

## The Role of Perceived Stress and Social Support among Predicting Anxiety in Pregnant Women

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### Abstract

**Introduction:** Pregnancy anxiety is a common disorder occurred due to various factors. It has significant impact on the outcome of pregnancy.

**Objective:** This study aimed at determining the role of perceived stress and social support to tame anxiety among pregnant women.

**Materials and Methods:** This is a descriptive-analytical study with correlational design. The study's population included all pregnant women who were referred to Ardabil health centers in the second half of 2013 to receive prenatal care. A total of 110 subjects were selected using random sampling method and responded to demographic, perceived stress and social support questionnaires. The data collected was analyzed using Pearson's correlation coefficient and multiple regression analysis.

**Results:** The results showed that anxiety during pregnancy had a negative correlation with negative perception of stress ( $r=0.56$ ;  $P<0.001$ ) and positive correlation with positive perception of stress ( $r=-0.36$ ;  $P<0.001$ ). It also has support of friends ( $r=0.42$ ;  $P<0.001$ ) and family ( $r=-0.52$ ;  $P<0.001$ ) and total score of social protection ( $r=0.52$ ;  $P<0.001$ ). Results of regression analysis also revealed that 37% of the total variance of pregnancy anxiety is justified by perceived stress and social support.

**Conclusion:** The results showed that the perception of stress and social support received by pregnant women play a role in anxiety during pregnancy.

**Keywords:** Psychological Stress, Anxiety, Social Support, Pregnant Women

## Introduction

Pregnancy anxiety is a maternal psychological disorder that is defined as anxiety related to maternal, neonatal and childbirth [1]. It is associated with undesirable pregnancy outcomes, such as preterm delivery, low birth weight, fetal distress and some anomalies of the infant, including cleft palate and pyloric stenosis [2], nausea and vomiting, preeclampsia, poor system, increased episiotomy and neonatal infections and postpartum mental disorder [3, 4]. Severe anxiety during pregnancy damages mother-infant relationship and reduces the mother's ability to play the maternal role [5]. Bazrafshan and Mahmoudi Rad [6] showed that the level of pregnancy anxiety and clinical problems during pregnancy undermine infant health. Maternal pregnancy anxiety can be associated with premature birth, low birth weight, disrupted temperament [7] and abnormalities in the cerebral structure and function of infants in the future [8]. Infants of anxious and stressful mothers have lower than average weight and are born prematurely [9]. Hypothalamic-pituitary-adrenal (HPA) axis dysfunction and depressive symptoms in adolescence [10] and asthma [11] are among other pregnancy anxiety complications that children may suffer from.

Conflicting feelings of passion and vitality on one hand, and wariness and panic on the other, lead to unstable condition in mothers [12], but stressors alone do not cause negative effects of stress. According to Lazarus and Folkman's perspective [13], cognitive assessment and coping strategies are two major mediators of response to stressful events. An individual will experience turmoil when initial assessment of threat is beyond the secondary assessment of coping abilities. One's initial assessments can be influenced by her personality and attitudes toward the incident and other personal resources, such as social support, that are brought to the

stressful situation by the individual [14, 15]. Cognitive appraisal and the perception of stress can either be positive or negative. In the positive perception of stress, the individual considers stressors as something positive and trusts her ability to deal with stress. But in the negative perception of stress, a person negatively looks at stressors and feels helpless in coping with the problems and challenges as well as shows negative reactions such as fear, anxiety, lack of self-confidence etc. while facing these issues [16]. Personality traits, such as extroversion and neuroticism, mediate the relationship between stress and health [17].

The results of a study by Entringer et al. [18] showed that women who report a negative effect of pregnancy on jobs also undergo more stress during pregnancy [19]. In a prospective longitudinal study, children who are exposed to pregnancy stress received lower scores on IQ tests at the ages of 7 and 11, compared to the control group [20].

Social support is an essential factor to improve the health and well-being of mothers and babies during pregnancy. Family and friends are two important sources of social support [21]. Providing resources for emotional, material and information support relieves pregnancy-related physical and mental changes and encourages mothers for healthy behaviors and lifestyle changes [22, 23]. Moreover, pregnant women who have higher levels of support and positive relationships of their husbands experience lower levels of stress [24]. Social support adjusts the effects of mental pressure on mental health symptoms caused by stress [25] and predicts mental health status [26, 27]. Results obtained by Chou et al. showed that nausea and vomiting associated with pregnancy, perceived stress, social support, and planned pregnancy explain 37.6% of the total variance of prenatal psychosocial adjustment [28]. Results obtained by Gourounti et al. showed that

low levels of social support and marital satisfaction are associated with elevated pregnancy anxiety [29]. Overall, results of the existing studies suggest that prenatal stress and social support received by a mother during pregnancy is associated with pregnancy outcomes. However, results of these studies have mainly focused on the effects of these variables on the infants. Since pregnancy anxiety can be seen in a large number of pregnant women and have negative effects on the maternal and neonatal health, the present study aimed to determine the role of perceived stress and social support in predicting pregnancy anxiety among pregnant women.

### Materials and Methods

The present study is a descriptive-analytical and correlational design. All pregnant women who were referred to Ardebil health centers in the second half of 2013 to receive prenatal care formed the study population. A total of 110 subjects were selected using cluster random sampling method and enrolled in the study. It should also be noted that a total of 30 samples are suggested per predictor variable in correlation studies. Therefore, since there are two predictor variables in the present research, a total of 60 samples were considered. According to the drop in the sample size and considering the inclusion and exclusion criteria, a total of 110 individuals were enrolled. In this study, the following questionnaires were used for data collection:

*Pregnancy-related anxiety questionnaire (revised):* This questionnaire was developed by Huizink et al. and consists of 10 statements measuring the pregnancy anxiety in three subscales, including fear of having a child with a disability, fear of childbirth and being worry about one's appearance. Each question is graded using a 5-point Likert scale from completely false (1) to completely true (5). Scores range from 10 to 50, with high scores indicating high pregnancy anxiety [30].

This questionnaire was first translated into Persian and then the Persian version was translated back into English. To ensure the content of the questionnaire, the content validity was confirmed by three qualified psychologists. Cronbach's alpha coefficients of the subscales of the test, including total score of pregnancy anxiety, fear of having a child with disabilities, fear of childbirth and fear of personal appearance were 0.83, 0.78, 0.91 and 0.75, respectively.

*Social support scale:* This scale was developed and validated by Sameni based on factor analysis. Social support scale consists of 28 items, with false and true options, which are assigned (0) and (1), respectively [31].

*Perceived stress scale:* This scale was developed by Cohen et al. in 1983 [32], and 14 statements are answered based on a five-point Likert scale (none, low, moderate, high and very high), which are given 0, 1, 2, 3 and 4 scores respectively.

Perceived stress scale measures two subscales, including negative perception of stress and positive perception of stress with the high score in each indicating a positive or negative perception of stress. Internal consistency reliability coefficient of this scale was obtained using Cronbach's alpha coefficient ranging from 0.84 to 0.86.

The inclusion criteria of the study included having at least basic literacy, lack of any physical or mental illness and age range of 20–35 years. Also, having a child with a disability (physical or mental) and a history of abnormal labor were considered as exclusion criteria of the study. It should be noted that all pregnant women referred to this center were evaluated in terms of inclusion and exclusion criteria and those who met the criteria were selected. After explaining the study's objectives, the participants were requested to individually respond to the instrument. In order to observe the ethical considerations in this

study, all subjects participated in the study voluntarily. Also, the study’s objectives were explained to them before completing the questionnaires. They were also assured that the data collected will be analyzed as a group. Finally, questionnaires of 9 patients (8.18%) were excluded as they were incomplete.

The Kolmogorov-Smirnov test was used to evaluate normality of data and the study’s objectives, Pearson correlation coefficients and multiple regression analysis were used in SPSS v18.

**Results**

In this study, data obtained from 101 women was used in the final analysis. The mean and standard deviation for participants’ age were 31.46 ± 2.92, respectively. Nulliparous women accounted for 33.6% of the participants and those with one, two and three children accounted 39.7%, 24.1% and 2.6% of the total subjects, respectively. Also, 62.1% and 37.9% of women were employed and housewives, respectively. The result of Kolmogorov-Smirnov test for normality of data confirmed (z=0.7; p=0.55).

**Table 1. Mean, standard deviation and correlation coefficients of perceived stress and social support with pregnancy anxiety**

Variables	mean	SD	2	3	4	5	6	7	8	9
Anxiety pregnancy	26.27	11.19	0.75*	0.70*	0.72*	0.56*	-0.36*	-0.42*	-0.52*	-0.52*
Fear of having a child with a disability	11.97	4.83		0.89*	0.88*	0.67*	-0.52*	-0.59*	-0.66*	-0.70*
Fear of childbirth	8.65	3.17			0.93*	0.68*	-0.52*	-0.51*	-0.70*	-0.67*
Worries about their appearance	8.77	3.21				0.67*	-0.50*	-0.49*	-0.70*	-0.66*
Negative perception of stress	13.87	6.18					-0.60	-0.46*	-0.60*	-0.58*
Positive perception of stress	12.7	6.25						0.17	0.50**	0.37*
Friends support	7.59	4.59							0.49**	0.86*
Family support	7.64	4.61								0.86*
Social support	14.94	7.86								

**Table 2. Results of regression coefficients of pregnancy anxiety based on perceived stress and social support**

Dependent variable	Predictor variables	R2	F	Sig F	B	SEB	Beta	t	sig	Co linearity (Tolerance VIF)
		0.37	16.93	0.001						
<b>Anxiety pregnancy</b>	Negative perception of stress				0.61	0.19	0.33	3.08	0.003	0.46 (2.14)
	Positive Perception of stress				-0.02	0.17	-0.01	-0.13	0.89	0.57 (1.75)
	Supporting friends				-0.36	0.22	-0.14	-1.63	0.10	0.67 (1.47)
	Family support				-0.57	0.24	-0.23	-2.33	0.02	0.54 (1.85)

Results in table 1 show that pregnancy anxiety has a positive correlation with negative perception of stress ( $r=0.56$ ;  $P<0.001$ ) and negative correlation with positive perception of stress ( $r=-0.36$ ;  $P<0.001$ ), the support of friends ( $r=0.42$ ;  $P<0.001$ ), family support ( $r=-0.52$ ;  $P<0.001$ ) and total score of social support ( $r=0.52$ ;  $P<0.001$ ). Results in table 2 show that 37% of the total variance in the pregnancy anxiety is justified by perceived stress and social support. The results of ANOVA test also indicate that the regression model is significant ( $F=16.93$ ;  $P<0.001$ ).

Results of regression coefficients also indicate that pregnancy anxiety is predicted directly by the negative perception of stress ( $t=3.08$ ;  $P<0.003$ ) and indirectly by family support ( $t=-2.33$ ;  $P<0.02$ ).

**Discussion**

Pregnancy anxiety is a stronger predictor of negative outcomes on infants and children compared to other forms of psychological disorders [33, 34]. Considering the importance of identifying predictors of pregnancy anxiety, this study aims to determine the role of perceived

stress and social support in predicting pregnancy anxiety in women. The results of Pearson’s correlation coefficients in this study showed that pregnancy anxiety has a direct relationship with the negative perception of stress but an indirect relationship with the positive perception of stress. The results of regression analysis also showed that negative perception of stress can significantly predict pregnancy anxiety among pregnant women. These results are consistent with the results obtained by Entringer et al. [18] and Bergman et al. [35], while they are indirectly consistent with the results of Lamb et al. [20]. Pregnancy is a stressful period in a mother’s life and maternal stress coping style can be associated with maternal and neonatal health outcomes. If individuals have a negative perception of stress, they will negatively look at stress as an unpleasant experience. Thus, they will try to protect themselves against being surrounded using avoidance and emotion-focused coping style and through being away from the stressful event. This also may expose the individual at risk of psychological disorder and pregnancy anxiety. On the contrary, when an individual adopts a positive perception of stress, she will consider the stressful event

such as pregnancy to promote personal successes and emphasize the self-efficacy principle. Having such a coping style, in turn, can enhance the psychological well-being.

The results of correlation coefficients analysis showed that pregnancy anxiety is negatively correlated with the support of friends and family along with social support overall score. Results of the regression analysis also revealed that among social support components, family support reversely predicts pregnancy anxiety. These results are consistent with the results obtained by Elsenbruch et al., [22], Spiegel et al., [23], Kamalifard et al., [24], Crockett et al., [25], Chou et al., [28] and Gourounti et al., [29]. Social support is the most powerful coping force to successfully and easily confront stressful situations (including pregnancy) that facilitates bearing the problems for individuals [36]. These results are justified by both hypotheses for the effectiveness of social support on health; social support prevents the negative effects of stress and creates a positive perception of stress by directly providing positive, stable and rewarding emotions; it also reduces negative effects of stress and helps create a positive perception of stress by providing adaptive coping styles based on stress-buffering hypothesis [37]. According to this hypothesis, mental health benefits of social support become apparent primarily in highly stressful situations. According to this hypothesis, social support acts as a reserve and resource for reducing stress effects or effectively deal with stressful situations, such as labor. Therefore, social support is a supportive factor that helps women cope with stressful events.

In general, the results showed that the perception of stress and social support play a role in predicting pregnancy anxiety. Use of correlational design and failure to control some confounding variables such as gestational age, month of pregnancy, and socioeconomic status of families were

the major limitations of this study. Therefore, it is recommended to conduct similar types of research with the control of confounding variables in future. According to the results obtained and considering the consequences of pregnancy anxiety and stress on the maternal and fetal health, as well as the role of style of perceived stress and social support in this variable, it is recommended to boost stress management skills modifying the negative perception of stress to improve pregnancy outcomes and encourage families to give social support to pregnant women.

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