Özgün Araştırma / **Original Article**

CHANGES IN THE ANXIETY LEVELS OF PREGNANT WOMEN IN THE SECOND YEAR OF THE COVID-19 PANDEMIC

COVID-19 PANDEMİSİNİN İKİNCİ YILINDA GEBELERİN KAYGI DÜZEYİNDEKİ DEĞİŞİKLİKLER

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ÖZ

Amaç: COVID-19 pandemisinin başlangıcından bu yana son iki yılda gebelerin kaygı düzeylerindeki değişimi incelemek ve sosyodemografik özelliklerin bu düzeyleri nasıl etkilediğini belirlemek

Method: Antenatal polikliniğine pandemi sürecinde iki yıl arayla başvuran 200'er düşük riskli gebeye gebelik haftalarından bağımsız Durumluk-Sürekli Kaygı Envanteri uygulandı. Gebelerin sosyodemografik özellikleri not edildi. Sonuçlar iki yılın sonunda değerlendirildi.

Bulgular : Gebelik haftası, çalışma durumu, gebeliğin planlanıp planlanmadığı ve eş desteği istatistiksel olarak iki grup arasından anlamlı bir fark oluşturmadı (p|>0,001). Gebelerin pandemi başlangıcındaki durumluk ve sürekli kaygı ortalamaları, iki yıllık dönemden sonraki gebelere göre daha yüksekti (sırasıyla, p=0,000,p=0,038). Pandemi başlangıcında gebe olanlarda yaşa bağlı anksiyete düzeylerinde bir fark bulunmazken, iki yıl sonraki periodda gebelikte anne yaşı arttıkça sürekli kaygı düzeyinin arttığı belirlendi (p=0,047). Primigravidlerin anksiyete düzeyi multiparlara göre daha yüksek bulundu. Pandemi nedeniyle sosyal kısıtlamalar uygulanırken çalışan gebelerin kaygı düzeyleri çalışmayanlara göre daha düşüktü (p=0,049).

Sonuç: Sosyal kısıtlamalar sırasında çalışmak, hastalık bulaşması nedeniyle oldukça riskli görünse de, sosyal destek gebelerde kaygı düzeyinin azaltılmasında olumlu etkiye sahiptir. Bu nedenle büyük afetlerde kullanılabilecek gebelere yönelik psiko-sosyal destek programları hazırda tutulmalıdır.

Anahtar Kelimeler: Kaygı, Gebelik, Covid 19 pandemisi

ABSTRACT

Objective: To examine the changes in the anxiety levels of pregnant women in the last two years, since the onset of the COVID-19 pandemic and to determine how sociodemographic characteristics have affected these levels.

Study Design: State-Trait Anxiety Inventory (STAI) was given to 400 low-risk pregnant women visiting the antenatal outpatient clinic within a two-years interval regardless of their gestational age. Besides the anxiety inventory, the sociodemographic characteristics of the participants were also noted.The results were evaluated at the end of two years.

Results: Gestational week, working status, whether the pregnancy was planned or not, and partner support were not statistically significant between groups(p|>0.001). The averages of state and trait anxiety of pregnant women were higher at the beginning of the pandemic than the pregnant women were after two years period(p=0,000,p=0,038, respectively). While there was no difference related to age at the beginning of the pandemic, the level of trait anxiety increased as the mother's age increased in the period after two years(p=0.047). The anxiety level of primigravids was found to be higher compared to the multipars. Pregnant women who were working while the social restrictions were being imposed due to the pandemic had lower anxiety levels than those who were not(p=0.049).

Conclusion:Even though working during social restrictions seems quite risky because of the disease transmission, it has a positive effect on reducing the level of anxiety in pregnant women with social support. Therefore, psycho-social support programs for pregnant women should be kept ready in major disasters.

Keywords: Anxiety, Covid-19 pandemic, pregnancy

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INTRODUCTION

The coronavirus outbreak, which was declared a pandemic by the World Health Organization in March 2020, has affected the entire world and caused many financial and intangible losses (1). While unknowns are still playing a key role in this disease, which started in China and has affected the whole world, studies on treatment methods and vaccines's complications are still continuing. As of March 2022, 6.2 million people worldwide had died (2). It remains unknown who is more likely to be infected and who is less, what determines the course of the disease, and whether there is a cure or not, and vaccination is still an issue. In the early days of the pandemic, many countries limited movement into and out of the country imposed social restrictions, and even imposed lockdowns(3).

During this period, issues such as the course of the disease in pregnant women and fetuses, whether there is vertical transmission from the mother to the baby, and how often pregnancy follow-ups should be performed have caused concern all over the world. Previous pandemic reports indicated that the pregnant population was more sensitive than healthy people who were not pregnant(4). Along with social restrictions, the difficulties associated with pregnant women being able to come to their routine follow-ups have made the already sensitive gestation period even more difficult. In the intervening two years, information about the disease has increased, new prevention methods have been added to the existent ones, and social restrictions have been removed, thanks to mass vaccination. In this study, we investigated whether there was a difference in the anxiety levels of the pregnant population during and after the devastating impact of the pandemic and the factors affecting this. Thus, we tried to answer the question of how to support pregnant women psycho-socially in a similar event that may occur in the future.

MATERIALS AND METHOD

The study was carried out in the obstetrics department of a tertiary hospital in Ankara, which is classified as a reference hospital during the pandemic. After the approval of the ethics committee (E1-20-708) for the study, the State-Trait anxiety inventory was delivered to 200 low-risk pregnant women who came to the antenatal outpatient clinic at the beginning of the pandemic in March 2020. The first 10 patients who applied to the antenatal outpatient clinic and were accepted to fill the inventory were chosen for 20 consecutive workdays as the study group. The same procedure was performed in March 2022 which was accepted as a date when the restrictions due to the pandemic loosened. The high-risk pregnant women (multiple pregnancies, intrauterine growth retardation, fetal anomalies, presence of preterm birth risk, gestational hypertension, gestational diabetes), pregnant women with known additional diseases or known psychiatric illnesses, and patients with COVİD-19 infection were excluded from the study. The results were evaluated by a single researcher at the end of two years.

State-Trait Anxiety Inventory:

This inventory was developed by Spielberg and his colleagues to measure the level of state and trait anxiety and has been widely used since then(5). The inventory includes two separate scales consisting of a total of 40 items. The state anxiety inventory is a measurement tool that indicates how the person feels at a given moment, while the trait anxiety inventory is a measurement tool that indicates how the person usually feels. The emotions or behaviors expressed in the items of the state anxiety scale are measured using the following options aiming to evaluate the severity of the experience: 1) Not at all, 2) Somewhat, 3) Moderately so, and 4) Very much so. The emotions or behaviors expressed in the Trait Anxiety Inventory items are measured using the following options which aim to find out the frequency of the emotion or the behavior: 1) Almost never, 2) Sometimes, 3) Most of the time, and 4) Almost always. The two inventories are filled one after another, and scores are obtained. The total score from both of the scales ranges from 20 to 80. A large score indicates a high level of anxiety whereas a small one indicates a low level of anxiety (6).

Statistical Analysis:

400 subjects were conducted in the study. The collected data were transferred to IBM SPSS Statistics 23. When evaluating the study data, we considered frequency distribution (number, percentage) for categorical variables and descriptive statistics (mean, standard deviation) for numerical variables. We used an independent sample t-test to determine whether there was a difference between the two groups, and one-way variance analysis (One Way ANOVA) to determine whether there was a difference between more than two groups. As a result of the one-way variance analysis (ANOVA), we used the Levene test to examine the variance homogeneity, and the multiple comparison test (Bonferroni or Tamhane's T2) to identify which group or groups caused the difference. We used Bonferroni to examine the difference between groups in variables that provided variance homogeneity, and Tamhane's T2 test to examine the difference between groups in variables that did not provide variance homogeneity. We did a Chi-square analysis in the examination of the relationship between categorical variables and a Pearson correlation analysis in the examination of the relationship between measurements. We accepted $p<0.05$ for the significance level.

RESULTS

While there was no statistically significant difference between the groups in terms of work status, gestational week, planned pregnancy status, and partner support ($p>0.05$), there was a statistically significant difference between the age, educational status, and gravidity status between the groups ($p<0.05$). The average age of pregnant women at the beginning of the pandemic was higher ($p=0.047$). While the rate of high school graduates was high in pregnant women at the beginning of the pandemic, the proportion of university graduates is higher in pregnant women after two years period($p=0.00$). In addition, the number of women who have had more than three pregnancies is higher at the beginning of the pandemic (Table-1).

Table 1. Examining the relationship between groups and demographic characteristics (N=400)

		At the beginning of the pandemic	At the end of the pandemic	Total	Test/p				
		N	%	N	%	N	%		
Age (mean.±sd)		28,50±5,33a	27,47±4,93b	27,98±5,15	1,996/0,047*1				
Education status	Primary school	21	10,5	12	6,0	33	8,3	19,657/0,000*2	
	Middle school	48	24,0	42	21,0	90	22,5		
	High school	101	50,5a	79	39,5b	180	45,0		
	University	30	15,0b	67	33,5a	97	24,3		
Work status	Working	53	26,5	70	35,0	123	30,8	3,393/0,0652	
	Not working	147	73,5	130	65,0	277	69,3		
Gravidity	1	88	44,0	87	43,5	175	43,8	8,060/0,045*2	
	2	60	30,0	77	38,5	137	34,3		
	3	42	21,0a	23	11,5b	65	16,3		
	4	10	5,0	13	6,5	23	5,8		
Gestational week (mean. ±sd)		23,88±8,40	22,84±10,58	23,36±9,56	1,094/0,2751				
Planned pregnancy status	Planned	140	70,0	157	78,5	297	74,3	3,779/0,0522	
	Unplanned	60	30,0	43	21,5	103	25,8		
Partner support	Present	200	100,0	198	99,0	398	99,5	2,010/0,4992	
	Absent	0	0,0	2	1,0	2	0,5		

a, b: shows the differences between the average/percentage of groups (a=highest mean/percentage).

1: Independent sample t-test, 2: Chi-square test, *:p<0.05

There was a statistically significant difference between the groups in terms of state anxiety and trait anxiety levels (p<0.05). The averages of state anxiety and trait anxiety levels of pregnant women at the beginning of the pandemic were higher than currently pregnant women(Table 2).

Table 2. Examination of differences between groups in terms of anxiety status (N=200)

	At the beginning of the pandemic (mean.±sd)	At the end of the pandemic (mean.±sd)	Total (mean.±sd)	Test/p
State anxiety	39,23±8,72	35,10±8,35	37,16±8,78	4,830/0,000*1
Trait anxiety	43,26±7,20	41,73±7,52	42,49±7,39	2,078/0,038*1

1: Independent sample t-test, *:p<0.05

There is a positive significant correlation between the levels of state and trait anxiety in pregnant women in both groups (p<0.05) (Table-3).

		At the beginning of the pandemic	At the end of the pandemic	
		Trait anxiety	Trait anxiety	
State anxiety	R	0,318	0,568	
	P	0,000*	0,000*	

r: Pearson correlation coefficient, *:p<0.05

As shown in Table 4 , while there was no statistically significant difference in the levels of state anxiety between educational status, work status, and planned pregnancy status in pregnant women at the beginning of the pandemic (p>0.05), there was a statistically significant difference between their gravidity status (p<0.05). The average state anxiety level in pregnant women at the beginning of the pandemic with two pregnancies was higher than in those with one pregnancy.

Table 4. Examining the relationship between measurements and demographic characteristics in groups (N=400)

		State anxiety	Trait anxiety		
		At the beginning of the pandemic (mean.±sd)	At the end of the pandemic (mean.±sd)	At the beginning of the pandemic (mean.±sd)	At the end of the pandemic (mean.±sd)	
Education status	Primary school	43,14±7,69	36,83±8,35	44,57±6,49	44,67±5,40
	Middle school	40,04±9,02	35,10±8,06	44,94±6,92	42,07±7,39
	High school	38,60±8,68	35,10±8,30	42,92±7,54	41,27±7,76
	University	37,27±8,49	34,79±8,74	40,77±6,33	41,52±7,66
Test/p2		2,270/0,082	0,200/0,896	2,427/0,067	0,753/0,522
Work status	Working	37,55±9,37	35,13±9,33	41,58±6,88b	41,09±7,59
	Not working	39,83±8,43	35,08±7,82	43,86±7,24a	42,07±7,49
Test/p1		-1,640/0,103	0,034/0,973	-1,985/0,049*	-0,881/0,379
Gravidity	1	37,11±9,15b	34,33±7,84	42,33±6,88	40,54±7,09
	2	40,80±7,53a	34,74±8,84	44,67±6,79	41,97±8,31
	3	40,33±8,41	36,43±8,63	42,76±7,92	42,91±6,30
	4	43,70±9,59	40,00±7,08	45,00±8,62	46,08±5,85
Test/p2		3,611/0,014*	2,009/0,114	1,528/0,209	2,441/0,066
Planned pregnancy status	Planned	38,47±8,74	35,05±8,30	43,31±7,19	41,53±7,34
	Unplanned	40,98±8,49	35,28±8,63	43,13±7,28	42,44±8,19
Test/p1		-1,878/0,062	-0,158/0,874	0,156/0,876	-0,704/0,482

a,b: shows the differences between the mean/percentage of groups (a=highest mean/percentage).

1: Independent sample t-test, 2: One-way ANOVA test, *:p<0.05

There was no statistically significant difference in state anxiety status between educational status, study status, gravidity, and planned pregnancy status in pregnant women after two-years period(p>0.05).

While there was no statistically significant difference in the educational status, gravidity, and planned pregnancy status in pregnant women at the beginning of the pandemic in terms of trait anxiety levels, there was a statistically significant difference between the working status (p<0.05). The average trait anxiety measurement of the non-working pregnant women at the beginning of the pandemic was higher than that of working women.

Table 5 shows there was a positive significant correlation between age and state anxiety levels in pregnant women after two years period of the pandemic (p<0.05).

There was no statistically significant difference in state anxiety status between educational status, study status, gravidity, and planned pregnancy status in pregnant women after two-years period(p>0.05).

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Table 5 shows there was a positive significant correlation between age and state anxiety levels in pregnant women after two years period of the pandemic (p<0.05).

Table 5. Examining the relationship between anxiety status in groups (N=200)

		Pregnant women at the beginning of the pandemic		Currently pregnant women		
		Age	Gestational week	Age	Gestational week	
State anxiety	R	0,096	0,100	0,211	0,022
	P	0,178	0,160	0,003*	0,755
Trait anxiety	R	0,045	-0,014	0,089	0,011
	P	0,527	0,847	0,209	0,874

r: Pearson correlation coefficient, *:p<0.05

DİSCUSSION

In this study we compared the data of 200 pregnant women who were admitted to the hospital while social restrictions were continued, there were no vaccines against the virus, and the efforts to understand the pregnancy-disease relationship were challenged by the presence of only a limited number of cases, and the data of 200 other pregnant women two years after the pandemic started, when they admitted for their regular follow-ups after the restrictions were removed, vaccination became widespread, and information regarding the disease began to increase. When we compared the anxiety levels of the pregnant women at the beginning of the pandemic and those of pregnant women after two years, we determined that the rate of planned pregnancies have increased. At the beginning of the pandemic, the ratio of planned pregnancy was 70%, while it was 78.5% after two years . We observed that pregnant women who were able to admit to the hospital for routine control at the beginning of the pandemic were predominantly high school graduates (50.5%), while pregnant women were predominantly university graduates after the restrictions were removed. (39.5%) At the beginning of the pandemic,the trait anxiety levels of primigravidas were not different compared to those with a second pregnancy, but they had a higher level of state anxiety. This finding was mentioned in another study conducted at the beginning of the pandemic in our country, which stated the fact that the anxiety levels of those who had their first pregnancy were higher than multipars(7). A study that Lebel et al. conducted in Canada during the pandemic reported higher levels of anxiety in primiparous (8). Another study found that first-time pregnant women may have relatively high anxiety levels because of concerns about the baby's health status, physical changes experienced by pregnant women, and fear of childbirth(9).

In previous studies, it was established that the pandemic has a significant effect on the mental health of pregnant women and that perinatal anxiety is significantly higher than it was in the pre-pandemic period(10, 11). In this study,the averages of state and trait anxiety levels of pregnant women were found to be higher at the beginning of the pandemic in social restrictions. In a prior study conducted in our country, similar results were found when restrictions were removed but there was no vaccination (7). Therefore, the widespread use of the vaccine resulted with a significant decrease in the anxiety levels of pregnant women.

In a retrospective study, Zhou et al. reported that advanced age and chronic diseases posed a significant risk of death from COVID-19. This was later supported in some meta-analyses (12, 13). In our study, we found no significant difference in age-related anxiety scores in pregnant women at the beginning of the pandemic, but the anxiety score increased as the age increased in pregnant women after two years period. This situation may be related to the increase in insights into the relationship between the disease and age.

While we expected higher anxiety scores of pregnant women who had to work during social restrictions due to the fear of contagion at the beginning of the pandemic, we did not find a significant difference in state anxiety scores.However, contrary to expectations, the trait anxiety scores of those who did not work were significantly higher than those who worked. This may be attributed to the fact that better social support reduces anxiety symptoms, as stated in the literature(7, 14). This social support includes the pregnant woman's family, social environment, and medical staff. It has been made clear in our study that not only medical diagnoses and treatment should be provided for pregnant women, but also adequate psychosocial care should be taken, and support should be given by pregnant woman's family, social environment and health professionals during such pandemics.

CONCLUSION

Studies conducted during the COVID-19 pandemic have clearly reported that the pandemic has had a significant impact on the mental health of pregnant women. Stress-related pregnancy complications are an important cause of morbidity and mortality for both mothers and newborns. These complications can be reduced with the protective effect of psychosocial support. Therefore, psycho-social support programs for pregnant women should be kept ready in major disasters.

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