

## Prenatal psychiatric symptoms as predictors of postnatal anxiety and depression among primary and multi-gravida women

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### Abstract

**Objectives:** The study aimed to examine effect of prenatal anxiety and depression on the prediction of postnatal anxiety and depression among pregnant women. In addition, to find out mean differences in prenatal and postnatal anxiety and depression among primary and multigravida pregnant women.

**Methods:** This study was conducted at Sargodha Pakistan, on a total number of 100 pregnant women as participants. The sample size was calculated by using sampling adequacy test which confirmed that the sample of 100 was sufficient to carry out the statistical analysis for the present study. Data was collected by administering Edinburgh Postnatal Depression Scale. SPSS-23 was used for data analysis. The study has been completed in one year, from October, 2017 to November, 2018.

**Results:** Results indicated prenatal anxiety has significant positive correlation with prenatal depression ( $p < .001$ ), postnatal anxiety ( $p < .001$ ) and postnatal depression ( $p < .001$ ). The prenatal depression has significant positive correlation with postnatal anxiety ( $p < .001$ ) and postnatal depression ( $p < .001$ ). Results also indicated that postnatal anxiety has significant positive correlation with postnatal depression ( $p < .001$ ).

**Conclusion:** In this study, findings suggested that there is significant relationship between prenatal and postnatal psychiatric symptoms.

**Keywords:** Prenatal anxiety, prenatal depression, postnatal anxiety, postnatal depression. (JPMA 70: 2138; 2020)

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### Introduction

A woman is expected to be additionally vulnerable to depression during prenatal period than at any other time. Post natal depression (PND) appears to be a major issue in Pakistan, with a prevalence ranging from 28 percent to 63.3 percent which is the highest among Asian countries.<sup>1</sup> Past adverse pregnancy outcomes such as abortion and perinatal complications were found to have significant association with postnatal depression (PPD). Factors associated with PPD include younger age and gender preference has frequently been cited as a risk factor for PPD in Asian culture.<sup>2,3</sup> Postnatal depression (PND) is regarded as a major parental mental health issue.<sup>4</sup> In particular, prenatal anxiety, a frequent psychopathological condition in mothers,<sup>5</sup> has been identified as a relevant risk factor for prenatal depression.<sup>6</sup> Depression is amongst the most common disorders disturbing women throughout the prenatal period.<sup>7</sup> In a study on women with diagnosed Obsessive Compulsive Disorders (OCD), 39% of the participants reported that their OCD began during pregnancy.<sup>8</sup> These circumstances make antenatal depression among

the most under-recognized and under-treated conditions. This lack of recognition has serious implications, as it is now widely recognized that maternal depression, anxiety and stress during pregnancy have long-term effects on both mother and baby.<sup>9</sup> Some studies found that an older age was positively associated with depression scores during pregnancy.<sup>10</sup> In the general population, mental health disorders during the perinatal period (pregnancy and up to 1 year postpartum) appear to be common with the findings of a study in the USA showing a 12 month prevalence of 25.3% for pregnant women and 27.5% for postpartum women. Mental disorders during pregnancy and the postpartum period are associated with adverse outcomes for both the mother and the child.<sup>2</sup> There is some evidence for moderation of this association, whereby it is stronger in low- and middle-income countries and generally among low socioeconomic groups.<sup>11</sup> Biological and hormonal changes have been observed during pregnancy and in postnatal period which have been associated with the occurrence of Postnatal Depression in new mothers. But the psychosocial factors like gender of new born and life stress are also shown to be the strong predictive factors for postnatal depression in mothers.<sup>12</sup> The study aimed to examine effect of prenatal anxiety and depression on the prediction of postnatal anxiety and depression

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among pregnant women. In addition, to find out mean differences in prenatal and postnatal anxiety and depression among primary and multigravida pregnant women.

## Subjects and Methods

The survey-based study was conducted at Sargodha, Pakistan, to estimate the psychiatric symptoms in pregnant women and comprised of pregnant women (N = 100) collected through purposive sampling. The purposive sample is based on a strict inclusion-exclusion criterion. Only pregnant women of third trimester were included in the sample. In the postnatal period, data was collected from the same participants after 15 days of childbirth up to 3 months. The sample was equally divided in primigravida (n = 50, 50%) and multigravida (n = 50, 50%). The sample size was calculated by using sampling adequacy test, (KMO) which confirmed that the sample of 100 was sufficient to carry out the statistical analysis for the present study.<sup>13</sup> The participants provided the information on their prenatal and postnatal anxiety and depression, after providing written informed consent. They were given the right to withdraw from the research at any stage. Data was collected from three different centers Mola Bakhsh, Kareema and National Hospitals of Sargodha. The researcher provided proper instructions regarding the completion of scales and responded to their queries. No time limit was set for participants and no incentive was given to participants for taking part in the research. Respondents were requested not to leave even a single question unanswered. The Edinburgh Postnatal Depression Scale (EPDS; Cox et al., 1987) which is validated by British journal of psychiatry and is one of the most widely used self-report instruments to screen for depression and anxiety in both postnatal and prenatal periods. The scale was Urdu translated by researcher with the help of committee approach in all three steps by following the Oblique Translation Technique which involved forward translation (from source to target language), back translation (from target to source language) and reconciliation of both versions (original English version and English version obtained

from the translation of Urdu into English). The Item Total Correlation for the items of the scale were the magnitude of items range from lowest .38 to heights .79 which is greater than 0.30 which depicted that all the items are valid to retain in the scale and the correlation of the scales domain in the prenatal with the postnatal period also confirmed the construct validity of the scale. The total items of scale were 10. Two first items of scale are negatively worded from total score of 10 item scale. Other eight items of scale are positively worded. Four step rating scale is use and response categories are one Not at Alto four Always. The EPDS carries a significant level of sensitivity (86%) and specificity (78%) in identifying those at risk of or potentially suffering from either prenatal or postpartum depression. It also has adequate sensitivity and specificity to identify depressive symptoms in the antenatal period and is useful in identifying symptoms of anxiety. The EPDS is a ten-item scale, typically self-administered, requiring about five minutes to complete. In doubtful cases, it can be re-administered after two weeks. The EPDS has a maximum score of 30; a score of 10 or more may indicate possible depression of varying severity. Always pay attention to Item 10, which speaks of suicidal thoughts. The cutoff score range is 9 to 13 points. Four step rating scale is used and response categories are one Not at All to four Always. However the present study used low high score to check the relationship between prenatal psychiatric symptoms and postnatal psychiatric symptoms. The translated scale in Urdu version had been used in the present study.

SPSS-23 was used for data analysis. Initially descriptive statistics, skewness and reliability coefficients were computed for all scales. Process software was applied for testing the hypothesis regarding the prenatal psychiatric symptoms as predictor of postnatal psychiatric symptoms.

## Results

(a) The alpha reliability coefficient range from lowest 0.76 to 0.90 which is greater than 0.70, the alpha reliability coefficient for all scale range from 0.76 to 0.90 range

**Table-1:** Descriptive statistics, alpha reliability coefficients and zero-order correlations.

Variables	N	M	SD	(a) α	Range		Normality analysis (b)		Zero-order correlation (c)			
					Potential	Actual	Skewness	Kurtosis	1	2	3	4
◆ Prenatal anxiety	100	6.37	2.25	.79	10-40	3-11	.18	-1.17	-	.62***	.67***	.46***
◆ Prenatal depression	100	13.40	1.90	.79	10-40	8-18	.11	-0.05	-	.50***	.40***	
◆ Postnatal anxiety	100	7.80	2.04	.90	10-40	4-11	-.10	-1.22		-	.71***	
◆ Postnatal depression	100	14.71	1.57	.76	10-40	12-19	.44	-.22			-	

\*\*\*p<.001.

**Table-2:** Linear regression analysis showing the effect of (a) prenatal anxiety and (b) prenatal depression on the prediction of postnatal anxiety and depression.

Predictor	(a) Outcomes: Postnatal anxiety			Predictor	(b) Outcomes: Postnatal depression		
	Model 1 B	95%CI, LL, UL			Model 1 B	95%CI, LL, UL	
(Constant)	3.91***	3.00, 4.82		(Constant)	10.16***	8.10, 12.21	
Prenatal anxiety	.61***	.47, .75		Prenatal depression	.34***	.90, .49	
R2	.45			R2	.17		
F	80.98***			F	19.72***		

\*\*\*p&lt;.001.

**Table-3:** Mean differences across gravida and age.

Variables (a)	Primary gravida (n = 50)		Multi gravida (n = 50)		t(98)	P	95%CI			Variables (b)	Adolescents (n = 50)		Early adults (n = 50)		t(98)	p	95%CI		
	M	SD	M	SD			LL	UL	Cohen's d		M	SD	M	SD			LL	UL	Cohen's d
Prenatal anxiety	4.60	1.34	8.14	1.47	12.65	.000	4.09	2.98	2.54	Prenatal anxiety	4.89	1.54	7.67	1.96	12.64	.000	3.49	2.07	1.57
Prenatal depression	12.16	1.46	14.46	1.43	8.59	.000	3.05	1.90	1.73	Prenatal depression	12.61	1.58	14.09	1.90	8.58	.000	2.17	.77	0.84
Postnatal anxiety	6.32	1.65	9.28	1.14	10.44	.000	3.52	2.40	2.11	Postnatal anxiety	6.78	1.93	8.69	1.71	10.44	.000	2.63	1.18	1.04
Postnatal depression	13.90	1.20	15.52	1.50	5.96	.000	2.16	1.08	1.20	Postnatal depression	14.21	1.47	15.15	1.54	5.96	.000	1.54	.33	0.90

which is greater than 0.70. The reliability analysis indicated that all scale satisfactory internal consistency therefore this scale is reliable to use in the study. (b) The value of skewness and kurtosis for all scale are less than +2 and -2 which indicated that data is normally distributed. (c) All variables have positive correlation (p<0.001).

(a) The R2value of 0.45 indicated that prenatal anxiety explained 45% variance in postnatal anxiety the results indicated that prenatal anxiety positively predicted postnatal anxiety. (b) The R2value of 0.17 indicated that prenatal depression explained 17% variance in postnatal depression.

Moreover the findings of paired sample t-test indicated significant mean differences on anxiety. Women exhibited higher scores on anxiety in prenatal period which subsequently decreased in the post-natal period. Findings indicated significant mean differences on depression. Results showed that women exhibited lower scores on depression in prenatal period which subsequently increased in the post-natal period. The value of Cohen's d shows low effect size for anxiety and high effect size for depression.

(a) Results showed that multi gravida exhibited higher scores on prenatal anxiety as compared to primary gravida. Multi gravida exhibited higher scores on prenatal depression as compared to primary gravida. Multi gravida exhibited higher scores on postnatal anxiety as compared to primary gravida. Multi gravida

exhibited higher scores on postnatal depression as compared to primary gravida. With numerical value multi gravida exhibited higher scores on postnatal depression (M = 15.52, SD = 1.50) as compared to primary gravida (M = 13.90, SD = 1.20).

(b) Early adults exhibited higher scores on prenatal anxiety as compared to adolescents. They also showed higher scores on prenatal depression than adolescents. Early adults also had higher scores on postnatal anxiety as compared to adolescents. Early adults also had higher scores on postnatal depression as compared to adolescents. Cohen's d values 2.54, 1.73, 2.11, 1.20 indicate high effect size for all variables.

## Discussion

The study intended to examine the effect of prenatal psychiatric symptoms on the prediction of postnatal psychiatric symptoms among pregnant women of primary and multi gravida. The results of the present research provide empirical evidence to the existing literature that prenatal psychiatric symptoms had significant positive correlation with postnatal psychiatric symptoms. The previous researches in Pakistan either focused on prenatal period or postnatal period. However the present study has integrated both periods and also investigated association between these periods. Our findings extended the previous literature results supporting that prenatal depression was the key interpreter for post-natal depression. In addition, some women with prenatal depression had

significant post-natal depression in the paramount year after delivery. The correlation findings also showed strong relationship between prenatal anxiety and depression with postnatal anxiety and depression. Prior research indicated that prenatal anxiety independently predicts postnatal anxiety and prenatal depression is the main predictor of postnatal depression.<sup>14</sup> Another study examined the prenatal psychiatric symptoms as predictor of postnatal psychiatric symptoms. According to their result, prenatal anxiety and depression are strongly related with postnatal anxiety and depression.<sup>14</sup>

The present research findings indicated that prenatal and postnatal psychiatric symptoms are high in multigravid mothers as compared to primigravid mothers. One study found that multigravid mothers had considerably lower maternal-foetal attachment scores than the primigravid mothers.<sup>15</sup> Women with current or past pregnancy/delivery complications, with a history of pregnancy loss, pregnancy terminations or still birth were found more likely to experience antenatal depression, anxiety and pregnancy-specific anxieties.<sup>16</sup> Despite the fact that multigravid women have had a previous pregnancy experience, the previous study findings proposed that multigravid women may face more challenges than their primigravid complements as they adjust to becoming a mother of a second child.<sup>17</sup> Of note is also that fear of childbirth and negative thoughts about the upcoming delivery have been associated with increased risk of antenatal anxiety and depression indeed. A study found that a negative experience of pregnancy was significantly associated with antenatal depression.<sup>18</sup>

This previous study supported the hypothesis that pregnant multigravid women are likely to exhibit higher scores on postnatal depression as compared to pregnant women of primary gravid.<sup>14</sup> Results showed that early adults exhibited higher scores on postnatal anxiety and depression as compared to adolescents.<sup>19</sup> Most recent studies have shown a reassuring safety profile for antidepressant treatment in pregnancy and have identified effective non-pharmacological treatments, although more research is still needed regarding the effectiveness of non-pharmacological interventions during pregnancy.<sup>20</sup>

### Limitation and suggestions

Women are not cooperative because in our country women are not referred to psychologists. Support mechanism (family) must be concerned about the health of women and not create stress for women like a wanted

unwanted child (gender disappointment) is a big issue in Pakistan. This is a highly significant clinical issue. The present study is important for the mental health of women in prenatal and postnatal period. This study can be used as a guideline for female mental health in prenatal period because prenatal health has long-lasting effects.

### Conclusion

The underlying assumptions of the present study is that prenatal psychiatric symptoms predict postnatal psychiatric symptoms which were supported by the findings through descriptive research design. Prenatal psychiatric symptoms predicted the postnatal psychiatric symptoms supported the study. According to the present study prenatal psychiatric symptoms have a long term effect on mothers in postnatal period if not properly treated. Thus in the light of the findings, it is important to note that if the pregnant women's mental health is not properly addressed in prenatal period, it could disturb the maternal health in postnatal period.

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**Conflict of Interest:** None

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