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Depression among Pregnant Females in Punjab, Pakistan: Effect of State-Trait Anxiety

Rabia Sajjad [*] Umara Rauf [†] Rafit Saheed [‡]

Abstract *The objective of the study is to examine the impact of state-trait anxiety on depression among pregnant females. A cross-sectional study was carried out on pregnant females of all three trimesters from March 2019 to December 2019. The study collected data from pregnant females 153 age 18 to 47 years using the purposive sampling technique. Respondents were from Government and private hospitals of two metropolitan cities of Punjab, Pakistan (Lahore and Faisalabad). All the pregnant females completed a demographic sheet, State-Trait Anxiety Inventory(S-TA), and Center for Epidemiologic Studies Depression Scale (CES-D) to assess the level of anxiety and depression among pregnant females. The SPSS version 23 was used for data analysis. The regression results highlighted that state-trait anxiety positively predicted depression among pregnant women, with a 16% variance in the outcome variable. Pregnant females experience a diverse level of anxiety and stress that can have serious consequences for the childbearing women as well can make the pregnancy process more complicated if treated with early intervention.*

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Introduction

Pregnancy is an exciting phase of life, but sometimes this joyful experience is thwarted by negative consequences like pre & post-partum depression. Several pieces of evidence have shown a positive link between psychological distress (PD) during pregnancy. In a survey in Sweden, 14% of pregnant women were found to suffer from PD at least one time (Signal et al., 2021). Moreover, females experienced depression from 7.4% to12.8% in the 1st till 3rd trimester (Nagandla et al., 2016). The majority of empirical evidence comes from Western countries as compared to developing countries and other regions. The study by Nasreen et al. (2011) carried out on a Bangladeshi sample identified that about 18% to 29% of women suffered from PD. A study in Pakistan showed that 18% of females had either depression or anxiety (Karmaliani et al., 2009).

A study of Oman identified that 24.3% of pregnant women had antenatal depression (Al-Azri et al., 2016). Antenatal depression is majorly linked with unplanned pregnancies, family pathology of mental issues, and marital conflicts. Mental health problems at the time of pregnancy impose a threat for neonates as well as pregnant women's physical and psychological wellbeing (Alder, Fink, Bitzer, Hösli & Holzgreve, 2007). Several studies have highlighted the positive relationship of antenatal anxiety and depression with preterm birth with low birth weight (Ding et al., 2014; Grote et al., 2010; Grigoriadis et al., 2013). Depression has been declared by WHO as the second leading cause of global disease burden by 2020. In Pakistan, a study declared an 18.0% ratio of anxiety and depression in pregnant females. Depression and anxiety were associated with husband unemployment, lower economic status, less education, and an unnecessary pregnancy. The strongest leading factor of distress was physical/sexual and verbal abuse. In total, 42% of females were physically and/or

[*] Department of Applied Psychology, Government College Women University, Faisalabad, Pakistan.
Email: rabiasajjad@gcwuf.edu.pk
[†] Department of Psychology, Government College Women University, Sialkot, Pakistan.
[‡] School of Public Policy, Pakistan Institute of Development Economics, Islamabad, Pakistan.

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sexually abused, 23% experienced verbal abuse (Karmaliani et al., 2009).

Another study identified the role of pregnancy-specific anxiety (PSA) in preterm birth among pregnant females. The result showed that PSA was positively linked with preterm birth in 3rd trimester. The research showed that controlling PSA during pregnancy had significant effects on neonate and female health (Khalesi & Bokaie, 2018). According to the WHO, psychological, neurological, and addiction complications increase the chances of distress among both men and women to 14 % (Organization, 2021). Distress during pregnancy is linked to negative consequences (Stein et al., 2014). In developing countries, anxiety and depression in pregnancy are linked with the post-partum period like poor attachment with offspring, preterm birth, nutrition deficiency, psychological, receptive, cognitive, and behavioral issues in the neonate.

Eventually, psychosocial issues in developing countries increase maternal mortality (Meijer et al., 2014). However, western research of Central America showed that 41 % of the Nicaraguan women had anxiety, and 57 % had depression, on the contrary, 15 % of Dutch women had anxiety, and 6 % had depression. Even after receiving psychological help and counseling, females reported 9.6% antenatal anxiety and depression (Verbeek, Arjadi, Vendrik, Burger & Berger, 2015).

Pregnancy-related anxiety (PRA) is the state of pregnant women in which they feel anxious; they are more worried, apprehensive, physical complaints, and that affects every domain of life (Rosario, Premji, Nyanza, Bouchal & Este, 2017).

Especially in developing countries, it is relatively higher as about 3/5 and 1/5 pregnant women experience mental health issues during pregnancy; on the other hand, this prevalence is about 1/10 in developed countries. Some demographic characteristics and social factors were also related to PD in developing countries (Carolan-Olah & Barry, 2014).

History of miscarriage, low-income status, and lower educational level was linked with antenatal depressive symptoms. Poor marital relationships and a high level of trait anxiety were significant predictors of antenatal depression (Carolan-Olah & Barry, 2014; Roos, Faure, Lochner, Vythilingum & Stein, 2013). A systematic review of 109 research papers between the year 1980 - 2004 showed that 13% of pregnant females had major or minor depression. In the Brazilian population, the prevalence of depression using the Beck Depression Inventory the prevalence was estimated to be 20%, and on anxiety using the State-Trait Anxiety Inventory was 60%. Gender estimation showed a high prevalence among females as compared to males in Asian countries. The study carried out in 2011 on the Bangladeshi population showed that 18% had antenatal depression and 29% had anxiety (Nasreen, Kabir, Forsell & Edhborg, 2011). Pakistani study carried out in 2006 found this prevalence rate of depression to be 34%. A comparative study in Pakistan found the prevalence of depression to be higher in the Pakistani population (48 %) as compared to the Canadian population (31%) and in Caucasian (9%) women (Mehboob et al.,2011).

Women with a history of infertility and complicated operative history were more vulnerable in terms of anxiety. Women in the second trimester experienced more distress as compared to other trimesters (Dr. Sanjay Kumar Nayak et al., 2015). The current study is an attempt to explore the predictive effect of the trait anxiety or depression among pregnant women. The study also explored the effect of demographics on state-trait anxiety and depression among pregnant females. This study assesses the effects of state-trait anxiety and depression among pregnant ladies. The literature is restricted in Pakistan, and no study used demographic terms of state-trait anxiety and depression among pregnant ladies; the majority of the information which is accessible in Pakistan depends on contextual analyses. Above all the results, the study may be used in identifying the relationship between depression and anxiety among pregnant ladies in all trimesters.

Methodology

The study approval was taken from the ethical board of Government College Women, Faisalabad. The purposive sampling technique was employed in sample selection between the age ranges of 18 to 47 years. The data was collected from 153 pregnant females of all trimesters from Government and private hospitals of two metropolitan cities of Punjab, Pakistan (Lahore and Faisalabad) from March 2019 to December 2019.

Research questioners comprising of demographics sheet, State-Trait Anxiety

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Inventory(S-TA), and Center for Epidemiologic Studies Depression Scale (CES-D) was used to assess the level of anxiety among pregnant women; the was used to measure the level of depression among the female females. All the females were debriefed regarding the study objectives and study protocols of privacy and antinomy.

Results

Out of 153 pregnant females, Table 1 highlights that the majority of the sample belonged to the category of 18 to 27 years of age (n = 103, 67.3%). Most of the women belonged to rural areas (n = 120, 78.4%). Most of the pregnant women in the current sample belong to the second trimester (n = 87, 56.9%). Women with 1-3 children were (n = 82, 53.6%). Most of the sample belonged to non-working category (n = 127, 83.0%).

The age differences were evaluated using One Way ANOVA; the results show that pregnant in the age category of 18-27 years were highest on anxiety (101.00±9.03) as compared to women in the age category of 38-47 years (93.66±4.04). Whereas women in the age category of 28-37 years have high mean scores on depression (38.21±13.37) as compared to other age categories of 38-47 years (32.00±14.47), showing that age act as a resilient factor against anxiety and depression in pregnant females.

The trimester differences were evaluated using One Way ANOVA, women in the second trimester were highest on state-trait anxiety (100.13±8.80), and women in the third trimester were highest on depression (38.71±12.65) as compared to women in other trimester categories. The prediction effects have shown that state-trait anxiety positively predicted depression among pregnant women ($\beta = .40$. $p > .001$) and explained a total of 16 % change in the level of depression among pregnant females.

Table 1. Frequencies of Sample Characteristics (n= 153)

Sample characteristics	Categories	F	%
Age	18 to 27 years	103	67.3%
	28 to 37 years	47	30.7%
	38-47 years	3	2.0%
Urban/Rural	Urban	33	21.6%
	Rural	120	78.4%
Year of infertility	First trimester	27	17.6%
	Second trimester	87	56.9%
	Third trimester	39	25.5%
No of children	No child	59	38.6%
	1-3 children	82	53.6%
	4-6 children	12	7.8%
Profession	Working	26	17.0%
	Non-working	127	83.0%

Table 2. ANOVA F- Values of age Differences (n= 153)

Variables	18-27 years	28-37 years	38-47 years		
	(n = 103)	(n = 47)	(n = 3)		
	M±SD	M±SD	M±SD	F	η^2
Anxiety	101.00±9.03	98.23±7.26	93.66±4.04	2.57	.12
Depression	35.07±14.56	38.21±13.37	32.00±14.47	.89	.03

*$p<0.05$, **$p<0.01$

Table 3. ANOVA F-values of Trimester of Pregnancy (n=153)

Variables	1st trimester (n = 27) M±SD	2nd trimester (n = 87) M±SD	3rd trimester (n = 39) M±SD	F	η^2
Anxiety	99.66±8.40	100.13±8.80	99.94±8.36	1.18	.01
Depression	36.62±14.06	34.55±14.36	38.71±12.65	.03	.00

*p<0.05, **p<0.01

Table 4. Linear Regression Analysis to Test Effects of State-Trait Anxiety on Depression (n=153)

Depression		
Model 1		
Variables	B	95 % CI
Constant	-31.39	[-56.00, -6.78]
Anxiety	.67	[.42, .91]
R^2	.16	

Discussion

During pregnancy, the women experience diverse physical, emotional, and behavioral changes and complications that may lead to diverse emotional complications. The pregnant female also experiences different levels of distress like anxiety, depression, apprehension, fear, lack of emotional support, and undernourishment (Zakar, Zakar & Abbas, 2015). The current study attempted to explore the effects of state-trait anxiety on depression among pregnant females. The results of the current study have shown that females in younger age were higher on anxiety as well as depression as compared to females in the elder age category showing that age act as a resilient factor against anxiety and depression in pregnant females. A number of western researches have shown that pregnant females need psychological support to deal with distress associated with pregnancy complications (Amiri, Khosravi, Chaman, Vahedi & Sadeqi, 2016; Wiweko, Anggraheni, Elvira & Lubis, 2017). A number of researches have shown that age, infertility issues, and poor couple relationship are the major factor that increases chances of depression and anxiety among female (Lakatos, Szigeti, Ujma, Sexty & Balog, 2017). Another scientific study has shown that pregnancy at a younger age, poor marital relations, low-income status, combined family structure, traumatic life events, poor self-esteem were major predictors of antenatal depression and anxiety among pregnant females (Al-Azri et al., 2016; Cevik & Yanikkerem, 2019; Grote et al., 2010; Nagandla et al., 2016; Kiesswetter et al., 2019). Rubertsson, Hellstrom, Cross, and Sydsjo (2014) estimated that about 15.6% of pregnant women under the age of 26 years were at a higher risk of developing symptoms. Another study highlighted that the different socio-demographics statuses of 311 pregnant women in the US sample showed that women of younger age, having poor socioeconomic status, and having a high level of state anxiety were higher on pregnancy anxiety.

The result of the study highlighted that pregnant females in the second trimester were higher on anxiety, and females in the third trimester were higher on depression. Previous research has shown women in different levels of anxiety and depression in different trimesters, especially females of the first and third trimesters, were highest on pregnancy anxiety. A cross-sectional study was carried out in the 3rd trimester of pregnant females, and it was found that they tend to suffer from anxiety than the general population. 160 Iranian pregnant females in the third trimester found that general anxiety increased fear of childbirth. Nulliparous pregnant females in the 28th week and 38th week experienced more levels of anxiety as compared to females with previous childbirth (Rubertsson, Hellström, Cross & Sydsjö, 2014). Another Turkish study confirmed the study results among 660 pregnant females in the third trimester, the females showed the link between anxiety, and fear of childbirth which was higher in females

with a history of miscarriages, abortion, stillbirth as compared to females having one or multiple children's (Cevik & Yanikkerem, 2019). Another survey study carried out on 650 pregnant females of trimester between the age of 17–46 years of age, out of total sample, 25% of females showed symptoms of childbirth fear, stress, and anxiety (Lakatos, Szigeti, Ujma, Sexty & Balog, 2017; Wiweko, Anggraheni, Elvira & Lubis, 2017).

The regression analysis highlighted that state-trait anxiety positively predicted depression among pregnant females. Empirical research has shown that anxiety and depression in pregnant females not only affect the process of pregnancy but can also have a negative impact on labor outcomes like delivery complications, cesarean birth, prolong delivery, and low birth weight. Research from all over the globe on pregnancy anxiety showed a higher prevalence of about 14–54% (Amiri, Khosravi, Chaman, Vahedi & Sadeqi, 2016). Though, the majority of scientific evidence was carried out on general pregnancy anxiety in comparison to pregnancy-specific anxiety (Meijer et al., 2014), as pregnancy-specific anxiety is identified as fear, doubts, and apprehension regarding childbirth and health of a newborn. Another cross-sectional observational study in Spain carried out on 174 pregnant females also supported the research findings that anxiety varies from female to female as some pregnant women with a history of miscarriages report a higher level of anxiety in comparison to the general population (Cevik & Yanikkerem, 2019; Lakatos, Szigeti, Ujma, Sexty & Balog, 2017; Wiweko, Anggraheni, Elvira & Lubis, 2017). Another study also found a positive association between PD and pregnancy. Women with depression and anxiety requested for cesarean section in fear of delivery complications. Women having anxiety and depression in early (16 weeks) and late (31 weeks) availed the emergency cesarean section (Dr. Sanjay Kumar Nayak et al., 2015).

Conclusion

Pregnant females experiencing pregnancy-related stress and anxiety need to be identified in the early stage to minimize the chances of developing depression among pregnant females, which have serious consequences on the mother as well as new offspring's physical and psychological health. The health counseling services should include the spouse to improve the social support that can help the pregnant females to deal with pregnancy-related emotional complications, fear, distress associated with delivery procedures.

References

Al-Azri, M., Al-Lawati, I., & Al-Kamyani, R. et al. (2016). Prevalence and risk factors of antenatal depression among Omani women in a primary care setting: cross-sectional study. *Sultan Qaboos Univ Med J. 16*(1), e35–e41. doi: 10.18295/squmj.2016.16.01.007

Alder, J., Fink, N., Bitzer, J., Hösli, I., Holzgreve, W. (2007). Depression and anxiety during pregnancy: a risk factor for obstetric, fetal and neonatal outcome? A critical review of the literature. J Matern Fetal Neonatal Med*; 20*(3), 189–09. doi:10.1080/14767050701209560

Amiri, M., Sadeqi, Z., Hoseinpoor, M. H., & Khosravi, A. (2016). Marital Satisfaction and Its Influencing Factors in Fertile and Infertile Women. J Fam Reprod Health, *10*(3), 139-45. doi: 10.1007/s11195-016-9443-y

Carolan-Olah, M., & Barry, M. (2014). Antenatal stress: an Irish case study. Midwifery, 30, 310-16. doi: 10.1016/j.midw.2013.03.014

Ding, X. X., Wu, Y. L., & Xu, S. J. et al. (2014). Maternal anxiety during pregnancy and adverse birth outcomes: a systematic review and meta-analysis of prospective cohort studies. J Affect Disord, *159*,103–10. doi: 10.1016/j.jad.2014.02.027

Grote, N. K., Bridge, J. A., Gavin, A. R., Melville, J. L., Iyengar, S., & Katon, W. J. A. (2010). meta-analysis of depression during pregnancy and the risk of preterm birth, low birth weight, and intrauterine growth restriction. *Arch Gen Psychiatry, 67*(10),1012–024. doi: 10.1001/archgenpsychiatry.2010.111.

Grigoriadis, S., VonderPorten, E. H., & Mamisashvili, L., et al. (2013). The impact of maternal depression during pregnancy on perinatal outcomes: a systematic review and meta-analysis. J Clin Psychiatry, *74*(4), e321–e41. doi: 10.4088/JCP.12r07968.

Karmaliani, R., Asad, N., Bann, C. M., Moss, N., Mcclure, E. M., Pasha, O., Wright, L. L., & Goldenberg, R. L. (2009). Prevalence of anxiety, depression and associated factors among pregnant women of Hyderabad, Pakistan. Int J Soc Psychiatry, *55*(5), 414-24. doi: 10.1177/0020764008094645

Khalesi, Z. B., & Bokaie, M. (2018). The association between pregnancy-specific anxiety and preterm birth: a cohort study. Afri Health Sci, *18*(3), 569-75. doi: 10.4314/ahs.v18i3.14

Kiesswetter, M., Marsoner, H., Luehwink, A., Fistarol, M., Mahlknecht, A., & Duschek, S. (2019). Impairments in life satisfaction in infertility: Associations with perceived stress, affectivity, partnership quality, social support and the desire to have a child. Beha Med, *2*(3), 23-27. Doi: 10.1080/08964289.2018.1564897.

Lakatos, E., Szigeti, F. J., Ujmal, P. P., Sexty, R., & Balog, P. (2017). Anxiety and depression among infertile women: a cross-sectional survey from Hungary. BMC Women's Health. *17*, 48. Doi: 10.1186/s12905-017-0410-2.

Mahboob, S., Shah, A., Bowen, A., Afridi, I., & Nowshad, G. et al. (2011). Prevalence of Antenatal Depression: Comparison between Pakistani and Canadian women. J Pak Med Assoc,61, 242–46.

Meijer, J. L., Bockting, C. L., Stolk, R. P., Kotov, R., Ormel, J., & Burger, H. (2014). Associations of life events during pregnancy with longitudinal change in symptoms of antenatal anxiety and depression. Midwifery, 30, 526–31. doi: 10.3390/ijerph16162851

Nagandla, K., Nalliah, S., & Yin, L. K. et al. (2016). Prevalence and associated risk factors of depression, anxiety and stress in pregnancy. Int J Reproduction, *5*(7), 2380–88. doi: https://doi.org/10.2147/IJWH.S153273

Nasreen, H. E., Kabir, Z. N., Forsell, Y., & Edhborg, M. (2011). Prevalence and associated factors of depressive and anxiety symptoms during pregnancy: a population-based study in rural Bangladesh. BMC Womens Health, *11*, 22. doi: 10.1186/1472-6874-11-22.

Nayak, S., Poddar, R., & Jahan, M. (2015). Psychological problems during advance stage of pregnancy. Int J Indian Psychol, *2,* 103-13. doi:10.25215/0202.014

Radloff, L, S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Appl Psychol Meas,385*(01).

Rubertsson, C., Hellstrom, J., Cross, M., & Sydsjo, G. (2014). Anxiety in early pregnancy: Prevalence and contributing

factors. *Arch Womens Ment Health,17*(3), 221–28. doi: 10.1007/s00737-013-0409-0.

Rosario, M. K., Premji, S. S., & Nyanza, E. C. et al. (2017). A qualitative study of pregnancy-related anxiety among women in Tanzania. BMJ Open, *7,* e016072. Doi:10.1136/bmjopen-2017-016072.

Roos, A., Faure, S., Lochner, C., Vythilingum, B., & Stein, D. J. (2013). Predictors of distress and anxiety during pregnancy. Afr J Psychiatry (Johannesbg),*16,* 118-22. doi: 10.4314/ajpsy. v16i2.15.

Signal, T. L., Paine, S. J., Sweeney, B. et al. (2017). The prevalence of symptoms of depression and anxiety, and the level of life stress and worry in new zealand māori and non-māori women in late pregnancy. *Aust N Z J Psychiatry, 51*(2),168–76. doi: 10.1177/0004867415622406

Spielberger, C. D., Gorsuch, R. L., Lushene, R., Vagg, P. R., & Jacobs, G. A. (1983). Manual for the State-Trait Anxiety Inventory. Palo Alto, CA: *Consulting Psychologists Press.*

Stein, A., Pearson, R. M., Goodman, S. H., Rapa, E., Rahman, A., & McCallum, M. et al. (2014). Effects of perinatal mental disorders on the fetus and child. Lancet, *384,* 1800– (19). doi: 10.1016/S0140-6736(14)61277-0.

Verbee, T., Arjadi, R., Vendrik, J. J., Burger, H., & Berger, M. Y. (2015). Anxiety and depression during pregnancy in Central America: a cross-sectional study among pregnant women in the developing country Nicaragua. BMC Psychiatry, *15*, 292. doi: 10.1186/s12888-015-0671-y

Organization, W. (2021). mhGAP: Mental Health Gap Action Programme: scaling up care for mental, neurological and substance use disorders. 28 August 2021, http://apps.who.int/iris/handle/10665/43809?show=full

Wiweko, B., Anggraheni, U., Elvira, D. S., & Lubis, P. H. (2017). Distribution of stress level among infertility patients. Middle East Fertil Soc J, *22*, 145–48. doi: http://dx.doi.org/10.1016/j.mefs.2017.01.005

Yanikkerem, E., Ay, S., Mutlu, S., & Goker, A. (2013). Antenatal depression: Prevalence and risk factors in a hospital based Turkish sample. J Pak Med Assoc, *63,* (472-77). doi: 10.5455/jpma.19892

Zakar, R., Zakar, M. Z., & Abbas, S. (2013). Domestic violence against rural women in Pakistan: an issue of health and human rights. J Family Violence*,31*,15-25. doi: 10.1007/s10896-015-9742-6