were observed from studies done in Ethiopia,[48] Saudi Arabia[49] and China[50] where undervaluing a girl child, lack of social support and stressful life is strongly associated with significant post-partum depression. Death of a family member is strongly associated with post-partum depression in our study as it affects the mental wellness of the parturient. Similar association was found in two studies in Ethiopia.[13, 51]

CONCLUSION

Post-partum depression is a significant yet neglected part of maternal health in developing nation. If left untreated up to 25 % of women with postpartum depression will be depressed one year later. It severely affects the children's behavior and causes developmental disability later on. This condition can be easily detected by screening of mother in post-partum period by EPDS score which is highly cost effective. In case the disease is detected, the treatment can be started early and both mother and baby can be saved from its disastrous consequences. The treating obstetrician and health care provider should be well aware of this condition and efforts should be made for regular screening of mothers in the post-partum period attending health care centers after delivery.

Limitations of the study

The study was conducted in a tertiary care centre of Armed Forces; hence the subjects may not be the representative of true population. There is a selection bias and because of this the prevalence is lesser then the other population based similar study of our country. The EPDS score is a screening test rather than a confirmatory test. A score of >13 was taken as a case of depression without further confirmation.

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