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POST PARTUM DEPRESSION AND ITS MANAGEMENT- A COMPREHEMSIVE REVIEW

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Abstract : Postpartum depression (PPD) is a common complication of childbearing, and has Increasingly been identified as a major public health problem. Untreated maternal depression Has multiple potential negative effects on maternalinfant attachment and child development. Screening for depression in the perinatal period is feasible in multiple primary care or obstetric Settings, and can help identify depressed mothers earlier. However, there are multiple barriers to Appropriate treatment, including concerns about medication effects in breastfeeding infants. This Article reviews the literature and recommendations for the treatment of postpartum depression, With a focus on the range of pharmacological, psychotherapeutic, and other non-pharmacologic interventions..

KEYWORDS: **Antidepressants, depression, Lactation, postpartum, psychotherapy screening**

INTRODUCTION

Estimates of prevalence of PPD in the US, UK and Australia range from 7%–20%, With most studies suggesting rates between 10%–15%.6,7 Significant risk factors For PPD include a history of depression prior to or during pregnancy, anxiety during pregnancy, experiencing stressful life events during pregnancy or the early Puerperium, low levels of social support 8 Or partner support, Low socioeconomic Status, and obstetric complications. Although mental health often is not prioritized as a problem in poorer countries where access to basic nutrition and health care are not consistent, the evidence suggests that postnatal depression may be both more common and more grave for women and their children in low-income countries. The Limited data from resource-constrained countries suggests that rates of depression In mothers of young infants exceeds 25%, and in some settings may be as high as 60%. The intersection of cultural, interpersonal and socioeconomic factors may Also confer significant risk of PPD: in one study in Goa, India, risk for depression After delivery increased with economic deprivation, marital violence, and female Gender of the infant.[1] Childbirth can trigger a variety of psychiatric illnesses Including mood disorders. The term "postpartum Mood disorders" generally refers to the baby blues, Postpartum depression, and puerperal psychosis. The baby Blues affect 30% to 75% of women shortly after childbirth, With symptoms of mood lability, tearfulness, anxiety, Insomnia, and irritability. Because of the mild and transient Nature of symptoms, no treatment is required; however, The blues may sometimes be the early manifestation of Postpartum depression or puerperal psychosis. Puerperal Psychosis, on the other hand, is a rare condition (1 in 500 To 1000 deliveries) but serious because of its association with maternal suicide and infanticide.[2] Negative Effect Of Postpartum Depression Untreated maternal depression is associated with serious morbidity for the mother, The infant, and the family system. Perinatal depression causes significant suffering in Women at a time when personal or societal notions of motherhood as a uniquely joyful, if tiring, experience may be incongruous with the depressed woman's ability to feel gratification in the mothering role, Connect with her infant or carry out the often overwhelming tasks of caring for a new baby. Such a disconnect can reinforce the disabling sense of isolation, guilt, helplessness and hopelessness that frequently characterize the depressed state.[3] Women with PPD are at higher risk for smoking, alcohol or illicit substance abuse, and are more likely than nondepressed mothers to experience current or recent physical, emotional, or sexual abuse.

Although rates of suicide for women during pregnancy and the puerperum are Lower than the general population, suicide is an important cause of maternal mortality. Self inflicted injury is the Leading cause of one-year maternal mortality in the United Kingdom. A recent World Health Organization report on women's health identifies selfinflicted injury as the second leading cause of maternal mortality in high-income countries; suicide remains an important cause of maternal deaths in moderate and lowincome countries. Intrusive Thoughts of accidental or intentional harm to the baby are common in the early postpartum time. These thoughts are more frequent and distressing in women with postpartum depression; however, nonpsychotic depressed women are unlikely to commit infanticide.[4] Diagnosis of postpartum depression The diagnostic criteria for a Major Depressive Episode (MDE) as defined by the Diagnostic and Statistical Manual (DSM-IV) do not differ in the postpartum period as compared to other times, and include at least 2 weeks of persistent Low mood or anhedonia, as well as at least four of the Following: increased or decreased appetite, sleep disturbance, Psychomotor agitation or retardation, low energy, feelings of worthlessness, low concentration, and suicidal ideation.[5] A MDE may be classified as having a postpartum onset if the depressive symptoms begin within the first 4 weeks After delivery. However, studies suggest that depressive episodes are significantly more common in women in the first Three months after delivery, and an increased vulnerability To psychiatric illness may persist for a year or more. It is Important to differentiate PPD from other psychiatric and Nonpsychiatric diagnoses.[6] The "postpartum blues" or "baby Blues" is a transient mood disturbance that affects up to 75% Of new mothers in the 10 days following delivery, and consists of crying, irritability, fatigue, anxiety, and emotional lability. Symptoms are generally mild and self-limited, and do not Involve total loss of pleasure or interest, persistent low mood, Or suicidal ideation. On the other extreme, postpartum Psychosis is a psychiatric emergency that requires immediate Intervention, and is characterized by the rapid onset of severe Mood swings, a waxing and waning sensorium, delusions, Hallucinations or disorganized behaviours, and a relatively High incidence of suicidal ideation or homicidal ideation Toward the infant. Women presenting with a depressive episode, mood elevation, or psychotic symptoms should be screened for any prior history of mania or hypomania to Rule out previously undiagnosed bipolar disorder. Anxiety Disorders are common in perinatal women, and women may have depression comorbid with obsessivecompulsive symptoms, generalized anxiety disorder, panic disorder or Post-traumatic stress disorder. Substance use and medical Causes of psychiatric symptoms, such as thyroid disorders, should also be considered.[7] Screening for postpartum depression There has been increasing focus on the importance of Early and accurate detection and treatment of depression after or during pregnancy. Identification of depression In the postpartum period may be complicated by some Of the normal physical and emotional demands of new Motherhood, including changes in energy and appetite, sleep Deprivation, and Heightened concern for the infant. Experts have recommended screening for PPD at the first postnatal obstetrical visit (usually 4–6 weeks after delivery), or in the family practice40 or pediatric setting, as these are the most widespread points of interaction with the health care system for new mothers within the first three months of delivery.[8] Clinical Presentation Postpartum depression is usually defined as an episode of depression with an onset of symptoms during the First four weeks after delivery; however, women remain At risk for developing depression for several months following delivery. According to the DSM-IV diagnostic Criteria, the postpartum onset specifier can be applied to the current major depressive episode of major depressive disorder, bipolar I disorder, or bipolar II disorder.6 Some Women have a recurrence of depression after childbirth, While others experience first onset of depression in the Postpartum period. [9] The symptoms must be present Most of the day, nearly every day, for two weeks and there Must be an associated decline in social and/or occupational Functioning. A depressed mood caused by substances (such As drugs, alcohol, or medications) or which is part of a general Medical condition is not considered towards a diagnosis of a Major depressive episode. Further, it is important to rule out Uncomplicated bereavement. The symptoms of depression Are usually the same, whether experienced postpartum or not; however, there is often a focus on mothering or infant Care issues in postpartum depression.[10] Pharmacological Treatments for Postpartum Depression 1. Antidepressant medication A small but growing literature suggests that postpartum Depression can be thought of as a variant of major depression That responds similarly to antidepressant medication. Concerns unique to pharmacologic treatment of PPD include Metabolic changes in the postpartum period, exposure of the Infant to medication in breast milk, the effect of depression And treatment on the ability of the depressed mother to care for A new baby, and the perceived stigma of being seen as a "bad Mother" for requiring medication. These factors, as well as The woman's level of distress, access to care, and experience With past treatment may influence the decision of the patient And her caregiver regarding the choice of pharmacologic and Nonpharmacologic treatments for PPD. Data comparing the Effectiveness of medication against other treatment modalities For PPD are scarce, though do suggest that medications are at Least as effective as most psychological interventions based on Effect size. To date, four randomized controlled studies on The treatment of PPD with antidepressant medications have Been published, along with several open trials. Additionally, Two

randomized studies have looked at the prevention of PPD With antidepressant medication.[11] Breastfeeding consideration The benefits of breastfeeding have been well described and have led the World Health Organization, the American Academy of Pediatrics and the American Academy of Family Practitioners to recommend breastfeeding for at least The first 6 months for most women. Potential effects of Antidepressant medication on breastfeeding are of concern to Many mothers and clinicians. However, nonpharmacologic treatments are not effective for some women, and may not be accessible for many women.[12] Hormone therapy There is a dramatic drop in maternal levels of estrogen and progesterone at the time of delivery, and this shift Has been proposed as one trigger for the onset of PPD in Some women. Effects of estrogen in the brain include the Promotion of neuronal growth and survival, enhancement Of neurotransmitter activity, mitigation of oxidative stress and modulation of the hypophysealpituitary axis. [13] In a double-blind placebo-controlled study by Gregoire et al women with postpartum depression were randomized to Receive estrogen or placebo patches. Breastfeeding women Were excluded. Over the first month of treatment, women Receiving estrogen showed greater and more rapid improvement. In their symptoms as measured on the Edinburgh Postnatal Depression Scale and in clinical interviews.[14] Women in the Placebo group also improved but maintained depression scores Above the screening threshold. Neither group had complete Remission of symptoms. The authors did not control for women Receiving concomitant antidepressant medication, which was more common in the estrogen treatment group, making interpretation of the study results difficult. Additionally, women Were included in the study up to 18 months postpartum, by which time the effects the postpartum drop in estrogen would likely have resolved.[15] Psychological and psychosocial Treatments for postpartum depression Many mothers with postpartum depression are hesitant to Take antidepressants due to concerns about infant exposure to medication through breast milk or concerns about potential Side effects, and therefore often prefer psychological Treatments. Although relatively few studies have Systematically investigated nonpharmacologic treatments for PPD, existing research supports the use of both psychological treatments (specifically interpersonal therapy, cognitive-behavioural therapy, and psychodynamic psychotherapy), as well as psychosocial interventions, such as nondirective counseling. A Cochrane meta-analysis of ten randomized controlled trials of psychosocial and psychological treatments for postpartum depression concluded that both psychosocial and psychological interventions are effective in decreasing depression and are viable treatment options for postpartum depression.[16] Interpersonal therapy (IPT) Interpersonal therapy (IPT) is a time-limited treatment for Major depression based on addressing the connection between Interpersonal problems and mood, which frames depression as a medical illness occurring in a social context. In IPT, the Patient and clinician select one of four interpersonal problem Areas (role transition, role dispute, grief, or interpersonal Deficits) as a treatment focus. Over the course of the therapy (typically 12–20 weeks), strategies are pursued to assist Patients in modifying problematic approaches to relationships and in building better social support. IPT has been adapted to address problem areas relevant to postpartum depression Such as the relationship between mother and infant, mother and partner, and transition back to work. The fact that IPT Is both time-limited and problem-focused fits well with the Demands of the postpartum mother. Several studies, including one large-scale randomized Controlled trial, have supported the effectiveness of IPT For treating postpartum depression. O'Hara and colleagues Randomized 120 women with postpartum depression to receive 12 weekly 60-minute individual sessions of manualized IPT by a trained therapist versus control condition of a Wait-list. The women who received IPT had a significant Decrease in their depressive symptomatology (measured by Hamilton Depression Rating Scale and Beck Depression Inventory) as compared to the wait-list group, as well as Significant improvement in social adjustment scores. In Another study by Clark et al women with postpartum Depression were assigned to individual IPT (12 sessions) Versus mother–infant group therapy versus a wait-list Condition. Both IPT and mother–infant group therapy were associated with greater reduction in depressive symptoms as Compared to the wait-list conditions. Both studies support the Effectiveness of IPT as a treatment for PPD, though there is Not enough data to suggest a specific benefit to IPT compared With other therapeutic modalities.[17] Cognitive behavioural therapy (CBT) Cognitive behavioural therapy (CBT), a well-studied and effective treatment for major depression, is based on the premise That both perceptions and behaviour's are intimately linked to Mood. CBT focuses on helping depressed patients to modify Distorted patterns of negative thinking and to make behavioural Changes that enhance coping and reduce distress. There Have been several trials assessing CBT alone or with other Interventions for the treatment of PPD. In a randomized controlled psychotherapy-pharmacotherapy study, Appleby et al Assigned 87 women with PPD to one of four conditions in a Factorial design, varying based on treatment with either one or Six sessions of CBT-based counseling, and treatment with fluoxetine or placebo. All four treatment groups had significant Improvement in depressive symptoms. Women who received Six CBT sessions versus one had greater decrease in depressive symptoms. Six sessions of CBT plus placebo pill was as effective as treatment with fluoxetine plus one session of CBT, but there was no added benefit in the group receiving 6 Counseling sessions in combination

with fluoxetine. It should Be noted that the counseling sessions were delivered by Briefly trained nonspecialists, and six sessions of CBT may Not be a sufficient representation of a standard course of Treatment. In another combination medication-CBT study, Misri et al randomized 35 women with PPD and comorbid Anxiety either to paroxetine monotherapy or paroxetine and 12 weekly manualized CBT session with physiologist.[18] Nondirective counselling As compared with IPT or CBT, psychosocial interventions are unstructured and non-manualized, and include nondirective counseling and peer support. nondirective counseling (also known as "personcentered") is based on the use of empathic and nonjudgmental listening and support. In the first notable study evaluating this intervention, Holden randomized 50 Women with PPD to 8 weekly nondirective counseling sessions with a health visitor or routine primary care.[19] A health visitor in the UK is a public health nurse who conducts home Visits with pregnant and postpartum women. This study found that the rate of recovery from PPD for counseling (69%) was Significantly greater than that of the control group (38%). In a similar study conducted in Sweden, Wickberg and Hwang Randomized 31 women with PPD to receive six nondirective counseling sessions by child health clinic nurses or routine primary care. As in the Holden study, a significantly greater Percentage of women in the treatment group (80%) had remission of depression than in the control group (25%). Study Limitations include the removal of four study participants, Two in each group, for more intensive mental health services due to illness severity.[20] Maintenance Treatment of Postpartum Depression Women who are at risk for non-postpartum recurrences of Depression should be evaluated for maintenance treatment. The risk factors that support the need for maintenance Treatment are a history of recurrent episodes (3 or more), Chronic episodes, psychotic episodes, severe episodes, Episodes that are difficult to treat, significant comorbidity (psychiatric or medical), residual symptoms (lack of Remission) during the current episode, and a history of Recurrence during discontinuation of antidepressants.[21] Exercise -Several studies have investigated the role that exercise can Play in alleviating postpartum depressive symptoms. A Study by Da Costa et al looked at 88 women with PPD who Were randomized to a 12-week, home-based exercise program or usual care. There was a reduction in depression Rating scales in the intervention group as compared to the Usual care group posttreatment, though not at the 3-month Follow-up.[22] However, Ko et al investigated a low-intensity Exercise program that was specifically designed and administered to women with postpartum fatigue and depression. There was no significant change in depression between the Treatment group and the control group. Despite the limited Evidence of efficacy for the treatment of PPD, the UK National Institute for Health and Clinical Excellence (NICE) Has recommended in their antenatal and postnatal mental Health guidelines that health professionals should consider Exercise as a management strategy in women experiencing Mild-to-moderate depression. A review of the effects of Exercise on PPD defined "feasible and effective" exercise As: moderateintensity activities for at least 30 minutes per Day, five days of the week, including walking in the form of "pram pushing".

AIM AND OBJECTIVES

AIM

The current study aims to evaluate the impact pharmacist directed counseling services on health outcomes in patient's suffering with Post-Partum Depression.

OBJECTIVES:

Primary Objectives

• To evaluate the effect of pharmacist delivering couselling on humanistic outcomes PPD by using clinical and health satisfaction questionnaire (CHES-Q).

Secondary Objectives

• To assess and identify PPD's prevalence, diagnostic criteria, and risk factors as well as thechallenges associated with this mood disorder.
• To assess the safety concerns for medications during pregnancy and lactation.

RESEARCH METHODOLOGY

Study Design: A Prospective study

Study duration: 5 months

Study Population: All patients who are suffering from PPD under medication therapy attending hospital for routine medical care are the target study population for this study.

Sample size: 120 patients

smple size calculated with n Query software with t- test for 2 means.

A sample size of 60 in each group will have 90% power to detect a difference in means of 9.008 assuming that the common standard deviation is 16 using a two group t-test with a 5% two-sided significance level.

Inclusion Criteria:
All the healthy postnatal women fulfilling the criteria (No prior hormonal therapy/ no general medical illness or neurological condition/ Non-alcoholic or not on any substance use dependence (excluding nicotine) were included after taking the consent.

Exclusion Criteria:
Women who had a verbal communication problem and complete loss of hearing were excluded.

Methodology
• The patient's medical records will be checked and information such as socio demographics, antenatal, medical, and other relevant history will be noted.

• Women will be screened for PPD using EPDS and DASS-21 scales questionnaires during the first, second, and fourth weeks of postpartum.

• The questionnaires will be filled out by the interviewers according to the answers provided by the participants, and then the scores were calculated accordingly treatment for supportive counselling by interviewers.

• Patients in the intervention group received counseling from the pharmacist at baseline, first follow-up visit, and second follow-up visit. Patients in the control group were followed by only physician care. At the end of the study, the participants in the control group were also counseled after getting data related to medication adherence and clinical outcome measures.

• All the gathered data will further be analyzed to find out the prevalence and the association of various risk factors was determined by odds-ratio and significant association will be considered by statistical data using the student t test.
This section elaborates the proper statistical/econometric/financial models which are being used to forward the study from data towards inferences. The detail of methodology is given as follows.

IV. RESULTS AND DISCUSSION
Out of 120 women included in the analysis, the mean age was 24.39. The prevalence rate of PPD was found to be 34.17% (N=41) on 1st day postpartum, 37.5% (*n*=45), and 4.16% (*n*=5) on the 2nd and 4th week postpartum respectively when identified using EPDS scale. Similarly using DASS-21, the prevalence was 21.67% (*n*=26), 15.83% (*n*=19), and 2.5% (*n*=3) on the first day, 2nd week, and 4th week of post-partum respectively. On comparing the socio-demographic risk factors using EPDS among the female participants with depression and without depression, it was observed that PPD is significantly associated with a lower level of education (up to primary level). These data gave a *p*-value <0.05 (at a chi-square value of 3.70). Similarly, unemployment was the significant risk factor for the development of PPD, p-value (at chi- square value of 3.81). In DASS-21, only the women with age <30 years were found to have developed PPD symptoms with a *p*-value <0.05

(at chi-square value of 5.51) (Table 6.1 AND 6.2)

Table 6.1: Socio-demographic risk factors according to EPDS

RISK FACTORS	EPDS					
	1st DAY				2nd WEEK	
	With depression *n*=41 (34.17%)	Without depression *n*=79 (65.83%)	*p*value	With Depression *n*-45 (37.5%)	Without depression *n*=75 (62.5%)	*p*-value
					Age	
20-30	39 (95.12)	74 (93.67)	0.75	43 (35.56)	70 (93.33)	0.62
>30	2 (4.88)	5 (6.33)		2 (4.44)	5 (6.67)	
					Education	
< OR EQUAL TO	15 (36.59)	45 (56.96)	0.03*	25 (55.56)	35 (46.67)	0.35
PRIMARY						
> PRIMARY	26 (63.41)	34 (43.04)		20 (44.44)	40 (53.33)	
					Occuppation	
UNEMPLOYED	29 (70.73)	58 (73.42)	0.75	28 (62.22)	59 (78.67)	0.04*
OTHERS	12 (29.27)	21 (26.58)		17 (37.78)	16 (21.33)	
					Family Structure	
NUCLEAR	20 (48.78)	30 (37.97)	0.25	20 (44.44)	30 (40)	0.63
JOINT	21 (51.22)	49 (62.03)		25 (55.56)	45 (60)	
					Owns Land	
YES	19 (46.34)	48 (60.76)	0.13	24 (53.55)	43 (57.33)	0.67
NO	22 (53.66)	31 (39.24)		21 (46.67)	32 (42.67)	
					Type of House	
KACCHA	26 (63.41)	54 (68.35)	0.59	27 (60)	48 (64)	0.66
PAKKA	15 (36.59)	25 (31.65)		18 (40)	27 (36)	
					Socio-Economic Status	
LOWER/UPPER-	37 (90.24)	72 (91.14)	0.87	40 (88.89)	69 (92)	0.57
UPPER	4(3.76)	7 (8.86)		5 (11.11)	6 (8)	

Table 6.2: Socio-demographic risk factors according to DASS-21

RISK FACTORS	DASS-21					
		1st DAY			2nd WEEK	
	With depression *n*=26 (21.67%)	Without depression *n*=94 (78.33%)	*p*value	With Depression *n*-19 (15.83%)	Without depression *n*=101 (84.16%)	*p*-value
20-30	22 (84.62)	91 (96.81)	0.01*	17 (89.47)	96 (95.05)	0.34
>30	4 (15.38)	3 (3.19)		2 (10.53)	5 (4.95)	
< OR EQUAL TO	10 (38.46)	50 (53.19)	0.27	8 (42.11)	52 (51.49)	0.50
PRIMARY						
> PRIMARY	16 (61.54)	44 (46.81)		11 (57.89)	51 (50.50)	
UNEMPLOYED	17 (65.38)	70 (74.47)	0.36	13 (68.42)	74 (73.27)	0.66
OTHERS	9 (34.62)	24 (25.53)		6 (31.58)	27 (26.73)	
NUCLEAR	6 (23.08)	44 (46.81)	0.30	5 (26.32)	45 (44.55)	0.14
JOINT	20 (76.32)	50 (53.19)		14 (73.68)	56 (55.45)	
YES	17	50	0.27	14 (73.68)	55 (54.46)	0.12
	(65.38)	(53.19)				
NO	9 (34.62)	44 (46.81)		5 (26.32)	46 (45.54)	
KACCHA	14 (53.85)	64 (68.09)	0.09	12 (63.16)	55 (54.46)	0.48
PAKKA	12 (46.15)	30 (31.91)		7 (36.84)	46 (45.54)	
LOWER/UPPER-	22 (84.62)	87 (92.55)	0.21	18 (94.74)	91 (90.10)	0.52
LOWER						
UPPER	4 (15.38)	7 (7.75)		1 (5.26)	10 (9.90)	

In our study, on comparing the significance of having a greater number of children in causing PPD. The data gave a *p*-value <0.05 (at chi-square value of 4.01), indicating that more than 2 children were the significant risk factor for the development of PPD. This was found while using both scales.

Other gender issues and obstetric factors that were found significantly associated with developing PPD while screening using the DASS-21 scale were more than one girl children and pressure of delivering a male child (Table 6.3 and 6.4).

Table 6.3: Obstetric risk factors and gender issues according to EPDS

RISK FACTORS	EPDS					
	1st DAY		2nd WEEK			
	With depression N=41 (34.17%)	Without depression N=79 (65.83%)	With Depression N=45 (37.5%)	Without depression N=75 (62.5%)		*p*-value
			TOTAL NO OF CHILDREN			
>2	9 (21.95)	10 (12.66)	0.19	11 (24.44)	8 (10.67)	0.04*
< OR EQUAL TO 2	32 (78.05)	69 (87.34)		34 (75.56)	67 (89.33)	
			TOTAL NO OF GIRLS			
>1	13 (31.71)	15 (18.99)	1.18	13 (28.89)	15 (20.00)	0.27
< OR EQUAL TO 1	28 (68.29)	64 (81.01)		32 (71.11)	60 (80.00)	
			TOTAL NO OF BOYS			
>1	7 (17.07)	19 (24.05)	0.38	10 (22.22)	16 (21.33)	0.91
< OR EQUAL TO 1	34 (82.93)	60 (75.95)		35 (77.78)	59 (78.67)	
			PRESENT PREGNANCY			

WANTED	34 (82.93)	71 (89.87)	0.28	39 (86.67)	66 (88.00)	0.83
UNWANTED	7 (17.07)	8 (10.13)		6 (13.33)	9 (12.00)	

			IF WANTED, PREGNANCY			
PLANNED	23 (56.10)	56 (70.89)	0.21	27 (60)	52 (69.33)	0.27
UNPLANNED	11 (26.83)	15 (18.99)		12 (26.67)	14 (18.67)	
			FEAR OF GENDER			
NO	30 (73.17)	55 (69.62)	0.68	30 (66.67)	54 (72.97)	0.51
YES	11 (26.83)	24 (30.38)		15 (33.33)	21 (28)	
			PRESSURE OF MALE CHILD			
YES	14 (34.15)	26 (32.91)	0.89	16 (35.56)	24 (32)	0.69
NO	27 (65.85)	53 (67.09)		29 (64.44)	51 (68)	
			MODE OF DELIVERY			
C-SECTION	22 (53.66)	33	0.22	20	35	0.81
		(41.77)		(44.44)	(46.67)	
NORMAL	19 (46.34)	46 (58.23)		25 (55.56)	40 (53.33)	
	COMPLICATION DURING PREGNANCY OR DELIVERY					
YES	5 (12.20)	9 (11.39)	0.90	8 (17.78)	6 (8)	0.11
NO	36 (87.80)	70 (88.61)		37 (82.22)	69 (92)	
	COMPLICATION DURING PREVIOUS PREGNANCY OR DELIVERY					
YES	1 (2.44)	7 (8.86)	0.18	2 (4.44)	6 (8)	0.45
NO	40 (97.56)	72 (91.14)		43 (95.56)	69 (92)	

Table 6.4: Obstetric risk factors and gender issues DASS -21

RISK FACTORS	**DASS-21**					
	1st Day			**2nd Week**		
	With depression N=26 (21.67%)	**Without depression N=94 (78.33%)**	***p*value**	**With Depression N-19 (15.83%)**	**Without depression N=101 (84.16%)**	***p*-value**
	TOTAL NO OF CHILDRENS					
>2	7 (26.92)	12 (12.77)	0.08	6 (31.58)	13 (12.87)	0.04*
< OR EQUAL TO 2	19 (73.08)	82 (87.23)		13 (68.42)	88 (87.13)	
	TOTAL NO OF GIRLS					

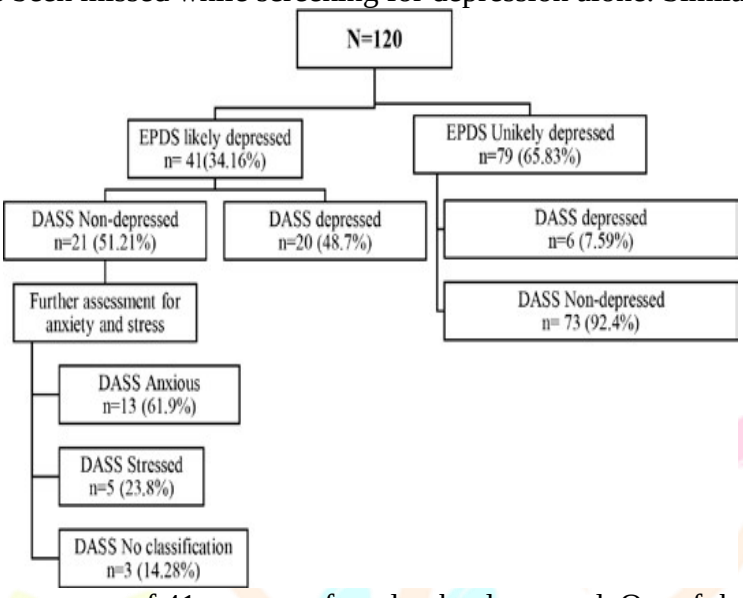
>1	12 (46.15)	16 (17.02)	0.01*	9 (47.37)	19 (18.81)	0.01*
< OR EQUAL TO 1	14 (53.85)	78 (82.98)		10 (52.63)	82 (81.19)	
	TOTAL NO OF BOYS					
>1	5 (19.23)	21 (22.34)	0.73	5 (26.32)	21 (20.79)	0.59
< OR EQUAL TO 1	21 (80.77)	73 (77.66)		14 (73.68)	80 (79.21)	
	PRESENT PREGNANCY					
WANTED	22 (84.82)	83 (88.30)	0.62	18 (94.74)	87 (86.14)	0.30
UNWANTED	4 (15.38)	11 (11.70)		1 (5.26)	14 (13.86)	
	IF WANTED, PREGNANCY					
PLANNED	14 (63.64)	65 (87.31)	0.16	12 (66.67)	67 (77.01)	0.35
UNPLANNED	8 (36.36)	18 (21.69)		6 (33.33)	20 (22.99)	
	FEAR OF GENDER					
NO	18 (69.23)	67 (71.28)	0.84	13 (68.42)	72 (71.29)	0.80
YES	8 (30.77)	27 (28.72)		6 (31.58)	29 (28.71)	
	PRESSURE OF MALE CHILD					
YES	14 (53.85)	26 (27.66)	0.01*	11 (57.89)	29 (28.71)	0.01*
NO	12 (46.15)	68 (72.34)		8 (42.11)	72 (71.29)	
	MODE OF DELIVERY					
C-SECTION	15 (57.69)	40 (42.55)	0.17	11 (57.89)	44 (43.56)	0.25
NORMAL	11 (42.31)	54 (57.45)		8 (42.11)	57 (56.44)	
	COMPLICATION DURING PREGNANCY OR DELIVERY					
YES	2 (7.69)	12 (12.77)	0.48	1 (5.26)	13 (12.87)	0.34
NO	24 (92.31)	82 (87.23)		18 (94.74)	88 (87.13)	
	COMPLICATION DURING PREVIOUS PREGNANCY OR DELIVERY					
YES	1 (3.85)	8 (8.52)	0.42	1 (5.26)	8 (7.92)	0.69
NO	25 (96.15)	86 (91.49)		18 (94.74)	93 (92.08)	

The risk of PPD was more in the women who suffered from any adverse event in life and thus considered as the contributing factor for depression. These data gave a pvalue <0.05 (at chi-square value of 7.15). Similarly, not getting support from the partner and In-laws was significantly associated with PPD. These data gave a p-value <0.05 (at chi-square value of 4.02 and 4.10), showing the significance.

Comparison of EPDS and DASS-21 scales

Figure 6.1 represents the clinical pathway, in which *n*=41(34.2%) women were found to be likely depressed (On EPDS). These women were assessed further and *n*=20 (48.7%) was classified as depressed and the remaining *n*=21 (51.2%) was not (On DASS-21). This shows that the remaining 21 women identified as depressed on EPDS did not co-relate with the DASS-21 scale, in which 13 were anxious, 5 were stressed and 3 women received no classification. This indicates that despite having a sensitive EPDS cut-off of >8, 6 depressed women were not

identified by EPDS as likely to be depressed. Figure 2 represents that out of 120 participants 98 women were postnatally distressed in addition to which 72 women (49 anxious and 23 stressed) over and above 26 depressed women in the total sample. Thus, if depression would be considered then 72 women would have been missed while screening for depression alone. Similarly returning to EPDS (Figure 6.1), in which 21 women out of 41 were not found to be depressed. Out of these 21 women, 18 women (anxious and stressed) were not corroborated by DASS-21 as being depressed which resulted in no further assessment. Thus, if depression would be considered then 72 women would have been missed while screening for depression alone. Similarly returning to EPDS



(Figure 6.1), in which 21 women out of 41 were not found to be depressed. Out of these 21 women 18 women (anxious and stressed) were not corroborated by DASS21 as being depressed which resulted in no further assessment.

Figure 6.1: DASS-21 classification for the women identified as depressed on EPDS.

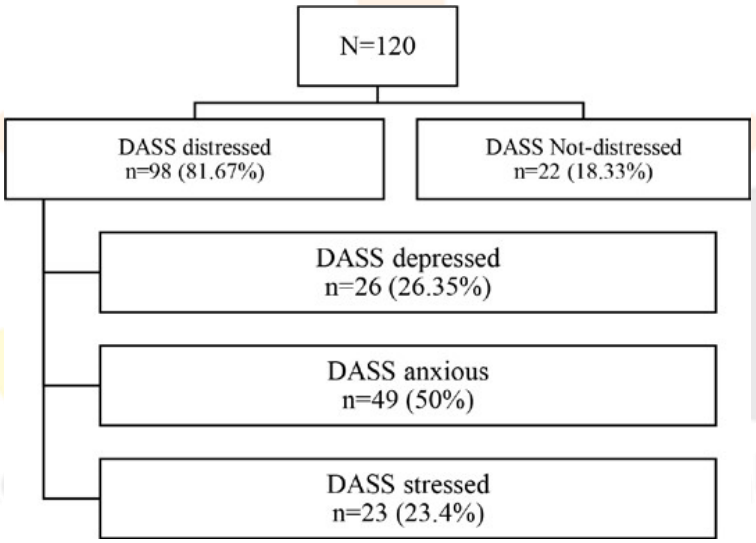


Figure 6.2: Classification of women on DASS-21 (depression, anxiety, stress).

Effect of Counselling on Patients

On the EPDS scale, 41 women who were identified as depressed women on the first day postpartum were provided supportive counselling as the treatment option. Out of these 41 depressed women, 18 of them improved when assessed in the 2nd week postpartum and the remaining 23 were still found to be depressed. Again these 23 women were counselled, out of which 20 women showed improvement in the 4th week while the remaining 3 were not assessed further. Similarly, 26 out of 120 participants were identified as depressed by the DASS-21 scale who were provided supportive counselling on 1st day postpartum. Out of which, 11 women improved in the 2nd week postnatal while the remaining 15 were still depressed and was again counselled. In the 4th week, the post- partum

majority of the women improved with no depression (n=14) while only 1 woman was found to be depressed. Thus, a significant fall in depression was observed after providing supportive counselling to the depressed participants.

CONCLUSION

A high prevalence of PPD was found in our study. However, the prevalence of PPD varied in different studies carried out in different regions using various screening tools. Different predisposing factors like socio-Demographic factors which include women's age (2), more than one girl child, Adverse life events like previous abortion, previous child's death, domestic violence, husband's addiction to alcohol and parent's death and other risk factors like lack of partner and In-laws support were associated for the development of PPD and were addressed by counselling of pregnant subjects and their families. However, since sociocultural factors play a major role in the causation of PPD, these should be aimed for. Our study even mentions the importance of involving a Clinical pharmacist for the management of PPD who provided interventional supportive counselling to the depressed women and because of which there was a decrease in the number of depressed women over 4 weeks. Thus, from this study, we can conclude that Clinical pharmacists have a significant and positive impact on patient care and therapeutic outcomes through effective counselling. Further, more extensive studies involving community-based samples in the future might help identify additional risks. Factors for PPD in different populations and the training of paramedics and involving them in antenatal care can improve maternal mental health to a great extent.

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