

***Communication skills and anxiety during pregnancy in nulliparous women:  
A cross-sectional study in an Iranian setting***

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**Abstract**

**Background:** Physiological and psychological impacts of pregnancy may relate to anxiety symptoms in nulliparous women. An effective communication between couples can have protective effects against anxiety in this period.

**Objectives:** The present study intended to assess the relationship between communication skills and the anxiety during pregnancy in nulliparous women.

**Methods:** This study adhered to a descriptive cross-sectional design. In this study, 100 nulliparous women of 18 to 40 years old were selected through a two-stage cluster sampling in Health Centers of Sari, Iran (2014-2015). We used the Spielberger's questionnaire to measure pregnancy anxiety and Queendom's questionnaire to assess couples' communication skills. Statistical-descriptive methods and Pearson correlation coefficient were used to analyze the data.

**Results:** The mean age of the women participating in the study was 27.15±4.69. The results showed that there was a negative significant correlation between communication skills and state ( $r=-0.45$ ,  $p<0.01$ ) and trait anxiety ( $r=-0.51$ ,  $p<0.01$ ). However, there was no significant relationship between one of the subscales of communication skills (assertiveness) and state and trait anxiety.

**Conclusion:** This study indicated a negative correlation between communication skills and pregnancy anxiety. Strong communication skills could diminish pregnancy anxiety and eventually lead to higher psychological health.

**Keywords:** Anxiety, communication, Iran, nulliparity, pregnancy

**Introduction**

Pregnancy is known as a sensitive period in women's lives [1]. This period includes huge psychological and biological changes which occur together with the increases in anxiety symptoms [2]. The ways of taking care of pregnant women's physical health have improved in developed countries; however, how to take care their mental and psychological health has remained as an ignored part of obstetrics [3].

The prevalence of anxiety was reported to be different during pregnancy, when the highest levels were observed during the third trimester. In a recent meta-analysis, which was done in 34 countries, the prevalence of self-reported anxiety symptoms was %18.2 in the first trimester, 19.15 in the second trimester, and 24.6% in the third trimester. The results of this study showed that perinatal anxiety is a common phenomenon that requires more attention on the part of health care providers [4].

Pregnancy anxiety has an inverse effect on both mother and baby [2,5,6]. It has been shown that mothers' anxiety during pregnancy can cause low birth weight and premature birth in babies [2,7]. Moreover, it can cause a wide spectrum of side effects on child such as neurological issues, emotional problems, and Attention Deficit Hyperactivity Disorder (ADHD) or impaired cognitive development [3]. Women suffering from pregnancy anxiety visit their doctors more frequently, which is often related to their fear of delivery and eventually leads to a selective Caesarean section [6].

Although depression and anxiety disorder before pregnancy are strong predictors of prepartum depression and anxiety disorder, psychosocial (mother's education), personal (low self-confidence), and interpersonal factors (partnership satisfaction and social support) play important roles in this regard [8].

In a study by Soto-Balbuena, the predicting factors of anxiety include smoker, changes in social relationships, and the presence of a previous illness [9].

Healthy relationships between pregnant couples play a critical role in the mental health of families. Parenting for spouses with good communication skills is one of their best and most pleasant life experiences. An effective communication between couples could enhance their physical and mental health and encourage them to have more children [10]. A worthy relationship with a spouse can act as a protective measure against many stressors [7]. Previous studies indicated that partners' relationship affects the psychological adjustment during the transition to parenthood process in the couples [11].

Various midwifery measures such as mental imagery, slow and progressive relaxation, music-therapy, and massage and body relaxation have been considered to meet people's psychological and physical needs [12]. Studies have stated that communication predicts marital satisfaction independently [13], and marital satisfaction itself is a predictor of pregnancy anxiety [14]. Therefore, communication skills are related to marital satisfaction which leads to pregnancy anxiety. However, the relationship between communication skills and pregnancy anxiety has been rarely studied. Considering the importance of anxiety and its effects on the psychological and

physical health of the pregnant mother, the embryo, and the baby, we designed this study to determine the relationship between communication skills and pregnancy anxiety. The results of this study and timely intervention can help to avoid pregnancy anxiety and its consequences. The purpose of this study was to assess the relationship between communication skills and pregnancy anxiety in nulliparous women.

## Methods

This descriptive- correlational study, approved by the ethics committee of Mazandaran University of Medical Sciences [ethical code: 124], was performed on nulliparous women at 4 public and governmental health centers during 2014 and 2015. The study sample included 100 nulliparous women who were recruited through two-stage sampling. To choose the samples, at first, four health centers were selected through cluster sampling. Clusters were randomly selected from north, east, west, and south Sari, Iran. In the next step, 25 nulliparous mothers were randomly chosen from among all cases.

According to a study conducted by Delaram and Soltanpour in 2012 entitled as "The Effect of Counseling in the Third Trimester on Anxiety of Nulliparous Women at The Time of Admission for Labor" [15], the sample size of the present study was obtained through the following formula.

$$n = \frac{\left( z_{1-\frac{\alpha}{2}} \sigma \right)^2}{d^2} \square 100, \alpha = 0.05 \quad \sigma = 6.9 \quad d = 1.5$$

Participants' specifications included willingness of pregnant women to participate in the study (documented consent), their planned or unplanned pregnancy, and women with no records of mental retardation, nulliparous, and inflicting pregnancy complications such as preeclampsia and gestational diabetes. Nulliparous women who met the inclusion criteria entered the study. After gaining the informed consent, the participants received the questionnaires including questions about pregnancy anxiety and communication skills.

In order to assess the communication skills of nulliparous women, Queendom's questionnaire of communication skills was used. This questionnaire includes items of communication

skills test, which was revised according to the five-option Likert scale. This test was devised by Queendom in order to assess communication skills in adults. The questionnaire has 34 phrases (items) and describes communication skills. The respondents specified how consistent their previous situation was via answering every item on a five-degree scale from 1 (never) to 5 (always). The target communication skills are listening, message understanding (understanding verbal and nonverbal message), understanding and attitude toward the message (insights to the communication), controlling and managing the emotions (emotional regulation), and assertiveness in communication. Each question has a score ranging from one to five. Therefore, the answer "never" receives the score of 1, "rarely" 2, "sometimes" 3, "often" 4, and "always" 5. The possible score ranges for every person is from 34 to 170. Some of the statements are reversely scored due to their content [16]. The reliability of this questionnaire was measured via Hussein Chary and Fadakar's (2005) method using factor analysis. Previously, the validity of this method was found to be 0.71 and 0.69 in a sample of 733 school and university students, respectively [17]. Furthermore, Yousefi (2006) reported the reliability of this questionnaire as 0.81 using Cronbach's alpha and as 0.77 using split half validity [18].

Spillberger's questionnaire was used to measure pregnancy anxiety. This test includes 40 questions, 20 of which measure situational anxiety and the remainder measure trait anxiety. There are four-option answers including very little, a little, a lot, and very much, each of which

gets the score of 1 to 4, respectively. The sum of the scores of situational and trait anxiety is anxiety's total score, where higher scores show higher anxiety [18]. Score (0-19) is normal anxiety, (20-40) mild anxiety, (41-60) average anxiety, and (61-80) severe anxiety [20]. Mahram standardized this questionnaire in Iran and calculated its reliability to be 0.91 through Cronbach's alpha [21]. In different studies, including a study by Aghamohammadi who used this tool on 150 patients under surgery, the reliability was reported to be 0.97 [22]. This test has been utilized in most research articles in western countries as well. In previous studies, the reliability of the test was reported to be 0.79 in trait anxiety and 0.94 in situational anxiety [12]. The original questionnaire showed a good reliability and validity in assessing anxiety in women [23]. The data were analyzed via the SPSS software version 22 using statistical indices and methods such as frequency, mean, standard deviation, Pearson's correlation coefficient, and partial coefficient correlation. The significance level was considered to be less than 0.05.

### Results

The results of the demographic characteristics demonstrated that the mean age of the women and their spouses was  $27.15 \pm 4.69$  and  $31.09 \pm 4.48$ , respectively. Furthermore, the mean pregnancy age of the participants was  $28.66 \pm 9.13$  weeks (see Table 1). The frequency and percentage of pregnant women based on education and state anxiety (STAI-S) and trait anxiety (STAI-T) are shown in Table 2.

*Table 1: Mean and standard deviations of demographic characteristics of study subjects*

Variables	Mean $\pm$ SD	Minimum	Maximum	Total number
Biological age	27.15 $\pm$ 4.69	18	40	100
Pregnancy age	28.66 $\pm$ 9.13	5	41	100
Spouses' age	31.09 $\pm$ 4.48	18	48	100

**Table 2: Frequency and percentage of pregnant women based on education and state anxiety (STAI-S) and trait anxiety (STAI-T)**

Variables	Category	(Frequency(Percent
Education	Below high school diploma	10(10%)
	High school diploma	38(38%)
	College degree	11(11%)
	B.A/B.S	35(35%)
	M.A/M.S/Phd	6(6%)
Situational or state anxiety (STAI-S)	Mild	60(60%)
	Moderate	40(40%)
	Severe	0(0%)
	Total	100(100%)
Underlying or trait anxiety (STAI-T)	Mild	54(54%)
	Moderate	44(44%)
	Severe	2(2%)
	Total	100(100%)

To assess the correlation among the research variables, Pearson's correlation analysis was used. The correlation coefficient between

communication skills and its subscales and state and trait anxiety are shown in Table 3.

**Table 3: Correlation coefficient between communication skills and its subscale with state and trait anxiety**

Subscale of communication skills	Anxiety	Situational or state anxiety (STAI-S)		Underlying or trait anxiety (STAI-T)	
		Correlation coefficient (r)	Significant level (p)	Correlation coefficient (r)	Significant level (p)
communication skills		-0.451**	0.000	-0.516**	0.000
listening		-0.244*	0.014	-0.306**	0.002
Emotional regulation		-0.269**	0.007	-0.297**	0.003
Message understanding (Understanding verbal and nonverbal message)		-0.370**	0.000	-0.456**	0.000
Insight to the communication		-0.320**	0.001	-0.281**	0.005
Assertiveness		-0.098	0.333	-0.141	0.161

\* $p < 0.05$     \*\* $p < 0.01$

According to the results of the correlation analysis presented in Table 3, there was a significant negative correlation between communication skills and state ( $r = -0.451$ ,  $p < 0.01$ ) and underlying anxiety ( $r = -0.516$ ,  $p < 0.01$ ). It can be inferred that as the communication skills increased, anxiety decreased. In addition, there was a significant negative correlation between all subscales of communication skills (except assertiveness) and state and underlying anxiety. No significant correlation was observed between the subscale of assertiveness and state ( $r = -0.098$ ,  $p = 0.33$ ) and trait anxiety ( $r = -0.141$ ,  $p = 0.16$ ).

### Discussion

The results showed that there was a correlation between communication skills and its subscales and pregnancy anxiety, such that the stronger communication skills pertained to decreased levels in both state and underlying anxieties. Moreover, women with weaker communication skills showed higher levels of anxiety.

The results of this study suggest that good communication skills could remarkably diminish the trait and state anxieties. Moreover, a noticeable negative correlation was found between the skills of listening, emotional regulation, understanding verbal and nonverbal messages, and insight to the communication (as

elements of communication skills) and state and trait anxiety. However, there was no significant relationship between assertiveness in communication and both trait and state anxieties. There are rare research studies directly showing the relationship between communication skills and pregnancy anxiety.

In a study by Nicoloro, those pregnant women who had good relationships and better communications with their care givers experienced less anxiety during mid to late pregnancy [24].

Many studies showed that higher communication skills caused higher marital satisfaction, and, as a strong variable, marital satisfaction had an important role in decreasing pregnancy anxiety. Rezazadeh (2008) realized that there was a significant positive relationship between the couple's communication skills and their marital satisfaction. Besides, marital compatibility in couples with strong communication skills was significantly more than the one in couples with weak communication skills [25]. In a similar vein, Khawaja (2010) indicated that there was a significant relationship between communication skills and marital satisfaction in married students. Moreover, there was a positive correlation between marital satisfaction and elements of communication skills including vision in relationship, understanding verbal and nonverbal messages, listening skill, emotion regulation, and assertiveness [26]. In another study, Litzinger showed that marital satisfaction had a close relationship with good communication skills [13]. Furthermore, Esmaeelpour's (2013) findings showed that communication skills had a major role in marital satisfaction [27]. Many studies have shown the positive effects of teaching communication skills on improving different aspects of life including marital satisfaction and psychological health [28,29]. According to the previous studies, different risk factors such as low level of marital satisfaction are related to pregnancy anxiety [30,31]. More interestingly, some studies highlighted marital satisfaction as the most important predicting factor of pregnancy anxiety [7,14]. In other words, higher marital satisfaction would be equal to lower anxiety during pregnancy. This relationship reveals the importance of husbands' role in easing or

exacerbating the pregnancy anxiety in women [32].

Babanazari showed that the demographic factors such as age, education, and high marital satisfaction play significant roles in anxiety level at a specific trimester of pregnancy. Their results indicated the role of marital satisfaction as the strongest factor in predicting pregnancy anxiety. This relationship firmly states the husbands' important role in easing or exacerbating the pregnancy anxiety. Being in a stressful relationship or abused by husbands could increase the risk of mental health issues in women during pregnancy. In fact, a poor marital relationship is the most consistent predicting variable of anxiety and other mental health problems in pregnancy. Therefore, the most important factors in women's adjustment to mental pressures in this period are husbands' emotional supports and the safety of the conjugal environment. Lack of attachment to family and general disruption in marital relationships can increase anxiety level and consequently decrease pregnant women's mental health [14].

A good relationship between couples can have a protective effect against many stressors. In contrast, an unsatisfactory relationship between couples is an important predictor of mothers' emotional distress during pregnancy [7]. Figueiredo's study revealed that those women who had less positive relationships with their partners showed more stress in parenting process than those with positive relationships. Additionally, the women who had more negative relationships with their partners showed more stress than the ones with less negative relationships. In fact, psychological adjustment during transition to parenthood of men and women is affected by the couples' relationship [11].

The results of the present study highlighted an indispensable role of good communication in preventing anxiety during pregnancy. For preventing the consequences of women's anxiety in pregnancy, improving the communication skills can lead to better outcomes in both mother and baby. Due to several limitations, the results of the present study should be interpreted with great caution. The cross-sectional design of this research limits the generalizability of the findings related to communication skills and anxiety during pregnancy to the whole society. Moreover,

the small sample size restricts the interpretation of the results in the present study. Thus, further longitudinal studies with larger sample sizes are needed to prove this association.

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**Conflict of interest:** The authors declare that they have no conflict of interests.

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