

# Comparison of Depression, Anxiety and Stress with Quality of Life among Pregnant Women

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## ABSTRACT

The study aimed to find the correlation and prediction of depression, anxiety, stress and quality of life in pregnant women in a local setup. Co-relational research design and purposive sampling were used. Data included 106 pregnant women with an average age of 31 years. Co relational analysis revealed that depression, anxiety and stress were significantly negatively related to the quality of life. Moreover, regression analysis found that depression inversely predicted quality of life. Study has significant implications for couple counseling and marital therapy in order to increase the psychological health of females and to protect newborn babies and pregnant mothers from the effects of psychological distress.

**Keywords:** depression stress, anxiety, quality of life, pregnant women

## INTRODUCTION

Child's birth is a significant life event that is filled with expectation, pleasure, and excitement. On the other hand, transitioning to new expectations, duties, obligations, and transformations in relationships, may be difficult<sup>1</sup>. From the time of conception, health of the mother is the most important factor in the optimal growth and development of a child. However, pregnancy-related anxieties may disrupt the well-being of the mother<sup>2</sup>. Even milder kinds of maternal distress during pregnancy have shown to impact the fetus, with long-term implications for newborn and child development. The mechanisms by which prenatal distress of the mother affects the unborn child are yet unknown<sup>3</sup>.

Several types of researches have shown that poor psychological health has long-term negative effects on children's health. Previous research on pregnant women in Pakistan found that up to 70% of them had prenatal psychological discomfort and emotional disturbances<sup>4</sup>. Premature delivery, low birth weight, poor neurodevelopment, and lowered intelligence are all indications that psychological distress can contribute to negative birth and child outcomes<sup>5,6</sup>.

In Pakistan, a significant frequency of prenatal mental health issues has been recorded. General stress, depressive symptoms, anxiety, or enduring a traumatic life experience are all examples of psychological discomfort<sup>7</sup>. Weight growth, psychological well-being (PWB), and body image are all linked to distress. Pregnant women face a variety of stressors depending upon their situation. Acute (e.g., trauma) or chronic (e.g., everyday difficulties) stress may occur during pregnancy, and each form of stress has varying degrees of severity.

Mood problems such as depression and anxiety are rather frequent during pregnancy. Preterm delivery, higher birth-related difficulties, and lower birth weight, as well as longer-term health consequences on the kids, have all been associated to mother distress in studies<sup>9</sup>. Maternal discomfort during pregnancy may have long-term consequences for the infant's cognitive development, as well as an increased chance of behavioral issues. Self-reported anxiety and depression in mothers have been linked to internalizing behaviors in young children, and the degree of maternal depression during pregnancy has been linked to an increased chance of problematic behaviors in early childhood. It has been seen that both increased levels of perceived and objective prenatal stress is associated with high risk of mild childhood psychiatric disorder<sup>10</sup>.

Several biological, physiological, and morphological changes take place in a woman's body during pregnancy<sup>11</sup>. These changes are beyond their control and are seen as the first signs that a woman is becoming physically and emotionally vulnerable<sup>12</sup>. Even

in a normal pregnancy, these changes may have an impact on a woman's capacity to accomplish her daily tasks. In other words, not only will there be a lot of changes in terms of social, physical, and mental health during this time, but the quality of life (QoL) for pregnant women will be altered as well. Various characteristics of physical, social, and mental well-being that are quantifiable during pregnancy make up life quality<sup>13</sup>.

QOL is a wide term that encompasses a person's level of independence, psychological well-being, physical health, and social and familial interactions<sup>14</sup>. The WHO defines QoL as an individual's view of their place in life in relation to their objectives, ambitions, goals, and concerns within the values and customs in which they live. People's physical health, psychological condition, amount of autonomy, social interactions, and relationships to conspicuous aspects in the environment all play a role in this wide term<sup>15</sup>. Researchers discovered that women with low QOL tend to have pregnancy complications<sup>16</sup>, as well as premature birth<sup>17</sup> and low birth weight.

However, studies on QOL tended to focus on the elderly instead of pregnant women, and the impact on pregnant women's QOL was undervalued in Pakistan. Even though QoL plays an important role in pregnant women's health, there is little study on pregnant women's QoL in Pakistan. Given that people's perceptions of life quality are influenced by their beliefs and cultures, the current study appears to be critical in the context of Pakistan. As a result, the authors opted to measure pregnant women's QoL in this context in the hopes that the findings could be utilized to improve women's support during pregnancy, which might be a step forward in "For a baby to be healthy, it needs a healthy mother"

**Objectives:** To measure the correlation and prediction of depression, anxiety, stress and QoL in pregnant women.

## MATERIALS AND METHODS

The study was carried out at the Department of Obstetrics and Gynaecology, Rashid Latif Medical College Lahore. Correlational research design and probability sampling were used for the study.

**Sample Size:** A sample size of 150 pregnant women were approached. However, the current study includes only 106 cases, the rest of the cases were discarded based on exclusion criteria.

**Inclusion and Exclusion Criteria:** Pregnant women of age 14 – 45 year in any stage of the trimester. Both educated and illiterate were included with any type of past deliveries i.e. normal and C-section in multi-gravida. Exclusion criteria included pregnant women with any associated general medical condition, e.g., HTN, Diabetes, Epilepsy TB, Hepatitis, Hyperthyroidism, and Hypothyroidism. Previously diagnosed cases of other psychiatric

co-morbidities such as schizophrenia, bipolar disorder, dissociative disorder, the obsessive compulsive disorder were assessed clinically according to DSM V diagnostic criteria. Respondents who had a history of substance abuse such as opioids, cannabis, alcohol, hypnotics, and stimulants were removed from the study as well. Any history of associated intellectual disability or complications in current pregnancy such as placenta previa, eclampsia, polyhydramnios, gestational diabetes, etc. were not included in the study either.

**Sample Characteristics:** Pregnant women were recruited via purposive sampling. The sample consisted of 106 respondents with a mean age of 31 years and the average age of their spouse was 35 years. The average no. of children they have was 1.63. The respondents, on average, had a total house income of around 2.3 lakh. All participants were Muslim and reported satisfactory relationships with their spouses. Majority of the participants were living in a nuclear family system (n=61). Many participants reported no complications during their recent pregnancy (i.e.n=81). Many respondents reported subjective feeling of being depressed (n=61) and anxiety (n=56), however, no feeling of stress (n=62) during their recent pregnancy. Most of the participants (n=66) reported no history of miscarriages. However, some (n=40) did report a history of miscarriage in their past pregnancy.

Table 1: Frequencies and percentages of demographic variables of participants (N=106)

Demographic	M(S.D)	f(%)
Age	31.34 (4.78)	
No. of children	1.63(1.38)	
Age of husband	35 (4.68)	
Total income	233295.36 (336597.83)	
Duration of marriage		
Less than 2		26(24.5)
2-3		10 (9.4)
4-5		13 (12.3)
6-7		10 (9.4)
8-9		19 (17.9)
10 or more		28 (26.4)
Family system		
Nuclear		61 (57.5)
Joint		45 (42.5)
Do you have any complication during recent (current) pregnancy		
Yes		25 (23.6)
No		81 (76.4)
Do you have any depression during recent (current) pregnancy		
Yes		61 (57.5)
No		45 (42.5)
Do you have any anxiety during recent (current) pregnancy		
Yes		56 (52.8)
No		50 (47.2)
Do you have any stress during recent (current) pregnancy		
Yes		44 (41.5)
No		62 (58.5)
Have you had any miscarriage in the past		
Yes		40 (37.7)
No		66 (62.3)

**Ethical Consideration:** All ethical considerations were considered during the research. Permission was taken from different concerned authorities and authors of measures. The informed consent form was filled out by the participant with a signature. No psychological harm was given to participants. In case of psychological harm, counseling was provided to them. The participants were ensured that they had the right to know the findings of the research and they had the right to withdraw from research without permission.

**Data Collection:** The study was started after approval from the ethical committee of the hospital. A total of 150 patients were enrolled for study from the indoor and outdoor units of the department of obstetrics and gynecology. However, only 106 participants who fulfilled inclusion and exclusion criteria were retained. Each patient was told about the study's purpose and gave their informed consent to participate. Each participant was questioned in a private, comfortable location. All patients were assessed on the following pattern. Demographic details like name, age, education, religion, occupation, height and weight, vital signs, number of pregnancies, number of children, socio-economic status, family system and address were noted. A past History of depression, anxiety and stress, along with depression, anxiety, and stress during previous pregnancies, if any, with or without treatment, was obtained from the patient on a Performa. Names and demographic details of the patients were replaced by fictitious names and details.

**Research Instruments**

**Depression, anxiety and stress scale (DASS; Lovibond & Lovibond, 1995):** Depression, anxiety, and stress scale 21 is the short of 42-item self-reported measures of depression, anxiety, and stress. Items were rated on 4 points Likert Scale (0=does not apply to me, 3=apply to me very much, or most of the time). The higher scores represent higher psychological distress<sup>19</sup>. The coefficient alpha for this instrument for the present sample was .96.

**Quality of Life (QOL) scale (Burckhardt et al., 1989):** It is a 16-item instrument that measures five conceptual domains of quality of life<sup>20</sup>: material and physical wellbeing; relationships with other people, social, community, and civic activities; personal development and fulfillment; independence, and recreation. The item was rated on a 7 point likert scale from "delighted" to "terrible". The calculated coefficient alpha of this instrument for the present sample was .93.

**Statistical Analysis:** The data was entered and analyzed using SPSS version 25. Quantitative variables such as age (in years) were presented as mean ± standard deviation (S.D). Qualitative data like demographics (sex; male or female) were presented as frequency distributions and percentages.

The Data were analyzed using correlation and regression. Co-relation was assessed by using demographic and main variables.

**RESULT**

Table 2: Relationship between demographic variables depression, anxiety, and stress with QoL among pregnant women.

Variables	N	M	S.D	1	2	3	4	5	6
1. Age	106	31.34	4.78	-					
2. No of children	106	1.63	1.38	.45**	-				
3. Depression	106	5.23	5.07	-.10	.00	-			
4. Anxiety	106	4.82	5.07	-.02	.04	.86**	-		
5. Stress	106	6.62	5.08	-.07	-.06	.86**	.83**	-	
6. QoL	106	87.98	15.62	-.01	.03	-.34**	-.40**	.35**	-

Note: M= Mean, S. D.= Standard Deviation  
\*\*p<.01 (one tailed) \*p<.05 (one tailed)

The results of the Pearson product-moment correlation analysis (Table 2) showed that depression, anxiety, and stress were found to be significantly negatively associated with QoL. This showed that pregnant women who experience higher psychological distress, i.e., symptoms of depression, anxiety, and stress, tend to have a lower QoL. i.e., they tend to have weak independence levels, psychological states, physical health, and experience disturbances in their social and family relationships.

The above table shows the role of anxiety, depression, and stress in QoL in pregnant women. The R<sup>2</sup> Value of .16 showed that the predictors explained 16% variance in the outcome variable with F (3, 100) = 6.49, p < .00. Results also showed that depression (β = -.37, p <.05), negatively predicted psychological wellbeing, which

means that high depression in pregnant females can be accountable for a significant negative experience of QoL.

Table 3: Linear Regression predicting quality of life among pregnant women (N=106).

Variable	B	95% CI	SEB	$\beta$	R <sup>2</sup>	$\Delta R^2$
Anxiety	1.49	[-1.13, 1.42]	.64	.04	.16	.16***
Depression	-1.16	[-2.34, .01]	.59	-.37*		
Stress	-.23	[-1.42, .92]	.59	-.08		

Note. \*p<.05; \*\*p<.01; \*\*\*p<.001;  $\beta$  = Standardized Coefficient; R<sup>2</sup> = R Square

## DISCUSSION

Pregnancy is a period in a woman's life during which she undergoes physiological, psychological, hormonal, and social changes. While seeking to adjust to these changes, the chances of emotional disturbance and psychological distress during pregnancy may increase. Anxiety, worry, sorrow, melancholy, and frustration are common unpleasant feelings and mood states associated with these problems. During the perinatal period, moms with common mental illnesses may be less able to care for their health or mobilize social support; in addition, studies have shown that infants born to depressed mothers have a higher chance of poor physical growth<sup>21</sup>. In addition, Southeast Asian studies have found that women with mental illnesses, particularly depression, tend to have babies with low birth weight and stunted growth in early childhood<sup>22, 23</sup>.

The results supported the first hypothesis, and an inverse relationship was found between depression, anxiety, and stress with QoL. These results are evident from literature as well, as up to 25% of women feel stress, sadness, or anxiety throughout pregnancy and postpartum period.<sup>24</sup> The QoL is influenced by lifelong stress, according to the research<sup>25</sup>. Another study found that those who were stressed had a higher chance of having a poor quality of life than those who were not stressed at all<sup>26</sup>. In comparison to the control group, women with a previous bad prenatal record had lower QOL and increased levels of anxiety, sadness, and stress.

Moreover, the study also found that depression is a significant negative predictor of quality of life. The result is supported by previous literature as the variables that contribute to women's sensitivity to depression may differ in developing and developed countries. When working-class women in industrialized nations are subjected to a traumatic life experience, social variables such as a lack of a confidante, the presence of three or more small children at home, the death of a mother during infancy, and joblessness have been proven to raise the risk of depression. Poverty and a lack of education have been linked to depression in several research conducted in underdeveloped nations, suggesting that these variables may be more relevant than key risk factors<sup>27</sup>.

According to a survey, a larger percentage of Pakistani women (48.4%) suffer from depression than their Aboriginal (31.2%) and Caucasian (8.6%) counterparts<sup>28</sup>. The high frequency of depression among Pakistani women who are pregnant is a public health problem. Unfavorable patterns of healthcare seeking for mothers and their children are exacerbated by maternal depression symptoms. Low birth weight and poor health outcomes in children have been linked to depression during pregnancy<sup>29</sup>. Social standards, cultural customs, and relationships with in-laws may all have a part in women's mental health in Pakistan<sup>30</sup>. The present study has significant implications for couple counseling and marital therapy, to increase the psychological health of females and to protect newborn babies and pregnant mothers from the effects of psychological distress.

## REFERENCES

- Walker LO, Xie B, Hendrickson SG, Sterling BS. Behavioral and psychosocial health of new mothers and associations with contextual factors and perceived health. *Journal of Obstetric, Gynecologic & Neonatal Nursing*. 2016 Jan 1;45(1):3-16.
- Dunkel-Schetter C. Psychological science on pregnancy: Stress processes, biopsychosocial models, and emerging research issues. *Annu Rev Psychol*. 2011;62:531–58.
- Zietlow A, Nonnenmacher N, Reck C, Ditzgen B, Müller M. Emotional Stress During Pregnancy-Associations With Maternal Anxiety Disorders, Infant Cortisol Reactivity, and Mother-Child Interaction at Pre-school Age. *Frontiers in Psychology*. 2019;10:2179. doi=10.3389/fpsyg.2019.02179.
- Isgut M, Smith AK, Reimann ES, Kucuk O, Ryan J. The impact of psychological distress during pregnancy on the developing fetus: biological mechanisms and the potential benefits of mindfulness interventions. *Journal of perinatal medicine*. 2017 Dec 1;45(9):999-1011.
- Walker LO, Xie B, Hendrickson SG, Sterling BS. "Behavioral and psychosocial health of new mothers and associations with contextual factors and perceived health," *Journal of Obstetric, Gynecologic & Neonatal Nursing*. 2016; 45, 1: 3–16.
- Rahman A, Surkan PJ, Claudina E, Cayetano CE, Rwagatare P, Dickson KE. Grand challenges: Integrating maternal mental health into maternal and child health programmes. *PLoS Med*. 2013;10(5):1–7.
- Walker, LO, Murphey CL, Nichols F. "The broken thread of health promotion and disease prevention for women during the postpartum period," *The Journal of Perinatal Education*, 2015; 24, 2:81–92.
- Vehmeijer FO, Balkaran SR, Santos S, Gaillard R, Felix JF, Hillegers MH, El Marroun H, Jaddoe VV. Psychological distress and weight gain in pregnancy: A population-based study. *International journal of behavioral medicine*. 2020 Feb;27(1):30-8.
- Shah SM, Bowen A, Afridi I, Nowshad G, Muhajarine N. Prevalence of antenatal depression: comparison between Pakistani and Canadian women. *JPMA-Journal of the Pakistan Medical Association*. 2011 Mar 1;61(3):242.
- Yamada M, Tanaka K, Arakawa M, Miyake Y. Perinatal maternal depressive symptoms and risk of behavioral problems at five years. *Pediatric Research*. 2021 Aug 31:1-7.
- Tan SY, Yip A. Hans Selye (1907–1982): Founder of the stress theory. *Singapore medical journal*. 2018 Apr;59(4):170.
- Burckhardt CS, Woods SL, Schultz AA, Ziebarth DM. Quality of life of adults with chronic illness: a psychometric study. *Research in nursing & health*. 1989 Dec;12(6):34754.
- Bellido-González M, Robles-Ortega H, Castelar-Ríos MJ, Díaz-López MA, GalloVallejo JL, Moreno-Galdó MF, de Los Santos-Roig M. Psychological distress and resilience of mothers and fathers with respect to the neurobehavioral performance of small-for-gestational-age newborns. *Health and quality of life outcomes*. 2019 Dec;17(1):1-3.
- Patil DM, Bajaj A, Supraja TA, Chandra P, Satyanarayana VA. Lifetime traumatic experiences and postpartum depressive symptoms in a cohort of women in South India. *Archives of Women's Mental Health*. 2021 Feb 27:1-6.
- Gholami A, Jahromi LM, Zarei E, Dehghan A. Application of WHOQOL-BREF in measuring quality of life in health-care staff. *International journal of preventive medicine*. 2013 Jul;4(7):809.
- Moyer CA, Ekpo G, Calhoun CL, Greene J, Naik S, Sippola E, Stern DT, Adanu RM, Koranteng IO, Kwawukume EY, Anderson FJ. Quality of life, optimism/pessimism, and knowledge and attitudes toward HIV screening among pregnant women in Ghana. *Women's Health Issues*. 2008 Jul 1;18(4):301-9.
- Wang P, Liou SR, Cheng CY. Prediction of maternal quality of life on preterm birth and low birthweight: a longitudinal study. *BMC pregnancy and childbirth*. 2013 Dec;13(1):1-1.
- Lagadee N, Steinecker M, Kapassi A, Magnier AM, Chastang J, Robert S, Gaouaou N, Ibanez G. Factors influencing the quality of life of pregnant women: a systematic review. *BMC pregnancy and childbirth*. 2018 Dec;18(1):1-4.
- Lovibond PF, Lovibond SH. The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour research and therapy*. 1995 Mar 1;33(3):335-43.
- Burckhardt CS, Woods SL, Schultz AA, Ziebarth DM. Quality of life of adults with chronic illness: a psychometric study. *Research in nursing & health*. 1989 Dec;12(6):34754.
- Surkan PJ, Kennedy CE, Hurley KM, Black MM. Maternal depression and early childhood growth in developing countries: systematic review and meta-analysis. *Bulletin of the World Health Organization*. 2011;89:607-15.
- Wachs TD, Black MM, Engle PL. Maternal depression: a global threat to children's health, development, and behavior and to human rights. *Child Development Perspectives*. 2009 Apr;3(1):51-9.

23. Prost A, Lakshminarayana R, Nair N, Tripathy P, Copas A, Mahapatra R, Rath S, Gope RK, Rath S, Bajpai A, Patel V. Predictors of maternal psychological distress in rural India: A cross-sectional community-based study. *Journal of affective disorders*. 2012 May 1;138(3):277-86.
24. Kingston D, Tough S, Whitfield H. Prenatal and postpartum maternal psychological distress and infant development: a systematic review. *Child Psychiatry & Human Development*. 2012 Oct;43(5):683-714.
25. Shishehgar S, Dolatian M, Majd HA, Bakhtiary M. Perceived pregnancy stress and quality of life amongst Iranian women. *Global journal of health science*. 2014 Jul;6(4):270.
26. Schneiderman N, Ironson G, Siegel SD. Stress and health: psychological, behavioral, and biological determinants. *Annu. Rev. Clin. Psychol.*. 2005 Apr 27;1:607-28.
27. Husain N, Gater R, Tomenson B, Creed F. Social factors associated with chronic depression among a population-based sample of women in rural Pakistan. *Social psychiatry and psychiatric epidemiology*. 2004 Aug;39(8):618-24.
28. Shah SM, Bowen A, Afridi I, Nowshad G, Muhajarine N. Prevalence of antenatal depression: comparison between Pakistani and Canadian women. *JPMA-Journal of the Pakistan Medical Association*. 2011 Mar 1;61(3):242.
29. Hatcher S, Coupe N, Wikiriwhi K, Durie M, Pillai A. Te Ira Tangata: a Zelenrandomised controlled trial of a culturally informed treatment compared to treatment as usual in Māori who present to hospital after self-harm. *Social psychiatry and psychiatric epidemiology*. 2016 Jun;51(6):885-94.
30. Khan MN, Chiumento A, Dherani M, Bristow K, Sikander S, Rahman A. Psychological distress and its associations with past events in pregnant women affected by armed conflict in Swat, Pakistan: a cross sectional study. *Conflict and health*. 2015 Dec;9(1):10.