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Prevalence of Postnatal Depression and Its Risk Factors among Postnatal Women in Rural Area of Srikakulam District

Dhanalatha Tharigonda Reddy[1], Irfan Ali Syed[2], Dhananjaya Sharma[3], Satyajit Pattnaik[3], Jarina Begum[2], Samina Ausvi[2]

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Author's Affiliation:
[1]Pg student; [2]Associate Professor; [3]Professor, Dept. of Community Medicine, Great Eastern Medical School & Hospital, Srikakulam

Correspondence
Tharigonda Reddy Dhanalatha
drtrdhanalatha3@gmail.com

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ABSTRACT

Introduction: During postpartum period women are at high risk for developing episodes of depression. Postnatal depression (PND) is a major public health issue because of its adverse effects on the infant and entire family.

Objective: To find the prevalence of PND among postnatal(PN) women in Singupuram rural health training centre(RHTC) area, Srikakulam district, Andhra Pradesh and to find association between socio-demographic, obstetric and pregnancy outcomes and PND.

Method: Sampling Method- Non-probability convenient sampling. This cross-sectional study was carried out among PN women (4th-10th week) in Singupuram RHTC area, Srikakulam district during May to August 2019. Details were collected using a pre-tested semi-structured questionnaire pertaining to socio-demographic profile, obstetric and pregnancy outcomes along with an Edinburg Postnatal Depression Scale (EPDS) translated into local language (telugu) cut-off score of ≥13 was used as high risk of PND.

Result: The study included 229 PN women. Prevalence of PND was 28.3%. PND showed significant association ($p<0.05$) with type of family, working status of PN women, husbands occupation, socio-economic status, mode of delivery, gender of the newborn, and complications in pregnancy.

Conclusion: PND among rural PN women is 28.3%. Early stage of PND screening and diagnosis should be included as integral part of PN care.

Key words: Postnatal women, postnatal depression, rural area, risk factors.

INTRODUCTION

Postnatal depression (PND) describes non-psychotic depressive episodes, with loss of interest, insomnia and loss of energy experienced by mothers within the period of 4-6 weeks after delivery[1].

A depressed mother may not develop a positive and satisfying relationship with her infant to offset the stresses of newborn care and postpartum recovery and this may continue to effect children into toddler, the pre-school years and beyond[2]. Because of the potential for these serious consequences, mothers at risk of developing postnatal depression need to be identified early, preferably during pregnancy, or at the latest immediately after delivery[3].

Postnatal depression and its risk factors have been explored by many authors in Indian setting[4,5,6,7] , and found out this disorder is in alarmingly high number mostly in hidden state. So this study was conducted to identify the prevalence and distribution of this disorder, as the early diagnosis and

prompt treatment has a significant change in the outcome leading to a better quality of life for both mother and child.

HYPOTHESIS OF THE STUDY

Sociodemographic, obstetric and other factors like pregnancy outcome play a significant role in developing postnatal depression.

METHODS

This study is a community based study conducted in Singupuram rural health training centre area, Srikakulam district, Andhra Pradesh state, India from May to August 2019. The total population of Singupuram area is 8992. Majority of the population is involved in agriculture as occupation.

Community based cross-sectional study was done to achieve the study objective. In this study we took a sample size of 229 postnatal mothers based on the estimated prevalence of 31.4%(95% CI 22.7-41.4%) postnatal depression[8]. The sampling frame consists of all women from 4th -10th week of postnatal period from May to August 2019 belonging to Singupuram rural health training centre area, Srikakulam district. Non-probability convenient sampling method was used to study the subjects until sample size was attained.

All women from 4th -10th week of postnatal period from May to August 2019 were included in the study Women with acute severe illness or those not willing to give consent for voluntary participation were excluded from the study .

A pretested semi-structured questionnaire was used during scheduled interview to elicit information pertaining to socio-demographic profile, obstetric and pregnancy outcome.

Socio-demographic profile includes: age of the mother, religion, type of family, education status, economic status, working status of postnatal women, husbands occupation; **obstetric details:** duration of married life, pregnancy planning, parity, complications in pregnancy and known medical illness; **pregnancy outcome:** mode of delivery, type of delivery, gender of the baby.

Woman's literacy status was classified as literate if she can read and write with understanding in any language.(census India 2011)[9].

Working status of postnatal woman was named as employed or unemployed. Type of family was categorized as nuclear and joint[10]. Type of delivery as preterm delivery and term delivery[11].

In this study we used the type of ration cards that is yellow coloured card and pink coloured card for assessing their economic status.

Edinburg postnatal depression scale (EPDS): It is a 10 item self report scale based on 1 week recall, designed to screen PND in community[12]. Each item is rated from 0 to 3, yielding a total score of 0-30. Seven of its items are reverse-scored. In India, the Kannada (local language) version of EPDS has been validated to detect antenatal depression, and found to have a sensitivity of 100% and specificity of 84.9%, at a cut-off score of ≥13[12]. In this study, EPD Scale is adopted by translating into local language Telugu. As a result of language characteristics, communication was indirect in the sense that words or phrases could often not be translated word-for-word but had to be interpreted and given meaning by counselors. By using our most capable and experienced midwives and counselors who also had a strong grasp of the english terminology around mental health to work on this study, losses in translation were minimized as far as possible. It was pretested on 30 postnatal mothers under the guidance of a qualified psychiatrist to ensure that questions were easily understood by mothers and responses were correctly interpreted. Woman with EPDS score of ≥13 was referred to a psychiatrist for further evaluation.

Statistical analysis: Data obtained was entered and analyzed in MS excel (Microsoft Pvt.Ltd) and represented in the form of tables and graphs. The results were expressed as percentages. The prevalence of postnatal depression (PND) was calculated as percentage of women who scored ≥13 in EPDS. Chi-square test was applied to find the association of PND across socio-demographic, obstetric and pregnancy outcome variables. Fischer's exact p was considered if more than 20% of the cells had an expected count of less than 5.

Ethical approval

Institution review board and ethics committee of Great Eastern Medical School and Hospital, Ragolu, Srikakulam district, Andhra Pradesh, India, approved the study protocol. Informed written consent was taken from all the respondents for voluntary participation in local language (Telugu).

RESULTS

Study participants are 229 postnatal mothers who satisfied inclusion and exclusion criteria. The mean age of study participants was 20.73±3.25 years (range: 18-33 years) and mean duration of married life was 2.66±2.4 years (range: 1-11 years).Most of them were Hindus 79.9% by religion. Joint family system found in majority 58.5%. Literacy rate was

58% and three fourths of them were economically below poverty line. Unemployed women were 72% and primiparas 58.5% formed the majority among the study participants. Most of the husbands 71.1% of housewives were farmers by occupation. Unplanned pregnancies were 55.45% .Majority of the deliveries were full-term 95% and mode of delivery by cesarean section were 11%, gender of the newborn males 55%. Known medical illness or complications included anemia, pre eclampsia, eclampsia, polycystic ovarian syndrome in the last pregnancy. None of the mothers had still birth or abortion in last pregnancy.(Table 1)

Table 1: Key characteristic features of study participants (n=229)

Study variable	Participants (%)
Age	
<20	122 (53.2)
21-25	80 (34.9)
26-30	20 (8.7)
>30	7 (3)
Religion	
Hindu	183 (79.9)
Muslim	28 (12.2)
Christian	18 (7.8)
Type of family	
Nuclear	95 (41.4)
Joint	134 (58.5)
Education status	
Literate	133 (58)
Illiterate	96 (41.9)
Economic status	
Above poverty line	61 (26.6)
Below poverty line	168 (73.3)
Working status of postnatal women	
Employed	64 (27.9)
Unemployed	165 (72)
Husbands occupation	
Farmer	163 (71.1)
Others	66 (28.8)
Pregnancy planning	
Planned	127 (55.4)
Unplanned	102 (44.5)
Parity	
1	143 (62.4)
2	75 (32.7)
3	9 (3.9)
>3	2 (0.87)
Type of delivery	
Pre term	11 (4.8)
Full term	218 (95.1)
Mode of delivery	
Normal	202 (88.2)
Cesarean section	27 (11.7)
Gender of the newborn	
Female	103 (44.9)
Male	126 (55)
Complications in pregnancy/medical illness	
Yes	81 (35.3)
No	148 (64.6)

The EPDS score of 65 study participants was ≥13 which shows that 28.3% suffered from postnatal depression (PND). PND was significantly associated ($p<0.05$) with socio-demographic variables (type of family, socio-economic status, working status of postnatal women, husbands occupation), obstetric variables (complications / known medical illness) and pregnancy outcome variable (gender of the newborn) with postnatal depression. (Table 2)

DISCUSSION

The objective of this study was to find the prevalence of postnatal depression among postnatal women in Singupuram rural health training centre area, Srikakulam district, Andhra Pradesh and to find association between socio-demographic, obstetric and pregnancy outcomes and postnatal depression (PND).

In our study we found the prevalence 28.3% of postnatal depression in the study area. Risk of postnatal depression was found to be significantly associated with type of family, working status of postnatal women, husbands occupation, socio-economic status, complications of pregnancy/ known medical illness, gender of the newborn.

Women's age, literacy, social economic status, religion and culture do have a significant influence on pregnancy experiences and her mental health[13]. The present study was to explore the risk factors of postnatal depression.

Postnatal prevalence in this study was 28.3%.The study done in Karnataka reported a prevalence of 31.4%[8]. Other hospital and community based studies in India have reported lower prevalence of PND ranging from 11% to 23%[4,5,6,7,14]. Very wide range of PND prevalence has been reported in studies from China (11%), United Arab Emirates (15.8%), Zimbabwe (16%), Brazil (20.7%), South Africa (34.7%), and Pakisthan (40%)[15,16,17,18].

Type of family, working status of postnatal women and husbands occupation showed significant association with postnatal depression. Was it a serendipitous finding or these women had other protective influences, e.g. better social support; marital quality etc, needs further investigation[14]. Some studies found an association of postnatal depression with age and working status of the mother[7,19].

Socio-economic status showed significant association with PND in this study. Poverty lead financial problems may act as an additional stressor, especially at the juncture where another family member is being added[14]. This is corroborated by the reports of studies from low and middle income countries[6,20,21,22]. Such association was not seen in other studies[14,18,23].

Table 2: Association of socio-demographic, obstetric and pregnancy outcome variables with risk of postnatal depression (n=229)

Study variable	EPDS Score		Total	P value
	≥13 (%)	<13 (%)		
Age				
<20	33 (27)	89 (72.9)	122	0.427
21-25	21 (26.25)	59 (73.75)	80	
26-30	9 (45)	11 (55)	20	
>30	2 (28.5)	5 (71.4)	7	
Religion				
Hindu	50 (27.3)	133 (72.6)	183	0.583
Muslim	8 (28.5)	20 (71.4)	28	
Christian	7 (38.8)	11 (61.1)	18	
Education				
Literate	40 (30)	93 (69.9)	133	0.554
Illiterate	25 (26)	71 (73.9)	96	
Working status of postnatal women				
Employed	27 (42.1)	37 (57.8)	64	**0.0039**
Unemployed	38 (23)	127 (76.9)	165	†
Socio-economic status				
Below poverty line	54 (32.1)	114 (67.8)	168	**0.0363**
Above poverty line	11 (18)	50 (81.9)	61	†
Husbands occupation				
Farmer	40 (24.5)	123 (75.4)	163	**0.0426**
Others	25 (37.8)	41 (62.1)	66	†
Type of family				
Joint	50 (37.3)	84 (62.6)	134	**0.0004**
Nuclear	15 (15.7)	80 (84.2)	95	
Duration of married life				
<1 year	33 (28.2)	84 (71.7)	117	0.951
≥1 year	32 (28.5)	80 (71.4)	112	
Parity				
Multipara	31 (32.6)	64 (67.3)	95	0.23
Primipara	34 (25.3)	100 (74.6)	134	
Pregnancy planning				
Planned	42 (33)	85 (66.9)	127	
Unplanned	23 (22.5)	79 (77.4)	102	0.07
Complications in pregnancy/ known medical illness				
Yes	15 (18.5)	66 (81.4)	81	**0.0143**
No	50 (33.7)	98 (66.2)	148	†
Mode of delivery				
Normal	56 (27.7)	146 (72.2)	202	0.5437
Cesarean section	9 (33.3)	18 (66.6)	27	
Type of delivery				
Pre term	6 (54.5)	5 (45.4)	11	0.07
Full term	59 (27)	159 (72.9)	218	
Gender of the newborn				
Female	44 (42.7)	59 (57.2)	103	**0.0001**
Male	21 (16.6)	105 (83.3)	126	†

† Significant (Chi square test / Fischer Exact test).

Pregnancy planning, type of delivery and mode of delivery did not show significant association with PND in our study. Similar findings are reported by Siddharudha Shivalli[8] and Nandihal Gururaj Hegde S et al[14] and Milgrom J et al[24]. On the contrary, unplanned and unwanted pregnancies, operative procedures and difficult labor have been reported as risk factors for PND in previous studies[15,20].

Complications/ known medical illness during pregnancy showed significant association with postnatal depression. Various studies have reported depression during pregnancy as an important predictor of postnatal depression[6,7,25].

Birth of baby girl is considered as a family and social stressor in Indian societies and hence could be a strong predictor of PND[14]. The present study and other Indian studies from Karnataka [8,14]. Goa[6] and Tamil Nadu[7] corroborate this gender bias.

STRENGTH AND LIMITATION

Strength

The strength of this study is that, it is conducted in the rural part of southern India with a quite good sample size and the present study gives a valuable hints and information to practicing primary health care physicians , health care workers for early identification and diagnosis for women at risk of postnatal depression.

Limitation

The EPDS assesses symptoms and used as a screening tool. A more complete clinical interview could have been used to establish a more reliable diagnosis of postnatal depression.

CONCLUSION

Postnatal depression among rural postnatal women is 28.3%.Poverty, complications in pregnancy, birth of female child could predict the high risk of postnatal depression. Early stage of postnatal depression screening and diagnosis should be included as an integral part of postnatal care.

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