

Research Article

## ANXIETY AND DEPRESSION LEVELS OF WOMEN'S PRE AND POST-LABOR STAGE AND INFLUENCING FACTORS

Gulseren Daglar<sup>a</sup>, Dilek Bilgic<sup>b</sup>, Selma Koc<sup>c</sup>, Banu Yörük<sup>c</sup>, Pakize Coskun<sup>c</sup><sup>a</sup> Asst. Prof. Cumhuriyet University Faculty of Health Sciences, Department of Midwifery, Sivas, TURKEY<sup>b</sup> Asst. Prof. Faculty of Nursing, Dokuz Eylül University, Izmir, TURKEY<sup>c</sup> Midwife, Cumhuriyet University Faculty of Health Sciences, Department of Midwifery, Sivas, TURKEY

### ARTICLE INFO

#### Corresponding Author:

Gulseren Daglar  
Assistant Professor PhD,  
Cumhuriyet University Faculty of  
Health Sciences, Department of  
Midwifery  
58140, Sivas, Turkey  
[gulserendaglar@gmail.com](mailto:gulserendaglar@gmail.com)

**Keywords:** Pre-labor stage, post-labor stage, anxiety, depression, midwifery



DOI: <http://dx.doi.org/10.15520/ijmhs.2016.vol6.iss4.127>

### ABSTRACT

**Introduction and Objective:** The pregnancy and childbirth described as a development crisis holds an important place in woman's life. While many women is easily adapting to physiological, psychological and social changes occurring with pregnancy and birth, the problems at different levels can be seen in some women. Especially anxiety and depression from these problems can adversely affect women during the pregnancy, the delivery and the postpartum period. This study was conducted to determine women's pre and post-labor stage anxiety and depression levels and influencing factors.

**Materials and Methods:** This study made as cross-sectional descriptive, was conducted in the delivery room and postpartum service of the State Hospital for three months. Sample was composed of 112 women. Personal Information Form and HAD (Hospital Anxiety and Depression) Scale was applied to the pregnant women who agreed to participate in research by the researchers, and their anxiety and depression levels were assessed. HAD scale was applied twice to the pregnant women when they were accepted to the delivery room and before leaving the hospital after birth. To determine the association between variables were the Student t-test, Kruskal Wallis Analysis of Variance, Mann Whitney U test for quantitative data. Level of significance was taken at p-values less than 0.05.

**Results:** The average age of pregnant women is  $25.57 \pm 5.80$  years. It was determined that period of study for 67.0% of pregnant women was 12 years and below, 54.5% of them lived in nuclear family, 92.0% did not work and 92.0% was in a good relationship with her husband. It was found that 38.4% of the pregnant women experienced third pregnancy and above, 43.8% of them had no living children, 92.9% were regularly followed and 78.6% wanted the pregnancy. It was found that pre-labor anxiety and depression scores of pregnant women (respectively  $9.41 \pm 4.17$ ;  $7.62 \pm 4.09$ ) were significantly higher than (respectively  $t=4.802$ ,  $p<0.001$ ;  $t=7.886$ ,  $p<0.001$ ) post-labor anxiety and depression scores (respectively  $7.66 \pm 3.21$ ;  $5.39 \pm 3.61$ ).

**Conclusion:** The pre-labor anxiety and depression scores of pregnant women are considerably higher than the post-labor period. Anxiety and depression directly affect the maternal and infant health during pregnancy and in the postpartum period, therefore the possible problems must be found by determining the levels and causes of anxiety and depression.

©2016, IJMHS, All Right Reserved

### INTRODUCTION

Physical, mental and social changes that women experience in their life-cycle make them more prone to psychiatric disorders. Women may be more prone to depression in periods when there is a change in their reproductive hormones such as especially in puberty, use

of oral contraceptives, late luteal phase of the menstrual cycle, pregnancy, puerperality and perimenopause period (Akdeniz & Gönül, 2004). Okyay et al. (2012) found that 35.5% of women in fertile age have anxiety and depression symptoms, Dönmez et al. (2000) also found that being a

woman increases the risk of anxiety as 3.56 times and the risk of mood disorders as 2.07 times.

The pregnancy and childbirth described as a development crisis holds an important place in woman's life. While many women is easily adapting to physiological, psychological and social changes occurring with pregnancy and birth, the problems at different levels can be seen in some women (Ekuklu et al., 2004; Ust et al., 2013). Especially anxiety and depression from these problems can adversely affect women during the pregnancy, the delivery and the postpartum period.

It was reported on the community based studies that affective disorders in pregnancy was 70% (Ali et al., 2012), the anxiety was 15-29% and the prevalence of depression was 17-18% (Felice et al., 2007; Nasreen et al., 2011; Ali et al., 2012). It is as follows in our country's (Turkey) notification, the anxiety was 12-34% and the depression was 19-53% (Tekgöz et al., 2009; Yilmaz & Beji, 2010; Tunc et al., 2012; Daglar & Nur, 2014).

These studies show us that anxiety during pregnancy is fairly high level (Correia & Linhares, 2007) and this high level is seen particularly in the third trimester (Lee et al., 2007; Figuerido & Conde, 2011). Lee et al. (2007) stated that 54% of pregnant women is anxious, 37.1% is in depression and in both case, they are more common and severe in the first and third trimesters. The reason of the anxiety experienced during pregnancy may be fetus-oriented rather than woman herself. Having a malformed or wounded, hurt baby and operated birth or doing anything wrong by leaving alone in a foreign environment or how is it going to be (Szeverenyi et al., 1998), the baby's health status and potential harm to the baby (Sahin & Kılıcarlan, 2010; Dönmez et al., 2014) by some risks that may arise in the birth lead to anxiety in pregnant women.

Postpartum period is a process that mother learns new roles, communicates with the baby, has to care for the baby and to deal with the problems related to the baby (Sword & Watt, 2005). Women are under significant risk of psychiatric disorders in the first year after birth (Bloch et al., 2006; De Tychev et al., 2008). The knowing of women's mental health and factors affecting mental health during labor and after birth will ensure that these factors will affect woman less. This study was conducted to determine women's pre and post-labor stage anxiety and depression levels and influencing factors.

## MATERIAL AND METHOD

The universe of this research planned as cross-sectional consisted of women having normal delivery and having a healthy newborn baby. Sampling; women in labor literate, speaking Turkish, having no sensory loss to prevent communication, with no problem with detecting and replying questions, with no diagnosis of high-risk pregnancy, that cervical dilation has not exceed 3 cm at vaginal examination and who agreed to participate in the study have been included. The study was conducted between May 15 to August 15 2014 and it was interviewed twice with 112 women meeting the sampling criteria. The first interview was performed when the pregnant women accepted to delivery room and the second interview was carried out before leaving the hospital after birth. By reading Information of Volunteer Consent Form at the interview, it was taken the consents from the mothers. Every stage of the research was conducted in accordance with ethical principles. Hospital Anxiety and Depression

(HAD) scale was filled in order to determine the level of anxiety and depression with the Personal Information Form to those who agree to participate in research. HAD scale was filled by researchers when they accepted to the delivery room and before leaving the hospital after birth.

**Personal Information Form:** This form is composed of questions related to women's demographic and obstetric characteristics

**"Hospital Anxiety and Depression (HAD) scale":** HAD scale was developed by Zigmond and Snaith in 1983. It is a self-rating scale used to determine the risk of anxiety and depression and to measure the level and the intensity of anxiety and depression in people. 7 items (odd numbers) of the scale consisting a total of 14 questions assess anxiety and 7 items (even numbers) assess depression (Zigmond & Snaith, 1983). Validity and reliability studies in our country were conducted by Aydemir et al. (1997). It was found that Cronbach's alpha coefficient was 0.8525 for anxiety subscale under the reliability study and 0.7784 for depression subscale. Breakpoints of the Turkish form were found as 10 for anxiety subscale and as 7 for depression subscale (Aydemir et al., 1997). 10 and above points taken from anxiety subscale suggest the presence of anxiety and 7 and above points taken from the depression subscale also suggest the possibility of depression.

### Statistical analyses:

Data were analysed using Statistical Package for Social Sciences (SPSS for Windows 16.0). Descriptive statistics including mean and frequency distribution were calculated for categorical data. To determine the association between variables were the Student *t*-test, Kruskal Wallis Analysis of Variance, Mann Whitney U test for quantitative data. Level of significance was taken at *p*-values less than 0.05.

## FINDINGS

### Supplementary Characteristics

The average age of 112 women in the study was determined as 25.57±5.80 years, it was found that most of them was in (%82.1) 20-34 age group. It was determined that period of study for 67.0% of pregnant women was 12 years and below, half of them (50%) perceived the economic status as equivalent to the the profits and losses and 54.5% of them lived in nuclear family, 92.0% did not work and 92.0% was in a good relationship with her husband. It was found that 38,4 % of the pregnant experienced third pregnancy and above, 43.8% of them had no living children, 78.6% wanted the pregnancy and 92.9% was regularly followed. 49% of those regularly made the follow-up made within both hospital and Family Health Centers (FHC), 67% did not receive information about the birth during the follow-up, 86.5% of those stating that information is received, obtained this information from the health workers, 13.5% from the other resources.

### Pre and Post-Labor Stage Anxiety and Depression Levels of Women

It was found that 48.2% of women pre-labor, 24.1% post-labor anxiety scores, 58.9% pre-labor, 32.1% post-labor depression scores was determined over clinically significant level (Figure A1). It was determined that women's pre-labor anxiety and depression scores (respectively 9.41±4.17; 7.62±4.09) were higher significantly than post-labor anxiety and depression scores (respectively  $t=4.802$ ,  $p<0.001$ ;  $t=7.886$ ,  $p<0.001$ ) (Table B1).

There was no statistically significant difference between socio-demographic and obstetric characteristics of and pre and post-labor anxiety scores of the mothers ( $p>0.05$ ) (Table B2, B3). In contrast, there was statistically significant difference between training and employment status and pre and post-labor depression score ( $p<0.05$ ) (Table B2). It was found that pre and post-labor depression mean scores of pregnant women who were unemployed and had a training time in 12 years and below were significantly higher than those who were employees and had a training time in 12 years and above (respectively pre-labor  $p=0.034$ ,  $p=0.017$ ; post-labor  $p=0.032$ ,  $p=0.003$ ). Moreover, there was statistically significant difference between pregnancy request status and pregnancy follow-up location and pre-labor depression score ( $p<0.05$ ), there was no statistically difference between post-labor depression score ( $p>0.05$ ) (Table B3). It was found that pre-labor depression levels of unintended pregnancies and those made the pregnancy follow-up in both the hospital and the FHC were higher (respectively  $p=0.042$ ,  $p=0.029$ ).

#### DISCUSSION

It was found in our study, anxiety and depression levels that women experience in pre-labor were higher than post-labor anxiety and depression levels. It was determined that sociodemographic and obstetric characteristics of pregnant women did not affect pre and post-labor anxiety levels. Pre and post-labor anxiety and depression level affected education and working status of women and pregnancy request status and pregnancy follow-up location only affected pre-labor depression level.

Because female in fertility period had a important physiological and psychological changes with pregnancy and delivery, pregnancy and delivery led to anxiety. When considering the related findings in our study, it was observed that; pre-labor anxiety scores of 48.2% of the pregnant women and depression scores of 58.9% were above clinically significant level. The expectant mother came to the delivery room for the delivery feels alone herself, frightened and in fear, she can not know what is waiting for her and baby. This is vital factor causing an increase of women's anxiety in antepartum period. In the studies when the literature is examined, it is seen that thoughts on that the baby will die or suffer cause to fear and anxiety for pregnant women (Melender, 2002; Sahin et al., 2009). In addition, Ust and Pasinlioglu (2015) stated that "the concerns for the behaviors of health personnel during the delivery" are in a significant level in the anxiety experienced by pregnant women. In our study, we can explain anxiety and depression levels we have determined in a high level with these reasons.

Anxiety was determined in 32-34.1% of the pregnant women and depression in 32.4-44.7% in the similar studies made with HAD scale (Cakir & Can; Tunc et al., 2012), Akbas et al. (2008) determined a risk of depression in 57.7% of the pregnant women in the study made on pregnant over 36 weeks. The rates in our study are similar to the results of the study.

In the researches, it was found that the anxiety levels of pregnant women admitted to hospital for birth similar to our study were higher than the anxiety levels occurred during the postpartum period (Sevil et al., 2004; Kaplan et al., 2007; Hagali, 2010; Aliopour et al., 2011; Dönmez et al., 2014). In their study, Fairbrother et al. (2016) identified 15.8% anxiety and 17.1% depression in antenatal period; 3.9% anxiety and 4.8% depression in the

early postpartum period. The results of the study also show us that the pregnancy anxiety and depression was encountered much more than the postpartum period and it supports the results we obtained in our study. As in Sevil et al. (2004)'s study, pre-labor depression scores of the women were higher than post-labor depression mean scores in our study.

Low levels of education, inability to satisfy with the marriage, perinatal stressors, lack of the necessary medical conditions for baby, changes in living conditions and distressed memories about their families can be among the factors that increase the risk of exposing anxiety disorders during pregnancy (Kocabasoglu & Baser, 2008). Lee et al. (2007) stated that the youngest age is a factor for depression in the pregnancy. It was found in our study that the age does not affect the depression and anxiety level. There are studies supporting our conclusion in the literature (Sevil et al., 2004; Akbas et al., 2008; Tekgöz et al., 2009).

In our study, women with relatively higher levels of education had lower depression scores. In accordance with our study conclusion, there are studies showing that the depression mean scores of the pregnant women with higher levels of education are significantly lower. Gotlib and Whitten (1987) stated that women's efficiency increases as the educational level of women rise her own lives and her self-esteem rises and the rates of depression decreases. In our study, there are studies supporting the result of a lack of relationship between the level of education and the anxiety (Sevil et al., 2004; Akbas et al., 2008). Sertbas (1998) found that trait anxiety level of those with higher levels of education is lower, Ust et al. (2013) found that anxiety mean scores of pregnant women with low levels of education are higher. While determining in our study the depression score decreases as the level of education increases, it was found that the level of education does not affect the level of anxiety. Although the pregnancy and birth cover many unknown, women become more conscious as the level of education increases and they can access to the information they need and so they can partly reduce their anxiety.

Although it was determined that pre-labor anxiety level is not affected by the the working status of pregnant women in our study, both pre and post-labor depression level is affected from the working status. There are the similar studies showing there is no relationship between the working status and anxiety (Sevil et al., 2004; Akbas et al., 2008; Tekgöz et al., 2009), and determining that unemployed pregnant have high levels of depression (Gotlib & Whitten, 1987).

Another issue worrying the expectant mother is also the economic factors. Expenditures required by the baby's birth and after can lead to anxiety for the mother. There are many studies showing that depressive symptoms are more common in women with low socioeconomic conditions in particular during pregnancy (Herrera et al., 1992; Honjo et al., 2003; Rich-Edwards et al., 2006). In our study as in some studies, it has been determined that the level of income does not affect depression and anxiety levels. (Sevil et al., 2004; Akbas et al., 2008; Ust et al., 2013) There is no relationship between depression and anxiety with the level of income in Akbas et al's (2008) study, this result is compliance with our study result. However, there are studies stating that depression and anxiety scores decrease as the monthly income increases (Daglar & Nur,

2014; Cakır &Can), the pregnancy depression levels of those having low incme level are high (Tunc et al., 2012) It was found in the another study that postpartum depression mean score is significantly higher (Sevil et al., 2004).

In the studies of Cakır and Can were determined that the prevalence of depression increased as the number of pregnancy increased, and there was no significant difference in anxiety, the anxiety was more often in those who experienced the first pregnancy. In the study of Sevil et al (2004), significant difference was found between post-labor anxiety while there was no significant difference between the number of pregnancy and pre-labor anxiety. In the same study again, a significant relationship was found between the number of pregnancy and pre and post-labor depression scores. It was determined in our study, the number of pregnancy did not affect both pre and post-labor anxiety and depression level.

Unintended pregnancy was emerged in a number of studies as an important risk factor for the depression. It was stated that unintended pregnancy, problematical pregnancy, early and late labor, difficult or troubled labor may lead to permanent physical or mental disabilities, break self-development and self-power, reduce power to cope with psychosocial stresses. (Rich Edwards et al., 2006; Dietz et al., 2007; Lee et al., 2007). In conclusion of our study, it was supported that the status of intended pregnancy was effective on prenatal depression. In Cakır and Can's studies, a significant difference was observed with depression score although there was no significant difference between anxiety score with the status of intended pregnancy. Depression score was higher in those who did not want the pregnancy (Cakır & Can; Tunc et al., 2012) Sevil et al. (2004) determined that pre-labor depression scores of those who want the pregnancy were statistically significantly lower than those did not want pregnancy, there was no significance between and post-labor depression score. The results of this study are consistent with our results.

In Cakır and Can's study, depression was found in 32.7% of the pregnant women who were informed and followed by the FHC during the pregnancies and in 27.3% of those who was not followed. Likewise, anxiety was found in 35.2% of the pregnant women who were informed and followed by the FHC during the pregnancies and in 18.2% of those who was not followed. In our study, it draws attention to be high prenatal depression scores of those who was performed the pregnancy follow-up in both FHC and hospital. We can explain especially in the last trimester, feelings of expectant mothers, anxiety and fear, distress by pregnancy, the mother's sense of loss, want to see the baby,

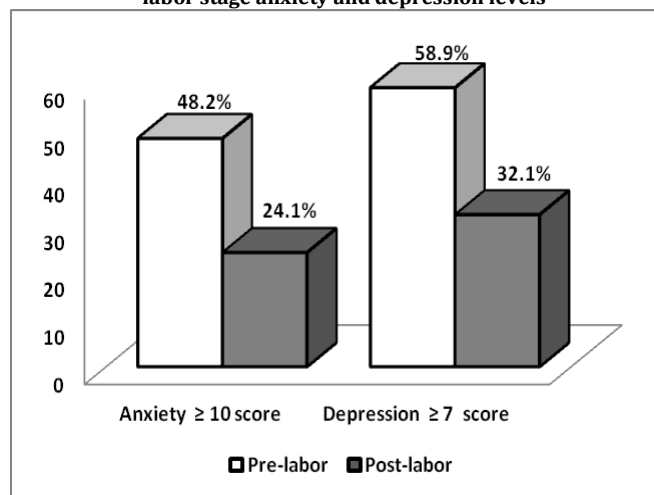
but afraid of birth, they want to make the pregnancy follow-up from a few centers not a single center because she worries about the delivery and the child's healthy as the delivery comes.

It should be noted that our study has some limitations. These pregnant women were not examined and undiagnosed by a psychiatrist. Assesments were made by applying the scales, the reviews on the obtained scores. Depression and anxiety can be developed by the effect of the complex factors, therefore it is not true to associate with only a reason of the pregnant woman and to try to explain. In addition, our study has been made in a single health institution and the results can not be generalized to all pregnant women and the number of samples is fewer, these are among the limitations of our study.

**As a result;** It was determined in our study that women had significantly anxiety and depression symptoms in pre and post-labor period, especially pre-labor anxiety and depression symptoms were far higher, and there was a significant difference compared to post-labor period. This work is very important to reveal these results.

Anxiety and depression experienced by pregnant women directly affect maternal and infant health, therefore, the presence of anxiety and depression as well as medical and physical evaluation must be evaluated in pregnancy follow-up, her admission to the deliver room for the delivery and in her postpartum period and in line with the detected cases, the necessary maintenance should be in a holistic approach. Dissemination of childbirth preparation classes, supporting participation of pregnant women and their husbands and ensuring a more positive pregnancy and birth experience can be recommended.

**Figure A1. According to the cut-off value of women, pre and post-labor stage anxiety and depression levels**



**Table B1. A comparison of women's pre and post-labor stage anxiety and depression mean scores (n=112)**

Measurement time	Anxiety scores		p	Depression scores		p
	Mean±SD			Mean±SD		
Pre-Labor	9.41 ± 4.17		t= 4.802	7.62±4.09		t= 7.886
Post-Labor	7.66 ± 3.21		< 0.001	5.39±3.61		< 0.001

**Table B2. A comparison of pre and post-labor anxiety and depression mean scores according to women's socio-demographic characteristics (n=112)**

Characteristics	Anxiety scores		Depression scores	
	Pre-Labor Mean±SD	Post-labor Mean±SD	Pre-Labor Mean±SD	Post-labor Mean±SD
<b>Age groups (Years)</b>				
≤ 19 age (n:13)	10.15±4.27	8.76±3.03	9.00±3.48	6.35±3.59
20 -34 age (n:92)	9.27±4.12	7.48±3.17	7.39±4.17	5.11±3.59
≥35 age (n:7)	9.85±5.11	7.85±4.05	8.14±4.01	6.85±3.53
<b>P value</b>	0.736	0.333	0.278	0.179
<b>Level of education</b>				
Illiterate <sup>a</sup> (n:5)	11.80±4.91	8.00±4.00	8.80±0.44	7.60±2,70
Primary school <sup>b</sup> (n:75)	9.32±3.91	7.92±3.09	8.18±3.58	5.88±3,55

High school <sup>c</sup> (n:32)	9.25±4.66	7.00±3.37	6.12±5.09	3.90±3.44
<b>P value</b>	<i>0.520</i>	<i>0.185</i>	<b>0.017</b>	<b>0.003</b>
<b>Significant difference</b>			<b>b &gt; c</b>	<b>b &gt; c</b>
<b>Employment status</b>				
Income less than expenditure (n:49)	9.79±4.54	7.55±3.18	6.97±4.38	5.02±3.56
Income equal expenditure (n:56)	8.91±3.93	7.75±3.36	7.94±3.81	5.62±3.69
Income more than expenditure (n:7)	10.7±3.19	7.71±2.42	9.57±3.69	6.14±3.48
<b>P value</b>	<i>0.418</i>	<i>0.818</i>	<i>0.167</i>	<i>0.532</i>
<b>Residence</b>				
Province (n:65)	9.72±4.33	7.46±3.19	7.04±4.13	4.95±3.48
County (n:18)	9.22±3.75	7.83±3.11	7.72±4.59	5.22±3.50
Village (n:29)	8.82±4.12	8.00±3.40	8.86±3.48	6.48±3.84
<b>P value</b>	<i>0.703</i>	<i>0.622</i>	<i>0.075</i>	<i>0.155</i>
<b>Employment status</b>				
Employed (n: 9)	7.55±3.28	6.55±2.74	5.00±4.18	3.00±2.23
Unemployed (n:103)	9.57±4.21	7.75±3.24	7.85±4.02	5.60±3.63
<b>P value</b>	<i>0.174</i>	<i>0.218</i>	<b>0.034</b>	<b>0.032</b>
<b>Type of family</b>				
Expanded (n:51)	9.29±4.05	8.03±3.15	8.35±3.68	5.92±3.53
Nuclear (n:61)	9.50±4.30	7.34±3.25	7.01±4.34	4.95±3.64
<b>P value</b>	<i>0.938</i>	<i>0.750</i>	<i>0.267</i>	<i>0.691</i>
<b>Relationship with her husband *</b>				
Medium level (n:9)	9.77±4.40	8.44±2.50	9.11±4.48	7.33±4.50
Good level (n:103)	9.37±4.17	7.59±3.27	7.49±4.05	5.22±3.49
<b>P value</b>	<i>0.668</i>	<i>0.298</i>	<i>0.192</i>	<i>0.157</i>

\*Based on the mothers' statements

Table B3. A comparison of pre and post-labor anxiety and depression mean scores according to women's obstetrics characteristics (n=112)

Characteristics	Anxiety scores		Depression scores	
	Pre-Labor Mean± SD	Post-labor Mean± SD	Pre-Labor Mean± SD	Post-labor Mean± SD
<b>Number of pregnancy</b>				
1 (n:44)	10.15±4.37	8.31±3.05	7.20±4.70	5.40±4.05
2 (n:25)	8.72±3.95	7.84±3.97	7.40±3.73	4.84±2.77
≥3 (n:43)	9.04±4.06	6.88±2.76	8.18±3.62	5.69±3.58
<b>P value</b>	<i>0.334</i>	<i>0.055</i>	<i>0.383</i>	<i>0.700</i>
<b>Number of birth</b>				
No (n:49)	10.16±4.35	8.08±3.02	7.40±4.74	5.28±3.95
1 (n:28)	8.92±3.77	7.60±3.83	7.82±3.61	5.07±2.43
≥2 (n:35)	8.74±4.17	7.11±2.92	7.77±3.52	5.80±3.93
<b>P value</b>	<i>0.230</i>	<i>0.195</i>	<i>0.761</i>	<i>0.760</i>
<b>Request pregnancy status</b>				
Yes (n:88)	9.31±4.11	7.67±3.27	7.26±4.28	5.09±3.52
No (n:24)	9.75±4.45	7.62±3.03	8.95±2.97	6.50±3.77
<b>P value</b>	<i>0.817</i>	<i>0.855</i>	<b>0.042</b>	<i>0.068</i>
<b>Follow pregnancy status</b>				
Regular (n:104)	9.40±4.26	7.63±3.31	7.50±4.14	5.27±3.56
Irregular (n:8)	9.50±2.92	8.00±1.51	9.25±3.10	6.87±4.12
<b>P value</b>	<i>0.812</i>	<i>0.324</i>	<i>0.189</i>	<i>0.202</i>
<b>Where follow-up pregnancy</b>				
FHC <sup>a</sup> (n:23)	8.60±4.01	7.78±3.55	7.65±3.29	5.39±3.24
Hospital <sup>b</sup> (n:30)	9.36±3.93	7.16±3.06	5.83±4.00	4.20±3.43
FHC and Hospital <sup>c</sup> (n:51)	9.78±4.57	7.84±3.37	8.41±4.33	5.86±3.69
<b>P value</b>	<i>0.622</i>	<i>0.671</i>	<b>0.029</b>	<i>0.107</i>
<b>Significant difference</b>			<b>c &gt; b</b>	

FHC: Family Health Centre

## ACKNOWLEDGEMENTS

This study was accepted as poster presentation at Care4 International Scientific Nursing and Midwifery Congress, 4-6 February 2015 in Antwerp, Belgium.

We are especially grateful to the mothers who participated in this study.

## REFERENCES

- [1]. Akbas E, Virit O, Kalenderoglu A, Savas AH, Sertbas G. Gebelikte sosyodemografik deęişkenlerin kaygı ve depresyon düzeyleriyle ilişkisi [Association between sociodemographic variables with the levels of depression and anxiety in pregnancy]. Archives of Neuropsychiatry 2008; 45:85-91.
- [2]. Akdeniz F& Gonul AS. Kadınlarda üreme olayları ile depresyon ilişkisi. Klinik Psikiyatri 2004; (Ek 2):70-74
- [3]. Ali NS, Azam IS, Ali BS, Tabbusum G, Moin SS. Frequency and associated factors for anxiety and

depression in pregnantwomen: a hospital-based cross-sectional study. The Scientific World Journal 2012; Article ID 653098:1-9.

- [4]. Alipour Z, Lamyian M, Hajizadeh E, Vafaei MA. The association between antenatal anxiety and fear of childbirth in nulliparous women: a prospective study. Iranian Journal of Nursing and Midwifery Research 2011; 16(2):1-6.

- [5]. Aydemir Ö, Guvenir T, Kuey L, Kultur S. Hastane Anksiyete ve Depresyon Ölçeęi Türkçe formunun geçerlilik ve güvenilirlięi [Validity and reliability of Turkish version of Hospital Anxiety and Depression Scale]. Turkish Journal of Psychiatry 1997; 26:280-287.

- [6]. Bloch M, Rotenberg N, Koren D, Klein E. Risk factors for early postnatal depressive symptoms. General Hospital Psychiatry 2006; 28:3-8.

- [7]. Correia LL, Linhares MB. Maternal anxiety in the pre and postnatal period: a literature review. *Rev Latino Am Enfermagem* 2007; 15:677-683.
- [8]. Cakır L, Can H. Gebelikte Sosyodemografik Değişkenlerin Anksiyete ve Depresyon Düzeyleriyle İlişkisi [Relation between sociodemographic variables with the levels of depression and anxiety in pregnancy]. *Turkish Family Physician* 3(2):35-42. [www.turkishfamilyphysician.com](http://www.turkishfamilyphysician.com)
- [9]. Daglar G, Nur N. Gebelerin stresle başa çıkma tarzları ile anksiyete ve depresyon düzeyi ile ilişkisi [The relationship between anxiety and depression level and coping styles with stress of pregnant women]. *Cumhuriyet Med J* 2014; 36:429-441.
- [10]. De Tychey C, Briançon S, Lighezzolo J, Spitz E, Kabuth B, De Luigi V, et al. Quality of life, postnatal depression and baby gender. *Journal of Clinical Nursing* 2008; 17:312-322.
- [11]. Dietz PM, Williams SB, Callaghan WM, Bachman DJ, Whitlock EP, Hornbrook MC. Clinically identified maternal depression before, during, and after pregnancies ending in live births. *Am J Psychiatry*. 2007; 164:1515-1520.
- [12]. Donmez L, Dedeoglu N, Ozcan E. Sağlık ocaklarına başvuranlarda ruhsal bozukluklar [Psychological disorders among primary health care patients]. *Türk Psikiyatri Dergisi* 2000; 11:198-203.
- [13]. Donmez S, Yeniel OA, Kavlak O. Vajinal doğum ve sezaryen doğum yapan gebelerin durumluk kaygı düzeylerinin karşılaştırılması [Comparison of the stait anxiety levels of pregnant women who have vaginal or cesarean delivery]. *Gümüşhane University Journal of Health Sciences* 2014; 3(3):908-920.
- [14]. Ekuclu G, Tokuc B, Eskiocak M, Berberoglu U, Saltik A. Prevalence of postpartum depression in Edirne, Turkey and related factors. *J Reprod Med* 2004; 49:908-914.
- [15]. Fairbrother N, Janssen P, Antony MM, Tucker E. Perinatal anxiety disorder prevalence and incidence *Journal of Affective Disorders* 200 2016; 148-155.
- [16]. Felice E, Saliba J, Grech V, Cox J, Calleja N. Antenatal psychiatric morbidity in Maltese women. *Gen Hosp Psychiatry* 2007; 29:501-505.
- [17]. Figueiredo B, Conde A. Anxiety and depression in women and men from early pregnancy, *Arch Womens Ment Health* 2011; 14:247-255.
- [18]. Gotlib IH, Whiffen VE. Prevalence rates and demographic characteristics associated with depression in pregnancy and the postpartum. *J Consult Clin Psychol* 1987; 144:188-293.
- [19]. Hagalı M.K. Study of depression and anxiety in prenatal and postnatal women at port moresby general hospital. *Medical Journal - PNG Institute of Medical Research* 2010; 53(1-2):30-36.
- [20]. Herrera JA, Hurtado GH, Caceres RD. Antepartum biopsychosocial risk and perinatal outcome. *Fam Pract Res J* 1992; 12:391-399.
- [21]. Honjo S, Arai S, Kaneko H, Ujiie T, Murase S, Sechiyama H et al. Antenatal depression and maternal-fetal attachment. *Psychopathology* 2003; 36:304-11.
- [22]. Kaplan S, Bahar A, Sertbaş G. Gebelerde doğum öncesi ve doğum sonrası dönemlerde durumluk kaygı düzeylerinin incelenmesi [Evaluation of the anxiety levels of pregnant women at prenatal and postnatal period]. *Atatürk University Nursing Journal* 2007; 10(1): 113-121.
- [23]. Kocabasoğlu N, Baser SZ. Psychiatric Disorders triggered by pregnancy and birth. *Symposium Series Common Psychiatric Disorders in Turkey* 2008; 62:349-354.
- [24]. Lee AM, Lam SK, Sze Mun Lau SM, Chong CS, Y Chui HW, Fong DYT. Prevalence, course, and risk factors for antenatal anxiety and depression. *Obstetrics and Gynecology* 2007; 110(5):1102-1112.
- [25]. Melender H.L. Experiences of fears associated with pregnancy and childbirth. A study of 329 pregnant women. *Birth* 2002; 29(2):101-109.
- [26]. Nasreen HE, Kabir ZN, Forsell Y, Edhborg M. Prevalence and associated factors of depressive and anxiety symptoms during pregnancy: a population based study in rural Bangladesh. *BMC Women's Health* 2011; 11(22).
- [27]. Okyay P, Atasoylu G, Onde M, Dereboy Ç, Beser E. Kadınlarda yaşam kalitesi anksiyete ve depresyon belirtilerinin varlığında nasıl etkileniyor? Kesitsel bir alan çalışması. [How is quality of life affected in women in the presence of anxiety and depression symptoms?] *Turkish Journal of Psychiatry* 2012; 23(3):178-188.
- [28]. Rich-Edwards JW, Kleinman K, Abrams A, Bernard LH, Thomas JM, Hadine J et al. Sociodemographic predictors of antenatal and postpartum depressive symptoms among women in a medical group practice. *J Epidemiol Community Health* 2006; 60:221-227.
- [29]. Sevil ÜD, Saruhan A, Ertem G, Kavlak O. Kadınların doğum öncesi ve doğum sonrası anksiyete ve depresyon düzeylerinin ve bunlara etki eden faktörlerin incelenmesi [The determination of pre and post-labor stage anxiety and depression levels of women and to assess the factors that effect the anxiety and depression levels]. *Dokuz Eylul University Faculty of Medicine Magazine* 2004; 18(1):67-76.
- [30]. Sertbas G. Gebelerde doğum öncesi ve doğum sonrası dönemlerde durumluk- sürekli kaygı düzeylerinin incelenmesi. *Türk Hemşireler Dergisi* 1998; 48(6):16-19.
- [31]. Sword W & Watt S. Learning needs of postnatal women: does socioeconomic status matter? *Birth* 2005; 32:86-92.
- [32]. Szeverenyi P, Poka R, Hetey M, Torok Z. Contents of childbirth-related fear among couples wishing the partner's presence at delivery. *J Psychosom Obstet Gynaecol* 1998; 19(1): 38-43.
- [33]. Sahin EM, Kılıcarslan S. Son trimester gebelerin depresyon ve kaygı düzeyleri ile bunları etkileyen etmenler [Depressive, anxiety levels and affecting factors of third trimester pregnant women]. *The Official Journal of Trakya University Faculty of Medicine* 2010; 27(1):51-58.
- [34]. Sahin N, Dinç H, Dissiz M. Gebelerin doğuma ilişkin korkuları ve etkileyen faktörler [Pregnant women's fear of childbirth and related factors]. *Medical Bulletin of Zeynep Kamil* 2009; 40(2):57-62.
- [35]. Tekgöz İ, Sunay D, Çaylan A, Kısa C. Gebeliğin son 3 ayında anksiyete bozukluğu ve ilişkili faktörlerin değerlendirilmesi [Assessment of anxiety disorders and related factors at the third trimester of pregnancy]. *Turkish Journal of Family Practice* 2009; 13(3):132-136.
- [36]. Tunc S, Yenicesu O, Cakar E, Özcan H, Pekçetin S, Danışman N. Antenatal dönemde anksiyete ve depresyonun görülme sıklığı ve ilişkili faktörler [Anxiety and depression frequency and related factors during pregnancy]. *The Journal of Gynecology - Obstetrics and Neonatology* 2012; 9(35): 1431-1435.
- [37]. Ust ZD & Pasinlioglu T. Primipar ve multipar gebelerde doğum ve doğum sonu döneme ilişkin

endişelerin belirlenmesi [Determination of anxieties related to delivery and postpartum period in primiparous and multiparous pregnant women]. HSP 2015; 2(3):306-317.

[38]. Ust ZD, Pasinlioglu T, Ozkan H. Doğum eyleminde gebelerin anksiyete düzeylerinin incelenmesi [Investigation of anxiety levels of pregnant women in labor]. Journal of Anatolia Nursing And Health Sciences 2013; 16(2):110-115.

[39]. Yılmaz DS, Beji KN. Gebelerin stresle başa çıkma, depresyon ve prenatal bağlanma düzeyleri ve bunları etkileyen faktörler [Levels of coping with stres, depression and prenatal attachment and affecting factors of pregnant women]. Genel Tıp Dergisi/ General Medical Journal 2010; 20(3): 99-108.

[40]. Zigmond AS, Snaith RP. The Hospital Anxiety and Depression Scale. Acta Psychiatr Scand 1983; 67(6):361-370.