



RESEARCH PAPER

**Stress, Anxiety and Depression Risk Factors for Preterm Birth
among Women**

Dr. Sonia Shagufta¹ Zanib Rehman² Nighat Gul³

1. Head of the Department, Department Psychology, Shaheed Benzir Bhutto Women Peshawar KP Pakistan
2. BS Scholar, Department Psychology, Government Girls Degree College No 2 Haripur KP Pakistan
3. Lecturer, Department Psychology, Government Girls Degree College No 2 Haripur KP, Pakistan

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ABSTRACT

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***Corresponding
Author**

nighatayub12345@
gmail.com

Indent of this study was to investigate the psychological risk factor of preterm birth among pregnant women. There were applied three self-rated scales Zung Depression Self-Assessment Scale (ZDS), Zung Self-Rated Anxiety Scale (ZAS) and Perceived Stress. For current research clinical sample was (n=100) and (n=100) normal women accessed for collecting required data from preterm birth and non-preterm birth women. Present study research design was cross sectional was adopted for measuring required subject matter. For statistical analysis internal applied descriptive statistics t-test, one way anova and regression. There was assumed stress, depression and anxiety are the predictors of preterm birth among women with demographic characteristics differences. Regression analysis indicating $P < .0001$ thus depression, anxiety, and stress are significant risk factors for preterm birth among women. There is significant difference in level of depression, anxiety and stress among preterm birth women family system wise. Current study findings are indicating depression, anxiety and stress prevalence was higher among preterm birth women rather than normal women.

Introduction

The connection among depression, anxiety and stress all through being pregnant might also disclose both mom and infant to many mental dangers, along with an impaired bonding with the fetus and with the brand new-born, extended hazard of bad psychological postnatal adjustment, postnatal melancholy, and physiological results, which include low beginning weight, intra-uterine increase restrict, and preterm birth. Melancholy, anxiety and strain can also make a contribution in extraordinary ways to ptb, activating unique pathways inside the procedure. The comorbidity of despair, tension and strain can also pose a fair higher danger for ptb. The results of depression, tension and stress as person and as mixed exposures. Anxiety, depression and strain in being pregnant are hazard elements for unfavourable final results from mothers and youngsters. Tension in pregnancy is

related to shorter gestation and has destructive implications for fetal neurodevelopment and infant consequences. Anxiety approximately a selected being pregnant is especially powerful, continual pressure, exposure to racism, and depressive signs in mothers for the duration of being pregnant are related to lower delivery weight babies with effects for toddler improvement (glencoe et al., 2016). Preterm is defined as babies born alive earlier than 37 weeks of being pregnant are finished. There are sub-classes of preterm beginning, based totally on gestational age. Extremely preterm (much less than 28 weeks), very preterm (28 to 32 weeks), mild to late preterm (32 to 37 weeks). Induction or caesarean start should now not be planned before 39 completed weeks until medically indicated. Toddlers need a full term within the womb to develop. If they are born too early, they may now not completely expand. This will purpose extreme health troubles. Premie babies have a tendency to have coronary heart, mind, lung or liver problems (liu et al., 2016). Preterm babies are at extra threat for cerebral palsy, delays in improvement, hearing troubles and troubles with their vision. The sooner a child is born, the greater these dangers can be. The motive of spontaneous preterm start is often not regarded. Risk elements consist of diabetes, excessive blood pressure, more than one gestation (pregnancy with more than one baby), being either obese or underweight, vaginal infections, air pollutants exposure, tobacco smoking, and psychological stress. For a healthy pregnancy, clinical inductions of labor or cesarean segment aren't advocated before 39 weeks except required for other medical reasons. There can be positive clinical motives for early delivery inclusive of preeclampsia (saccone et al., 2016). Preterm delivery can be avoided in the ones at risk if the hormone progesterone is taken during pregnancy. In girls who might deliver between 24 and 37 weeks, corticosteroid treatment may also improve effects. A number of medications, including norepinephrine, might also put off shipping in order that a mom may be moved to in which greater medical care is available and the corticosteroids have a extra hazard to paintings. Once the baby is born, care consists of preserving the toddler heat through skin-to-pores and skin touch or incubation, assisting breastfeeding and/or method feeding, treating infections, and helping respiratory. Preterm babies every now and then require intubation (saccone et al., 2016).

Literature review

Chance factors within the mother have been identified which might be related to a higher danger of a preterm beginning. Those consist of age (either very young or older), high or low body mass index (bmi), period of time among pregnancies, preceding spontaneous (i. E., miscarriage) or surgical abortions, unintended pregnancies, untreated or undiagnosed celiac sickness, fertility problems, warmth publicity, and genetic variables. Medications for the duration of being pregnant, living conditions, air pollution, smoking, illicit drugs or alcohol, contamination, or physical trauma may additionally motive a preterm beginning. Positive clinical situations in the pregnant mom might also increase the danger of preterm start. Some girls have anatomical issues that save you the infant from being carried to term. These encompass a vulnerable or short cervix (the strongest predictor of untimely birth). Girls with vaginal bleeding throughout being pregnant are at higher chance for preterm birth. At the same time as bleeding in the third trimester can be a sign of placenta succeed or placental abruption situations that occur regularly preterm even earlier bleeding that isn't due to those conditions is connected to a higher preterm birth fee. Ladies with peculiar quantities of amniotic fluid whether or not an excessive amount of (polyhydramnios) or too little (oligohydramnios), are also at hazard.

Anxiety and despair have been linked as risk elements for preterm start (dole, 2008). Premature birth is connected to multiple pregnancies, vaginal haemorrhage at some stage in pregnancy, and polyhydramnios or oligohydramnios, amongst other ratings. Intrauterine infection causes the immune machine to end up activated, that could result in preterm start. Low bmi throughout pregnancy is connected to an accelerated danger of premature shipping, whereas obesity is linked to preeclampsia and diabetes, all of that are linked to an extended risk of preterm start. Preterm beginning is linked to maternal thyroid ailment, asthma, high blood pressure, in addition to a records of cervical surgical techniques and uterine defects. Preterm birth is a threat associated with cigarette smoking. Placental damage and decreased uteroplacental blood float are considered to be resulting from nicotine and carbon monoxide, both of which might be potent vasoconstrictors (goldenberg et al., 2010). Pregnancy and childbirth are important intervals within the existence of a female which ultimately set off massive modifications which includes physiological and psychological adjustments, in addition to the social-own family roles of ladies. The physical changes that arise for the duration of being pregnant can improve a girl's emotional instability. Mom's psychopathological problems can have mental effects on child development. But, preterm start is frequently stressed for dad and mom. This occasion is referred to as an emotional disaster which is frequently diagnosed with a experience of loss and sorrow. It every so often lasts for months after the infant discharge from health facility. For many moms, adjustment with a premature baby is much like adjustment with a disabled child. Whilst a toddler is born normal and healthy, the mom desires to regulate the best photograph she had created of her newborn infant with what she virtually has. This adjustment is more tough for mothers of untimely babies. For this reason, the delivery of a untimely toddler can become a disturbing emotional revel in for most ladies. Those humans are primarily at risk of anxiety, even if the toddler is clinically healthy. Postpartum despair is a common revel in in moms of preterm babies. It has been observed that fathers of premature toddlers had more strain in comparison to fathers of time period toddlers. In the course of the transition to fatherhood, disturbing elements encompass modifications in the position and standing of fathers and absence of mothers' attention because of their involvement in the care of premature babies (gray et al., 2012). Lots of those factors are probably to be present in a preterm birth state of affairs. For mothers, the revel in of giving preterm birth, and the following experiences in the neonatal in depth care unit, may additionally therefore reason huge psychological distress. Maternal mental fitness reactions following preterm start is thrilling from an attachment angle as maternal mental fitness is known to affect youngsters' physical and mental improvement. Ladies with preterm deliveries enjoy extensively higher ranges of strain and melancholy than ladies who supply at time period. But, much less is understood of maternal strain reactions to preterm start. Strain is a psychological phenomenon that may present as anxiety and melancholy. The co-morbidity of anxiety and despair is well known, however the information of stress reactions after preterm childbirth continues to be constrained (hammen et al., 2004). Behavioral and cognitive problems in prematurely born. The severity of the kid's clinical chance elements, parental intellectual fitness is known to make a contribution notably to youngsters's cognitive, emotional, social and physical development. Explored maternal melancholy following preterm delivery. Preterm moms are at higher hazard of melancholy than time period moms rapidly after preterm beginning and that mom with very low beginning weight toddlers have a endured risk for depression within the first postpartum yr. Infants have proven that persisting parental depressive symptoms

are an crucial predictor of baby disorder. The predictors of postpartum despair that have achieved the best quantity of consensus are preceding psychiatric disorder, better circle of relatives disposal of psychiatric ailment, in addition to negative social guide, marital troubles, and a better quantity of stress at some stage in being pregnant (zaers et al., 2008).

Hypotheses

- H1:** The significant predicators of preterm birth are stress, depression and anxiety.
- H2:** There will be high stress, depression and anxiety among preterm birth women as compare to no pre term birth women.
- H3:** There is significant difference of stress, depression and anxiety among preterm birth women in term of region.
- H4:** There is significant difference of stress, depression and anxiety among preterm birth women family system wise.

Material and Methods

This is comparative research conduct for identifying the risk factors of the preterm birth among women. There were used three scales of stress, depression and anxiety for measuring the level of stress, depression and anxiety among preterm birth women and non-preterm birth women. The Zung Self-Rating Depression Scale (Zung, 1965) could be a 20-item self-report live of depressive symptom severity. Every item describes a symbol of depression, and therefore the answerer rates the frequency of every symptom employing a scale of descriptors: none or a touch of the time/some of the time/good a part of the time/most of the time (scored from one to 4). 10 things are keyed within the positive direction and 10 within the negative direction as an effect on response sets. The ZSDS sometimes takes but five min to finish, counting on the purposeful standing of the patient.

The Perceived Stress Scale PSS-10 (Cohen, Kamarch, & Mermelstein, 1983) could be a fashionable tool for activity psychological stress. it's a self-reported form that was designed to live the degree to that things in one's life are appraised as nerve-racking. The PSS-10 determines however unpredictable, uncontrollable, and full respondents realize their lives. The assessed things are general in nature instead of specializing in specific events or experiences. PSS scores are obtained by reversing responses (e.g., 0 = 4, 1 = 3, 2 = 2, three = one & four = 0) to the four completely categorical scores (items four, 5, 7, & 8) so summing across all scales score

For data collection purpose hired 100 diagnosed preterm birth women and 100 randomly selected non preterm birth women to residential areas of Haripur. Almost consumed 8 months in data collection process, before data collection got the consent of the participants and informed them about the purpose of the research and clarify participants their participation is voluntary. After collection of data pay them thanks. For making statistical analysis of collected data were used descriptive statistics, independent t test and regression analysis

Results and Discussion

Table 1
Psychometric properties of study population

Variable	n	%
Preterm birth	100	50.0
Non-preterm birth	100	50.0
Family system		
Nuclear	75	75.0
Joint	25	25.0
Region		
Urban	37	37.0
Rural	63	63.0

Note: n= number of participants, %= percentage

Table I described the statistical features of study population, there preterm birth and non-preterm birth respectively were (n=100, %=50.0) and similarly urban region and rural region respectively were (n=37, %=37.0) (n=63, 63.0) and similarly nuclear family system and joint family system respectively were (n=75, %=75.0) (n=25, %25.0).

Table 2
Level of Stress, Depression and Anxiety among preterm birth and non-preterm birth women

variable	Preterm birth (n=100)		Non-preterm birth (n=100)		T(198)	P	95% CL		Cohen's D
	M	SD	M	SD			LL	UL	
Pre stress	27.72	2.778	18.02	3.14	23.11	.000	8.872	10.528	3.2685
Dep	71.90	2.699	11.21	1.380	200.222	.000	60.092	61.288	28.313
Anx	72.12	2.731	36.35	10.06	34.290	.000	33.713	37.827	4.8492

Note: per stress= perceived stress, dep=depression, anx=anxiety, M=Mean, SD=Standard deviation, CI= Class interval, P=Significant value.

Table III is illustrating the effect of stress, depression and anxiety as risk factor on women pre term birth. Stress, depression and anxiety mean values among preterm birth (M=27.72, SD=2.778) (M=71.90, SD=2.699.) (M=72.12, SD=2.731) respectively. Stress, depression and anxiety mean values among non pre term birth women (M=18.02, SD=3.146) (M=11.21, SD=1.380) (M=36.35, SD=10.068) respectively. Results were significant because p<0.05. Anxiety and depression level is higher among pre term birth women rather than counterpart group of women. Perceived stress is also indicating risk factor for pre-term birth among women obviously in above table.

Table 3
Perceived stress, depression and anxiety among preterm birth women Family wise

Variable	Single		Joint		t(98)	P	95% CL		Cohen's D
	M	SD	M	SD			Lower	Upper	
per stress	28.41	2.563	25.63	2.563	4.775	.000	1.621	3.926	10.08
Dep	72.71	2.562	69.48	1.295	6.032	.000	2.165	4.093	1.591
Anx	72.87	2.637	69.88	1.536	5.356	.000	1.880	4.093	1.385

Note: per stress=perceived stress, dep=depression, anx=anxiety, M=Mean, SD=Standard deviation, CI= Class interval, P=Significant value.

Table IV is illustrating the effect of stress, depression and anxiety as risk factor on women pre term birth. Stress, depression and anxiety mean values among single family system (M=28.41, SD=2.563) (M=72.71, SD=2.562) (M=72.87, SD=2.637) respectively. Stress, depression and anxiety mean values among joint family system (M=25.63, SD=2.563) (M=69.48, SD=1.295) (M=69.88, SD=1.536) respectively. Results were significant because $p < 0.05$. Anxiety and depression level is higher among single family system rather than counterpart group of family system. Perceived stress is also indicating risk factor for single family system obviously in above table.

Table 4
Prevalence of stress, depression and anxiety among preterm birth women region wise

Variable	Ruler region (n=63)		Urban region (n=37)		t(98)	P	95% CL		Cohen's D
	M	SD	M	SD			LL	UL	
Per stress	26.68	2.473	28.33	2.782	-2.99	.000	-2.756	-.559	0.626
Dep	70.78	2.200	72.56	72.56	-3.32	.000	-2.829	-.715	0.034
Anx	70.95	70.95	72.81	2.862	-3.47	.000	-2.928	-.799	0.037

Note: per stress=perceived stress, dep=depression, anx=anxiety, M=Mean, SD=Standard deviation, CI= Class interval, P=Significant value.

Table V is illustrating the effect of stress, depression and anxiety as risk factor on women pre term birth. Stress, depression and anxiety mean values among ruler region (M=26.68, SD=2.473) (M=70.78, SD=2.200) (M=70.95, SD=70.95) respectively. Stress, depression and anxiety mean values among urban region (M=28.33, SD=2.782) (M=72.56, SD=72.56) (M=72.81, SD=2.862) respectively. Results were significant because $p < 0.05$. Anxiety and depression level is higher among urban region rather than counterpart group of region. Perceived stress is also indicating risk factor for urban obviously in above table.

Table 5
One way variance of preterm birth and non-preterm birth

Variables	Preterm birth women (n=100)		Non-preterm birth women (n=100)		F	df	P
	M	SD	M	SD			
Stress	27.72	2.778	18.02	3.146	534.07	198	.000

Depression	71.90	2.699	11.21	1.380	40088.86	198	.000
Anxiety	72.12	2.731	36.35	10.068	1175.77	198	.000

Note: M=Mean, SD=standard deviation, df=degree of freedom, F=frequency, P=significant value.

Table IV illustrates the effect of stress, depression and anxiety as risk factor on women pre term birth. Stress, depression and anxiety among preterm birth (M=72.12, SD=2.73) (M=27.72, SD=2.778) (M=71.90.645, SD=2.699) respectively. Stress, depression and anxiety among non-preterm birth (M=36.35, SD=10.068) (M=18.02, SD=3.146) (M=11.21, SD=1.380). Anxiety and depression level is higher among preterm birth rather than non-preterm birth women. Perceived stress is also indicating risk factor for preterm birth obviously in above table.

P<0.05 stress, depression and anxiety significantly contribution in preterm birth among women.

Table 6
Anxiety, depression and stress are the predictors of the preterm birth among women

Variable	B	B	SE	UL	LL
preterm status	.056	3.087	.084	2.922	3.253
Anxiety	-.255	-.009	.001	-.012	-.007
Depression	-.729	-.021	.001	-.024	-.019
Stress	-.030	-.002	.003	-.007	.003
Region	.056	.085	.027	.032	.138
family system	.011	.011	.023	-.034	.057
R	.976a				
AR	.951				
R ²	.952				

Note: B = unstandardized regression coefficients, β = standardized regression coefficient, SE=Standard Error, CI = confidence interval, UL = upper limit, LL = lower limit, p<0.05 is indicating perceived stress, depression, anxiety and family system are the predictors of the preterm birth among women. Region is non-signification predictors of preterm birth in women. There is high correlation within the study variables because R value is r .97P<.001.

Conclusion

The subject matter of present study was to measure stress, depression and anxiety as risk factor for preterm birth among women. The finding of the study suggested that the rate of stress, depression, anxiety higher among preterm birth women as compared to non-preterm birth women. The findings of the study explained that level of depression and anxiety is higher among preterm birth women as compared to counterpart group. The results indicated that stress, stress, depression and anxiety higher in nuclear family preterm birth women as compare tjoint family preterm birth women

First one assumption stress, anxiety and depression are significant predictors proved true by table VI among preterm birth women psychological problems indicators are stress, anxiety and depression. These variables amorously effecting the preterm birth ratio of women.

Hypothesis II was proved by the results of table II & V of present study showed that there will significant differences in stress, depression and anxiety among preterm birth and non-preterm birth women. The hypothesis is proving by the findings of the results as $p < 0.05$, so there is significant difference in their stress, depression and anxiety level of preterm birth and non-preterm birth women. stress, depression and anxiety higher among preterm birth women rather than non preterm birth women was approved by study findings. Due to pregnancy those women take stress anxiety and depression become cause of premature babies.

Hypothesis III proved true by table IV there is difference in level of stress, depression and anxiety among women region wise. In urban areas preterm birth women psychological problems were higher than rural area resident preterm birth women.

Table IV of present study showed that there will significant differences in stress, depression and anxiety among urban region and rural region. The hypothesis is proving by the findings of the results as $p < 0.05$, so there is significant difference in their stress, depression and anxiety level of urban region and rural region preterm birth women. Urban region resident preterm birth women ratio of depression, anxiety and stress, is higher rather than counterpart group

Fourth assumption approved by table III there is existing difference in influence of stress, depression and anxiety among women under influence of different family systems. stress, depression and anxiety are more higher among joint family preterm birth women than counterpart group. Joint family system promoting good mental health rather than single family.

Table III of present study showed that there will significant differences in stress, depression and anxiety among women family system wise. The hypothesis is proving by the findings of the results as $p < 0.05$, so there is significant difference in nuclear family and joint family system. The higher ratio stress, depression and anxiety nuclear family as compare to joint family system..

The current research aims to investigate that stress, depression and anxiety is very common in preterm birth among women with first pregnancy. The results showed that stress, anxiety and depression during pregnancy are significant correlated in first time pregnant women. Further analyses revealed that anxiety during first time pregnancy rather than depression emerged as the significant predictor of pregnancy based stress as per stepwise (Masood, Musarrat, Mazahir, & Naz, 2017).

This review explored the association between DAS and PTB. The increased risk factor for prematurity when a woman experiences one or more of the described psychological disorders. A part from a full clinical diagnosis of a disorder, a sub-clinical or symptomatological manifestation alone is found to be also predictive of PTB, and this has important clinical and practical implications. Pregnancy-specific distress, identified as a combination of pregnancy-specific anxiety and worries, and elevated perceptions of stress, is also a powerful predictive concept when exploring psychosocial determinants of PTB. The level of bias, PTB was significantly and independently predicted by depression, anxiety, or perceived stress (or in any combination between these)

This study has also shown that preterm birth in women as their babies are more likely to suffer higher psychological problems as compared to those non-preterm birth (Raj, Saggurti, Lawrence, Balaiah, & Silverman, 2010). In real life commonly we observed rich people enjoy more life facilities and luxury life, they not face financial crisis in their life, than their stress, depression and anxiety status remain stable. But poor people face many problems in their life due to their poor wealth condition. They can't full fill their and offspring necessary life demands and facilities, thus their stress, depression and anxiety not remain stable and they face many psychological issues, which badly effect their mental health.

One recent study Gabriel, and Liimatainen also proved present study subject matter. It is well known that psychological problems are related economic status. Economic crises are therefore times of high risk to the stress, depression and anxiety of preterm birth in women. Conversely while economic crises may have stress, depression and anxiety effects, mental health problems have increasingly significant economic effects. The economic consequences of psychological problems mainly in the form of lost productivity are estimated to average 3- 4% of gross national product in European Union (EU) countries (Gabriel, & Liimatainen, 2000).

Studies suggested that women who experience psychological or stress during pregnancy are at significantly increased risk for shorter gestation, earlier onset of spontaneous labor, low birth weight infant (<2500 g) and preterm delivery (Federenko, & Wadhwa, 2004)

We have shown that maternal stress during pregnancy is more than twice as common among women who gave birth preterm compared to women who gave birth at term. The vast majority of the women exposed to stress during pregnancy, no matter what the origin or level of the stress was, gave birth preterm because of the exposure of stress as an attributable factor the women gave birth preterm due to maternal stress during pregnancy as an attributable factor. Our study further establishes the already well-known risk factors like, genital tract infection, previous preterm delivery and premature contractions. (Federenko, & Wadhwa, 2004)

Studies shows that a recent detailed mental health study conducted in four rural villages of Bangladesh, which found no statistically significant differences in the prevalence of major mental health conditions among early and non-early marriages girls. (Chowdhury et al. 2000).

Recommendations

1. We recommend provide a healthy family environment and be more caring for preterm birth women for over coming their psychological problems.
2. Joint family system play a vital role in building healthy relationship within family members. Which indirectly reduce psychological health problems among preterm birth women.
3. During pregnancy women must remain engage in healthy productive activities to remain away to stress, depression and anxiety.
4. They spent most of time in religious practices for peace of mind.
5. They recite Quran and prayers regularly for good mental health

6. Scholars write good books, articles, magazines and news articles for awareing the pregnant women, how to get sefaty to preterm birth during pregnancy.
7. Awareness workshops, for pregnant women in asian countries and in under developed countries could beneficial for reducing preterm birth among women.

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