

# Sociodemographic and obstetric characteristics as predictors of anxiety during pregnancy

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## Abstract

**Aim:** This study aimed at determining the effect of sociodemographic and obstetric characteristics of pregnant women on their anxiety levels.

**Material and Methods:** Designed as a descriptive study, it was conducted in Obstetric polyclinics of a University Hospital located in Eastern Turkey. The study consisted of 793 pregnant women admitted to the specified obstetric polyclinics for follow-up from July 15<sup>th</sup>, 2018 to December 31<sup>st</sup>, 2018. Descriptive characteristics form and Spielberger's State Anxiety Inventory-SAI were used in data collection.

**Results:** The study determined that the educational level, parity, infertility treatment, complications during pregnancy and infections during pregnancy are important predictors of SAI score during pregnancy. ( $R=0.238$ ,  $R^2=0.057$ ,  $F=9.432$ ,  $p<0.001$ ).

**Conclusion:** Study results demonstrated that educational level, parity, infertility treatment, complications during pregnancy and infection in the first trimester of pregnancy were significant predictors of anxiety.

**Keywords:** Anxiety; midwifery; nursing; obstetric; pregnancy; sociodemographics

## INTRODUCTION

Pregnancy is a natural process in which pregnant women experience various physiological, psychological and social changes (1). Women may have some mental problems during pregnancy (2,3). One of the most common problems is anxiety (4-6). A systematic review reports that about 4-39% of pregnant women experience anxiety (2,3) and it is more prevalent in combination with other psychiatric disorders (7). Anxiety during pregnancy, important health issue is common in Turkey as well over the world (8, 9). In a study conducted in Turkey, it was observed that 63.8% of pregnant women carried the risk of state anxiety (10).

A mother's psychological well-being during pregnancy is important not only for the mother but also for the fetus. The effect of mother's psychological state on the fetus starts at the very beginning of pregnancy and all mental problems during pregnancy affect both mother's and baby's health negatively in various ways (1,4). It is reported that anxiety during pregnancy causes increased maternal mortality and morbidity rates, increases pregnancy and labor complications, negatively affects the newborn's health, reduces the quality of the mother-baby relationship, and the adaptation to parenthood and that such disorders increasingly continue during the postpartum period

(11-14). In addition, studies have revealed that anxiety during pregnancy causes preterm labor, low-birth-weight infants and intrauterine growth restriction (8,15-18).

Each woman's attitude toward pregnancy varies according to her own mental structure, socioeconomic level and culture. In this context, it is reported that anxiety, a common phenomenon in pregnancy, cannot be attributed to or explained with only one factor and generally results from multiple complicated factors (19). For pregnant women, one of the most important sources of support is the nurse. Nurses are key persons in identifying anxiety during pregnancy (20-22). In antenatal period, nurses have such duties as evaluating the pregnant women not only physically but also psychosocially, obtaining a detailed history and determining the pregnant women with a high risk of anxiety, helping them cope with anxiety in early stages and assisting them in developing general health protective behaviors and maintaining a healthy lifestyle. There are a limited number of studies in the literature investigating the effect of sociodemographic and obstetric characteristics of pregnant women on the occurrence of anxiety. Most of the studies were conducted with small samples. The determination of whether the sociodemographic and obstetric characteristics

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of pregnant women are the predictors of anxiety will contribute to enhancing the quality and efficiency of nursing care, planning the medical service to be provided to the pregnant women and improving the service provided by the healthcare institutions. In the present study, it was aimed to determining the effect of sociodemographic and obstetric characteristics of pregnant women on anxiety. It is thought that the results of study will contribute to the literature, the factors that cause anxiety in pregnant women will be detected and the awareness of healthcare professionals about the issue will be increased.

## MATERIAL and METHODS

### Study Design and Participants

This descriptive study was conducted in the Obstetric Polyclinics of a University Hospital located in eastern Turkey. The study universe consisted of pregnant women (N=679) admitted to the specified obstetric polyclinics for follow-up from July 15<sup>th</sup>- December 31<sup>st</sup>, 2018. As the result of the power analysis, the level of significance was calculated as 5%, the effect size was measured as 0.2, and the capability (power) %90 to represent the universe was determined as 528 pregnant women in total, as the sample size of the study (23). Considering the possibilities of refusing to participate and providing missing information during the data collection, all healthy pregnant women, who met the inclusion criteria, were invited to volunteer for the study. The study was completed with 793 healthy pregnant women who volunteered to participate in the study. The inclusion criteria of the study for pregnant women were being older than 18, having a singleton pregnancy of 16 weeks and above, being healthy with no identified psychiatric disease or depressive symptoms.

### Instruments

#### Descriptive Characteristics Form

This form consists of questions regarding a number of demographic and obstetric characteristics of pregnant women (age, working status, education, financial status, gestational week, gender of fetus, number of pregnancies, number of live births, number of living children etc.).

#### Spielberger's State Anxiety Inventory (SAI)

The State Anxiety Inventory was developed by Spielberger et al. in 1970 and its validity-reliability in Turkey was checked by Öner and Lecompte in 1977r (24). SAI requires the individuals to express how they feel under certain circumstances and in certain moments and to answer the questions by taking their feelings about the situations into consideration. SAI is a highly sensitive scale on assessing rapidly changing emotional reactions. SAI is comprised of twenty items. The total score that can be obtained from this scale varies between 20 and 80. The State Anxiety Inventory consists of two kinds of statements which are direct and reversed statements. Direct statements express undesirable feelings while reversed statements express desirable feelings. The reversed statements in the State Anxiety Inventory are the items 1, 2, 5, 8, 10, 11, 15, 16, 19 and 20. After separate total weights are obtained for direct and reversed items, the total weight of reversed items is subtracted from the overall total weight to obtain the total weight of direct items. A predetermined constant value is

added thereon. This constant value is 50 for SAI. The final score is the individual's anxiety score (24).

### Data Collection

Study data were collected by the researchers through face-to-face interviews with the women.

### Statistical Analysis

The data were analyzed electronic environment using SPSS 16.0 (Statistical Package for Social Sciences, SPSS Inc., Chicago, IL, USA) and were assessed using percentage, arithmetic mean (M), standard deviation (SD), independent samples t-test, ANOVA, Pearson correlation coefficient test and Multiple Linear regression analysis. Stepwise multiple regression analysis was performed to identify the predictors of state anxiety. Before composing the Stepwise linear regression model, the standardized residual for variables and multicollinearity for independent variables were examined (25). Variance inflation factor (VIF) was tested in Multicollinearity Assessment and no multicollinearity was found among independent variables. Since the occupation, family income, parity, planning status of pregnancy, infertility treatment, complications during pregnancy and infections during pregnancy were categorical variables, they were included in the regression analysis as dummy variables (26). As the variables of educational level and family income were ordinal categorical variables, they were accepted as numerical variables (27). The statistical significance level was accepted as  $p < 0.05$  in order for these variables to be brought into the regression equation.

### Ethical issues

A written approval was received from the institution where the study was conducted and a permission was received from the ethics committee of a university hospital located in eastern Turkey to be able to perform the study (No:2018/219). In addition, the participants were informed on the study and assured that their personal information would be protected and volunteers were included in the study.

## RESULTS

Sociodemographic and obstetric characteristics of the women participating in the study are presented in Table 1. The mean age of participating women was  $30.55 \pm 6.43$  and the mean gestational week was  $29.54 \pm 5.55$ . The mean number of pregnancies was  $3.34 \pm 2.10$ , the mean number of live births was  $1.91 \pm 1.78$  and the mean number of living children was  $1.88 \pm 1.73$ . 33.7% of the pregnant women were high school or university graduates, 85.4% of them were not working and 61.5% of them had moderate level of income. 81.2% of the pregnant women were multipara, 51.6% of them reported that they had not planned the current pregnancy, 94.7% of them had not received infertility treatment and 56.4% of the fetuses were boys. Furthermore, most of the pregnant women had no history of stillbirth/abnormal births, history of miscarriage, medical miscarriage, preterm birth, history of genetic diseases. Of all the pregnant women, 62.2% of them had no pregnancy complications and 91.9% of them had no infectious diseases in of the current pregnancies.

Table 1. Sociodemographic and obstetric characteristics of participants (N = 793)	
Socio-Demographic Characteristics	n (%)
Age (years) (Mean ± SD)	30.55±6.43
Gestational week (Mean ± SD)	29.54±5.55
Number of pregnancies (Mean ± SD)	3.34±2.10
Number of live births (Mean ± SD)	1.91±1.78
Number of surviving children (Mean ± SD)	1.88±1.73
SAI total score (Mean ± SD)	44.09±6.60
<b>Educational level</b>	
No education or literate	114(14.4)
Primary school	242(30.5)
Secondary school	170(21.4)
High school or university	267(33.7)
<b>Working Status</b>	
Unemployed	677(85.4)
Employed	116(14.6)
<b>Family Income</b>	
Low	204(25.7)
Moderate	488(61.5)
High	101(12.7)
<b>Parity</b>	
Multipara	644(81.2)
Nullipara	149(18.8)
<b>Planning status of pregnancy</b>	
Yes	384(48.4)
No	409(51.6)
<b>Infertility treatment</b>	
Yes	42(5.3)
No	751(94.7)
<b>Gender of fetus</b>	
Girl	318(40.1)
Boy	447(56.4)
Not known	28(3.5)
<b>History of stillbirth or abnormal birth</b>	
Yes	53(6.7)
No	740(93.3)
<b>History of abortion</b>	
Yes	230(29.0)
No	563(71.0)
<b>History of medical abortion</b>	
Yes	95(12.0)
No	698(88.0)
<b>History of premature birth</b>	
Yes	79(10.0)
No	714(90.0)
<b>History of genetic disease</b>	
Yes	7(0.9)
No	786(99.1)
<b>Any complications during pregnancy</b>	
Yes	493(62.2)
No	300(37.8)
<b>Any infections during pregnancy</b>	
Yes	64 (8.1)
No	729 (91.9)

Table 2. Effect of sociodemographic and obstetric characteristics on state anxiety of pregnant women		
Sociodemographic Characteristics	SAI Mean ± SD	Test; p
<b>Educational Level</b>		
No education or literate	42.73±6.44	F=8.419**
Primary school	43.28±5.84	p=0.000
Secondary school	43.65±6.12	
High school or university	45.66±7.21	
<b>Working Status</b>		
Unemployed	43.79±6.54	t=3.103*
Employed	45.82±6.48	p=0.002
<b>Family Income</b>		
Low	44.95±7.27	F=4.244**
Moderate	43.52±6.53	p=0.000
High	45.13±5.08	
<b>Parity</b>		
Multiparous	43.71±6.41	t=-3.355*
Nulliparous	45.70±6.99	p=0.001
<b>Planning status of pregnancy</b>		
Yes	44.62±6.85	t=-2.229*
No	43.58±6.25	p=0.026
<b>Infertility treatment</b>		
Yes	46.61±8.19	t=-2.078*
No	43.94±6.44	p=0.044
<b>Gender of Fetus</b>		
Girl	44.19±6.65	F=2.019**
Boy	44.16±6.51	p=0.133
Not known	41.64±6.18	
<b>History of abortion</b>		
Yes	44.11±6.87	t=-.080*
No	44.07±6.44	p=0.936
<b>History of medical abortion</b>		
Yes	43.46±6.12	t=.989*
No	44.17±6.62	p=0.323
<b>History of premature birth</b>		
Yes	43.22±6.40	t=1.025*
No	44.03±6.64	p=0.306
<b>History of genetic disease</b>		
Yes	43.35±6.32	t=1.046*
No	44.16±6.59	p=0.296
<b>History of stillbirth or abnormal birth</b>		
Yes	44.71±6.46	t=-0.721*
No	44.04±6.57	p=0.471
<b>Any complications during pregnancy</b>		
Yes	44.52±6.63	t=-2.398*
No	43.37±6.41	p=0.017
<b>Any infections during pregnancy</b>		
Yes	44.24±6.61	t=2.281*
No	42.29±5.78	p=0.023
	<b>Correlation</b>	<b>P</b>
	(r) value***	
Age	-0.080	p=0.023
Number of pregnancies	-0.133	p=0.000
Number of live births	-0.150	p=0.000
Number of living children	-0.159	p=0.000
Gestational week	-0.034	p=0.335

\*Independent Samples t Test, \*\*Analysis of variance, \*\*\*Pearson Correlation analysis

Table 2 shows the correlation between the sociodemographic and obstetric characteristics of pregnant women and the SAI score. As a result of the analyses, a statistically significant association was found between the SAI scores and the mother's educational level (F: 8.419; p: 0.000), working status (t:3.103; 0.002), income level (F:4.244; p:0.000), parity (t:-3.355; p:0.001), planning status of pregnancy (t:-2.229; p:0.026), history of infertility treatment (t: -2.078; p:0.044), any complications in the current pregnancy (t: -2.398; p:0.023), any infections in the current pregnancy (t:2.281; p:0.023), age (r:-.080; p:0.023), number of pregnancies (r:-.133; p:0.000), number of live births (r:-.150; p:0.000) and number of living children (r:-.159; p:0.000) (Table 2).

**Table 3. Analysis of the risk factors for state anxiety of the participants\***

Risk factors for state anxiety	B	SE	$\beta$	T	P
Educational Level	.917	.220	.150	4.161	0.000
Parity (referent: nullipara)	1.522	.608	.091	2.503	.013
Infertility treatment (referent: yes)	2.038	1.021	.070	1.996	.046
Any complications during pregnancy (referent: yes)	1.194	.476	.088	2.509	.012
Any infections during pregnancy (referent: yes)	2.148	.846	.089	2.540	.011
R=0.238 R <sup>2</sup> =0.057 Adj R <sup>2</sup> =0.051 F=9.432 p=0.000					

**\*Multiple linear regression analysis**

Stepwise multiple linear regression analysis was conducted to determine the contribution of factors associated with the level of anxiety in pregnant women. Multiple linear regression estimates the coefficients of a linear equation involving one or more independent variables that could best predict the value of the dependent variable. A 95% confidence interval was used for each regression coefficient. Table 3 demonstrates the results of the linear regression analysis conducted with the factors correlated with the SAI score including the mother's educational level, working status, income level, parity, planning status of pregnancy, history of infertility treatment, any complications in the current pregnancy, any infections in the current pregnancy, age, number of pregnancies, number of live births and number of living children. A statistically significant association was found between the SAI score and the educational level, parity, infertility treatment, pregnancy complications and pregnancy infections (R=0.238, R<sup>2</sup>=0.057, F=9.432, p<0.001). These variables explain the 5.7% of the total variance for anxiety during pregnancy (Table 3).

## DISCUSSION

In addition to feeling happy for becoming a mother during pregnancy which is one of the most special periods in a woman's life, anxiety may often be observed. When studies review on anxiety during pregnancy revealed that Virit et al. found the average SAI score as  $40.10 \pm 4.24$  in a study where they used the State Anxiety Inventory (28). In a study conducted by Gourounti et al. (2014), the state anxiety scores of pregnant women were calculated as  $41.5 \pm 8.4$  (29). In our study, on the other hand, it was found as  $44.09 \pm 6.60$ . This difference between the average anxiety scores may be related with the personal and cultural characteristics of the pregnant women because family structures and individual-environment interactions vary in different cultures.

In the present study, it was observed in a comparison between the educational level and the SAI scores that the SAI scores of pregnant women increased as their educational levels increased. While no significant difference was reported between anxiety and education in some studies (30), Gourounti et al. (2014) reported a association between low educational levels and anxiety in their study (29). In studies in Turkey have shown that the pregnant women who were low school graduates had higher anxiety levels than the pregnant women who had graduated from higher educational level (8, 31). It is thought that the result of our study was different from the literature because we included pregnant women with a history of complications. The educated pregnant women in our study had higher anxiety levels probably because they noticed the problems in their pregnancies better.

A significant difference was found between parity and SAI scores and nullipara pregnant women had increased SAI scores in our study. In a study carried out with pregnant women in Turkey the by Karataylı et al., (2010) using Beck Anxiety Scale it was demonstrated that BAE scores were significantly and positively correlated with number of children (32). However, in a study by Özdemir et al. (2018), it was found that the state anxiety levels of pregnant women during prenatal period in terms of the number of pregnancies were higher in women who were pregnant for the first time (33). It may be because they are inexperienced and cannot clearly perceive what pregnancy is like since they experience it for the first time. The results of our study are in line with the literature.

Infertility is a crisis with cultural, religious and class-related aspects that results in medical, psychiatric, psychological and social problems (34). Infertile women are more likely to experience emotional problems compared to fertile women and the examinations and treatments may lead to anxiety in women (35, 36). Our study revealed that the women with a history of infertility treatment had increased SAI scores. Gourounti et al. (2014) detected in their study that the women receiving IVF treatment had higher anxiety levels (29). In a study by Bayrampour et al. (2015), it was

reported that the women receiving infertility treatment had increased state anxiety scores. The findings of our study are supported by the literature.

As a typical result of high-risk situations, health problems and hospitalization during pregnancy, stress and anxiety are frequently observed (37-40). It is reported in the literature that pregnant women with high-risk pregnancy have anxiety especially about the survival and development of the fetus, the labor and the baby's general health (38). In our study, the pregnant women with a history of pregnancy complications had higher SAI scores, which was in line with the literature. It was also found in our study that the pregnant women with a history of infections in the first trimester had high anxiety levels. It is thought that, similar to complicated pregnancies, this result from the anxiety regarding the baby's health.

## CONCLUSION

Study results demonstrate that educational level, parity, infertility treatment, complications during pregnancy and infections in the first trimester of pregnancy are significant predictors of anxiety during pregnancy. In the light of these results, during pregnancy follow-ups, psychological assessments in addition to the physical examinations should be conducted and pregnant women with a high risk of anxiety should be identified in early stages and the necessary precautions should be taken for pregnant women with anxiety-enhancing risk factors. Since pregnant women have increased anxiety levels as their educational levels increase due to the higher awareness of the potential complications, it is considered that informing them on the diagnosis and treatment of complications during pregnancy for the assessment of fetal health, providing counseling and monitoring them closely will reduce their anxiety levels. Nurses should be aware of the anxiety in women having their first pregnancies or receiving infertility treatment to get pregnant, and psychological support and counseling should be provided to the pregnant women with a history of infertility treatment. Furthermore, it is highly important to also provide information and psychological counseling to the pregnant women with a history of complications and a history of infections in the first trimester.

It is recommended to use SAI in routine follow-ups throughout pregnancy, to monitor the pregnant women with negative scores more closely and conduct new studies with a larger sample of pregnant women from different regions and with different characteristics.

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## REFERENCES

- Ozorhan EY, Apay SE, Altun OS. Gebelikte ruh sağlığı. YBÜ Hemşirelik E Dergisi 2014;3:33-2.
- Coll CVN, Silveira MF, Bassani DG, et al. Antenatal depressive symptoms among pregnant women: Evidence from A Southern Brazilian population-based cohort study. J Affect Disord 2017;209:140-6.
- Meireles JFF, Neves CM, Carvalho PHB, et al. Body image, eating attitudes, depressive symptoms, self-esteem and anxiety in pregnant women of Juiz de Fora, Minas Gerais, Brazil. Cien Saude Colet 2017; 22: 437-45.
- Hiremath P. Need for psychological assessment during pregnancy- a nursing perspective. Global Journal of Nursing & Forensic Studies 2016;1:1-4.
- Eastwood J, Ogbo FA, Hendry A, et al. Early Years Research Group. The impact of antenatal depression on perinatal outcomes in Australian women. PLoS One 2017;12:0169907.
- Suzuki S, Eto M. Screening for depressive and anxiety symptoms during pregnancy and postpartum at a Japanese perinatal center. J Clin Med Res 2017;9.6: 512.
- Marchesi C, Ossola P, Amerio A, et al. Clinical management of perinatal anxiety disorders: A systematic review. J Affect Disord 2016;190:543-50.
- Daglar G, Nur N. Gebelerin stresle başa çıkma tarzlarının anksiyete ve depresyon düzeyi ile ilişkisi. Cumhuriyet Tıp Dergisi 2014;36:429-41.
- Bitew T, Hanlon C, Kebede E, et al. Antenatal depressive symptoms and perinatal complications: a prospective study in rural Ethiopia. BMC psychiatry 2017;17: 301.
- Dastan BN, Deniz N, Şahin B. Kars'ta gebelerin ev ziyareti ile ruhsal durumlarının belirlenmesi. J Psychiatr Nurs 2015;6:71-8.
- Çakır L, Can H. Gebelikte sosyodemografik değişkenlerin anksiyete ve depresyon düzeyleriyle ilişkisi. Jour Turk Fam Phy 2012;3:35-2.
- Anniverno R, Bramante A, Mencacci C, et al. Anxiety disorders in pregnancy and the postpartum period. In: New Insight into anxiety disorders. Intechopen 2013; 259-85.
- Rallis S, Skouteris H, McCabe M, et al. A prospective examination of depression, anxiety and stress throughout pregnancy. Women Birth 2014;27:36-2
- Bayrampour H, Ali E, McNeil DA, et al. Pregnancy related anxiety: A concept analysis. Int J Nurs Stud 2016;55:115-30.
- Sahin EM, Kilicarslan S. Son trimester gebelerin depresyon ve kaygı düzeyleri ile bunları etkileyen etmenler. Trakya Üniversitesi Tıp Fakültesi Dergisi 2010;27:51-8.
- Altın EG. Perinatal depresyon tedavisinde kişilerarası psikoterapi. PGY- Capps 2012;4:188-03.
- Silva MMJ, Nogueira DA, Clapis MJ, et al. Anxiety in pregnancy: Prevalence and associated factors. Rev Esc Enferm USP 2017;51:1-8.
- Kane HS, Schetter CD, Glynn LM, et al. Pregnancy anxiety and prenatal cortisol trajectories. Biol Psychol 2014;100:13-9.
- Ozsahin Z, Erdemoglu C, Karakayali C. Gebelikte Psikososyal sağlık düzeyi ve ilişkili faktörler. Jour Turk Fam Phy 2018;9:34-6.

20. Solt Kirca A, Savaser S. Doğum sayısının anne-bebek bağlanmasına etkisi. HSP 2017;4:236-43
21. Koptur A, Emul TG. Fetüs ve yenidoğanda bağlanmanın iki yüzü: maternal ve paternal bağlanma ve hemşirelik. EGEHFD 2017;33:153-64
22. Baltacı N, Baser M. Maternal-fetal attachment during pregnancy and nursing. Health Sciences Research in The Globalizing World 2018;123-31.
23. Faul F, Erdfelder E, Lang AG, et al. G\*power 3: A flexible statistical power analysis program for the social, behavioural, and biomedical sciences. Behav Res Methods 2007;36:175-91.
24. Oner N, Lecompte A. Durumluk sürekli anksiyete envanteri el kitabı. Boğaziçi Üniversitesi Yayınları, İstanbul, 1982.
25. Hair JF, Black WC, Babin BJ, et al. Multivariate data analysis. 7th edition. New Jersey; Prentice Hall, Upper Saddle River, US, 2010.
26. Powers Daniel A, Xie Y. Statistical methods for categorical data analysis, Academic Press, ABD, 2000.
27. Johnson PE. Working with ordinal predictors. In: Annual Meeting of the Midwest Political Science Association, Chicago, IL 2009.
28. Virit O, Akbas E, Savas HA, et al. Gebelikte depresyon ve kaygı düzeylerinin sosyal destek ile ilişkisi. Nöropsikiyatri Arşivi 2008;45:9-3.
29. Gourounti K, Anagnostopoulos F, Sandall J. Poor marital support associate with anxiety and worries during pregnancy in greek pregnant women. Midwifery 2014;625-38.
30. Arslan B, Arslan A, Kara S, et al. Gebelik anksiyete ve depresyonunda risk faktörleri: 452 olguda değerlendirme. Tepecik Eğitim Hastanesi Dergisi 2011;21:79-4.
31. Turkyilmaz E, Hesapcioglu ST. Adolescent pregnancy's ongoing effects on the depression and anxiety scores in subsequent pregnancy. Gynecology Obstetrics & Reproductive Med 2019;25:142-7.
32. Karatayli S, Gezginc K, Ilgaz F, et al. The Comparison of depression anxiety and quality of life levels among trimesters of pregnancy. Gynecology Obstetrics & Reproductive Med 2010;16:79-3.
33. Ozdemir N, Kariptaş E, Yalçın S. Gebelik sayısı ve doğum yapma şekilleri ile durumluk ve sürekli anksiyete düzeyi arasındaki ilişkilerin doğum öncesinde ve doğum sonrasında değerlendirilmesi. Ahi Evran Üniversitesi Sağlık Bilimleri Dergisi 2018;1: 1-8.
34. Özçelik B, Karamustafaloğlu O, Özçelik A. İnfertilitenin psikolojik ve psikiyatrik yönü. Anadolu Psikiyatri Dergisi 2007;8:140-8.
35. Ataman H, Arslan H. Doğal gebelikler ile infertilite tedavisi sonucu oluşan gebeliklerde psiko-sosyal bakım gereksinimleri. Aile ve Toplum 2010;6:75-6.
36. Koyun A, Taskin L, Terzioğlu F. Yaşam dönemlerine göre kadın sağlığı ve ruhsal işlevler: hemşirelik yaklaşımlarının değerlendirilmesi. Psikiyatride Güncel Yaklaşımlar 2011;3:67-99.
37. Olcer Z, Oskay U. Yüksek riskli gebelerin yaşadığı stresörler ve stresle baş etme yöntemleri. Hemşirelikte Eğitim ve Araştırma Dergisi (HEAD) 2015;12:85-2.
38. Deliktas A, Korukcu O, Kukulu K. Farklı gruplarda annelik deneyimi. Marmara Üniversitesi Sağlık Bilimleri Enstitüsü Dergisi (MÜSBED) 2015;5:274-83.
39. Kang YT, Yao Y, Dou J, et al. Prevalence and risk factors of maternal anxiety in late pregnancy in China. International journal of environmental research and public health 2016;13:468.
40. Yılmaz SD, Beji NK. Gebelerin stresle başa çıkma, depresyon ve prenatal bağlanma düzeyleri ve bunları etkileyen faktörler. Genel Tıp Derg 2010;20:99-08.