Original Article

Prioritizing Maternal Mental Health: A Study Of Prenatal Depression In Southern Punjab, Pakistan

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Abstract

Objective: To determine the prevalence of prenatal depression and investigate its associated socioeconomic, demographic, physical, and psychological characteristics among pregnant women in Southern Punjab, Pakistan.

Methodology: This cross-sectional study on prenatal depression was conducted from October 2024 to March 2025 in South Punjab tertiary care hospitals. The Edinburgh Postnatal Depression Scale (EPDS) with a cutoff of 11 was used to measure depression. Chi-square test was employed to identify significant associations ($p < 0.05$) between prenatal depression and various characteristics on SPSS 27.

Results: This study of 350 pregnant women in South Punjab found a high prevalence of prenatal depression (56.3% with a mean EPDS score of 11.61). Significant associations with depression ($p < 0.05$) included respondents' employment status (housewives higher), lower monthly income, husband's employment type (non-business higher), having children with special needs, experiencing husband's violence, feeling sad about the pregnancy, and experiencing pressure for a baby boy.

Conclusion: In conclusion, this study reveals that prenatal depression is linked to socioeconomic disadvantages (unemployment, lower income, husband's occupation), negative social experiences (husband's violence, pressure for a boy, negative attitudes), and pregnancy-related factors (having a child with special needs, negative feelings about the pregnancy).

Keywords: Depression, Domestic Violence, Substance Abuse, Maternal Health, Social Support.

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GF, SSS, AS, AW, SH, MQ - Acquisition, Analysis, Interpretation
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Introduction

Pregnancy is a time of pleasure and excitement to some women, while in others it is a phase of anxiety and stress. A woman experiences physiological, somatic, psychological and social changes during pregnancy. It can range from sadness to difficulty getting through the day. Some of the alarming features of adverse maternal health are depression, fatigue, insomnia, weight loss, decreased physical and cognitive functioning, loss of appetite, loss of pleasure in life, irritability, fear, anxiety, lack of interest and hopelessness.[1] Prenatal depression, or antenatal depression, is the depression occurring during pregnancy and is considered to be a Major Depressive Episode by the Fifth edition of the Diagnostic and Statistical Manual of Mental Disorders.[2] Depression during pregnancy is a rising public health issue that has detrimental effects on the health and welfare of women and their families. It has a strong association with postnatal depression, which is in turn a major predictor of mental health problems.[3] Two-thirds of postnatal depression cases can be anticipated based on prenatal depression, often during the third trimester of pregnancy.[4]

Maternal and child health care is one of the major global health priorities. Although there has been intense work to reduce physical causes of maternal and child mortality and morbidity, other contributing factors, such as maternal mental health, have received less attention.[5] Unfortunately, adverse mental health increases the risks of obstetric and child outcomes such as low birth weight, prematurity and increased risks of assisted births and lifelong maternal mental health issues.[6]

Global prevalence estimates of prenatal depression ranged from 15-65 %.[7] It varies across regions, such as 31.1% in Ethiopia, 20.7% in Turkey, and 8.5% in the USA and is generally high in low- and middle-income countries (LMICs). Variations exist due to socioeconomic, obstetric and measurement factors.[7] The prevalence rate of antenatal depression of 8.8% and 18.5% reported at community and medical facilities in India.[1] The associated factors found out are exposure to different forms of abuse and violence, lack of spouse support and family history of mental disorders. Savard J, Pauck et al., conducted a study in Finland and found out that among 511,938 women, 0.8% experienced major depression during pregnancy, which can lead to self-harm and suicide. They also linked the development of prenatal depression with fear of childbirth, advanced

maternal age, single marital status, smoking, prior pregnancy terminations, anaemia and gestational diabetes.[8]

Prenatal depression is a major public health concern in the Pakistani populace, as evident in the literature. Padhani ZA, Salam RA et al., studied the prevalence of prenatal depression in Quetta city, Pakistan. Moderate depression was found in pregnant women of Quetta (mean score 9.51 +/-2.55).[9] In this study, 65.2% of respondents felt tense occasionally, and 52 % didn't feel cheerful during pregnancy. They highlighted age as a predictor of anxiety and depression. Gul and Muneeb studied pregnant women in Mardan and found severe depression, 11.3% very severe depression, among 9.4% of pregnant women. Levels of depression and anxiety were highest among women in the third trimester. Other studies demonstrated a prevalence of prenatal depression of 51.6% and 37% in Faisalabad and Lahore, respectively. [10,11]

Even though the developing world reports the highest prevalence rates for prenatal depression, most high-quality research has been conducted in high-income countries. Although several studies have presented prevalence estimates of perinatal depression in Pakistan, many are limited to urban regions and hospital settings, with little data reported from areas like Southern Punjab. This lack of research is concerning, as prenatal depression can lead to postnatal depression, negatively influencing family systems and the well-being of both mother and child. Therefore, this research was conducted in Southern Punjab, Pakistan, to study the socioeconomic, demographic, physical, and psychological characteristics of pregnant women in the region; determine the prevalence of prenatal depression among these women; and investigate the contributing factors of prenatal depression. This research provides an estimate of the problem, informs the development of healthcare policies, and promotes the prevention of risk factors. Currently, healthcare programs primarily focus on the physical and nutritional aspects of maternal care; this study contributes to addressing this gap by highlighting maternal mental health problems and emphasising the need for integrated care.

Materials And Methods

This analytical cross-sectional study was conducted in tertiary care hospitals in various cities in South Punjab, including Multan, Rahim Yar Khan, Rajanpur, and Vehari. The study was continued from October 2024 to March 2025. The sample size was calculated using the previous prevalence of 12. The cutoff value was taken as 11 to avoid false negative results, with a maximum sensitivity of 81 81 81 81% and specificity of 88% and including all participants who might meet diagnostic criteria based on further evaluation. Prenatal depression was measured using the Edinburgh Postnatal Depression Scale (EPDS), keeping 11 as the cut-off where scores on the Edinburgh Postnatal Depression Scale (EPDS) ranged from 0 to 28. Bivariate analysis using chi-square was done to find the association of prenatal depression with various socio-demographic, physical, psychological and obstetrical characteristics of the respondents. The table below presents only those variables that demonstrated a statistically significant association with prenatal depression ($p < 0.05$).

Results

This study included 350 pregnant women visiting the OPD for prenatal checkups. More than half of the participants, 197(56.3%), were suffering from prenatal depression with a mean score of 11.61 (SD = 6.352). The participants' ages ranged from 18 to 37, with a mean of 26.79 (SD = 3.908). The total number of family members ranged from 1 to 12, with a mean of 6.30 (SD = 2.577). Table 1 gives the participants' sociodemographic features.

The mean gestational age of the participants was 25.2 (8.254). Participants had between 0 and 7 children (M = 1.97, SD = 1.380), and the total number of children with congenital anomalies or disabilities ranged from 0 to 3 (M = 0.06, SD = 0.315). The number of past abortions ranged from 0 to 4 (M = 0.44, SD = 0.746), normal deliveries from 0 to 8 (M = 1.03, SD = 1.402), and Cesarean sections from 0 to 6 (M = 1.09, SD = 1.271). The total number of children alive ranged from 0 to 6 (M = 1.91, SD = 1.372), and the total number of children who had died ranged from 0 to 7 (M = 0.21, SD = 0.700). Weeks of gestation ranged from 8 to 41 (M = 25.25, SD = 8.254). Pregnancy-related factors are discussed in Table 2.

The majority of women and their husbands were happy with the current pregnancy,82% and 87% respectively. The behaviour and physical appearance of the respondents were good in the majority of the respondents, 79.4% and 54% respectively. Behaviour and physical appearance were normal in 17.7 % and 41.1 % respectively, and they were bad in 2.9 % (10/350) and 4.9%(17/350) respectively.

Factors associated with prenatal depression:

Bivariate analysis using chi-square was done to find the association of prenatal depression with various socio-demographic, physical, psychological and obstetrical characteristics of the respondents. The table below presents only those variables that demonstrated a statistically significant association with prenatal depression ($p < 0.05$).

Table 1: Socio-demographic Characteristics of the Study Participants (n=350)

Characteristic	Category	Frequency (n)	Percentage (%)
Residence	Urban	217	62.0
	Rural	133	38.0
Marital Status	Married	350	100.0
Education Level	Illiterate	49	14.0
	Primary	47	13.4
	Secondary	108	30.9
	Tertiary and above	146	41.7
Respondent Occupation	Government Employee	32	9.1
	Private Employee	22	6.3
	Labourer	3	0.9
	Livestock/Agriculture	5	1.4
	Housewife	286	81.7
	Other	2	0.6
Household Monthly Income	Up to 10,000	4	1.1
	11,000-30,000	34	9.7
	31,000-50,000	97	27.7
	51,000 and Above	207	59.1
	Not Known	8	2.3
Husband's Occupation	Agriculture/Livestock	20	5.7
	Government Employee	203	58.0
	Private Employee	45	12.9
	Business	24	6.9
	Labourer	54	15.4
	Unemployed	4	1.1

Table 2: Pregnancy History and Related Factors (n=350)

Variable	Category	Frequency (n)	Percentage (%)
Obstetrical History			
Total Number of Children	No child	81	23.1
	1-3 children	232	66.3
	More than 3 children	37	10.6
Children with Congenital Anomalies and Disabilities (Special Children)	None	335	95.4
	1 or more	15	4.3
Past Abortions	None	243	68.9
	1 or more	109	31.1
Total Number of Normal Deliveries	2 or fewer	284	81.1
	More than 2	66	18.9
Total Number of Children Died After Birth	None	306	87.4
	1 or more	44	12.6
Current Pregnancy Information:			
Gestational Age at Study	First Trimester	25	7.1
	Second Trimester	165	47.1
	Third Trimester	160	45.7
Pregnancy Planning	Planned (Desired)	182	52
	Unplanned	168	48
Pressure for Baby Boy	Yes	68	19.4
	No	282	80.6
Drug Addiction and Abuse	Involved	24	6.9
	Not Involved	326	93.1
Stressful Life Events (Last Year)	Yes	101	28.9
	No	249	71.1

Table 3: Correlates of prenatal depression. (n=350)

Factor	Category	Non-Depression n (%)	Depression (%)	Total n (%)	p-value
Employment Status of Respondent	Employed	43 (54%)	36 (45%)	79 (100%)	**0.02**
	Non-employed (Housewife)	110 (40.5%)	161 (59.5%)	271 (100%)	

Monthly Income (PKR)	Up to 10,000	0 (0%)	8 (100%)	8 (100%)	**0.041**
	11,000-30,000	10 (30%)	23 (69%)	33 (100%)	
	31,000-50,000	47 (49.0%)	49 (51%)	96 (100%)	
	51,000 and above	96 (45%)	117 (54%)	213 (100%)	
Husband's Occupation	Employed (Government/Private)	45 (32.40%)	94 (67.7%)	139 (100%)	**0.01**
	Businessman	93 (53%)	82 (47%)	175 (100%)	
	Labour	15 (41.7%)	21 (58.3%)	36 (100%)	
Special Children	None	152 (45.5%)	182 (54.5%)	334 (100.0%)	**0.003**
	1 or more	1 (6.7%)	14 (93.3%)	15 (100.0%)	
Husband's Violence	No	151 (45.6%)	180 (54.4%)	331 (100.0%)	**0.003**
	Yes	2 (10.5%)	17 (89.5%)	19 (100.0%)	
Feelings About Pregnancy	Happy	144 (49.8%)	145 (50.2%)	289 (100.0%)	**0.000**
	Sad	9 (14.8%)	52 (85.2%)	61 (100.0%)	
Pressure for Baby Boy	Yes	20 (29.4%)	48 (70.6%)	68 (100.0%)	**0.008**
	No	133 (47.2%)	149 (52.8%)	282 (100.0%)	

Discussion

Prenatal depression is a significant mental health problem during pregnancy in women's lives. Women in Pakistani society are not fully aware of this problem due to poor literacy levels and cultural restrictions. A high prevalence of prenatal depression (56.3%) in this study reveals that it prevails in Pakistani society, but women and health care workers are unaware of its presence. This is close to the prevalence found in a study in Punjab, which demonstrated a prevalence of prenatal depression of 51.6% and 37% in Faisalabad,[13] and Lahore,[14] and respectively. The level of prevalence is slightly less than that found in Quetta.[15] This level of depression is according to the established range of global prenatal depression, 15 to 65 % as estimated by Dadi and Miller in 2020.[16] The screening for women with depression and associated risk factors is important for offering preventive and curative services.[17]

In the current study, 350 pregnant women were studied, belonging to different socio-demographic backgrounds. The majority of the participants belonged to urban areas of Southern Punjab 62 % as compared to rural areas, 38%. The comparison of prenatal depression with respondents' age revealed that 57 % of depression was found in the age group less than 25 years. It was almost the same as in the age group 25-30 years and above 30 years of age, being 56 % and 54 % respectively. Regarding employment status, depression was more prevalent in housewives (59 .5%) as compared to employed women (45%). While employed women were free of depression as compared to housewives, 54% vs 40.5 % (p-value 0.02). Women with primary education were more depressed (66 %) as compared with women with a higher level of education (54%). It favours the results of the study conducted in 2022 by Chen et al., which concluded that increasing age and employment status, literacy level and no gender preferences by the spouse were protective factors for depression.[18]

High levels of depression were found in low-income groups, 100 100 100 100% and 69% in up to 10,000 and 11,000 to 20,000 groups, respectively. While the monthly income group of 21,000 to 30,000 was the least depressed group, 49 49 49 49%. The findings of our study showed that low income is significantly associated with increasing prevalence of depression (p-value 0.04). Bahoo and his colleagues studied the association of the financial situation of pregnant women with antenatal depression in 2016 and found it to be significant.[19]

The employment status of husbands showed that wives of those in government or private jobs were depressed 67.7% as compared to those pregnant women whose husbands were running their own business (47%). The wives of labourers involved in daily income-based jobs were least depressed (58.3%). The association between the employment status of husbands and depression in pregnant females was found to be significant p-value of 0.01. A similar study was conducted by G. R. Babu and his colleagues in 2018 and found that women with financial stress from their husbands' jobs were more likely to be depressed.[20]

The level of depression is less in more than 5 family member groups, being 53% as compared to less than 5 member groups, that is 59.9%. M. C. Míguez and M. B. Vázquez conducted a similar study in 2021 and found that extended families were a protective factor for depression.[21]

The women with one or more children with disability or congenital anomaly were found to be more depressed (93.3%) as compared to women having no such child (54.5%). The association between them was found to be significant p p-value 0.003, and supports findings of the same research as conducted in India by S. Jyothi Kantipudi and his colleagues.[22] Among 109 who had previous abortions, 67 (61.5%) had suffered from depression. The total number of women with more than 2 previous normal deliveries was 66 out of 350. Depression was found in 54.5 % of them, while 45.5 % were free of depression. The group with two or less number of abortions has only 56.7% of depression as compared to 43.3% non-depressed cases. V. Nisarga and colleagues concluded that women with a bad obstetrical history were more prone to depression in India.[23]

Mother's feelings play a significant role in determining the development of mental health problems. Many women in the current sample were not happy with the ongoing pregnancy and were found to be depressed, 52 out of 61(85.5%), as compared to 145 (50.2%) of the women happy with the current pregnancy. The association between maternal happiness is highly significant with depression outcome (p value 0.000). H. Tobe and colleagues found out that mothers in stressed and angry during pregnancy were more depressive, and finding ways to increase resilience in them can prevent depression.[24] The preference for gender by husbands

or in-laws causes depression in pregnant mothers. Out of 68 women who faced gender preference pressure, 70.6 % were found to be depressed (p-value 0.000), which is in favour of a study conducted in Iran.[25]

Conclusions

This study identified several key factors associated with prenatal depression. Prenatal depression is associated with a complex interplay of factors. Women who are not employed, have lower incomes, or whose husbands have less desirable occupations are more likely to experience prenatal depression, highlighting the role of socioeconomic disadvantages. Negative social and interpersonal experiences, including husband's violence, pressure for a baby boy, and negative husband attitudes, are also strongly associated with depression. Additionally, having a child with special needs and reporting negative feelings about the pregnancy increases the likelihood of prenatal depression.

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