

Araştırma Makalesi/Research Article

The Effect Of Anxiety Experienced in The Last Trimester Of Pregnancy On Anxiety And Pain During Childbirth

Gülsüm GÜNDOĞDU¹, Gülşen ERYILMAZ²

Gebelerin Son Trimesterde Yaşadıkları Anksiyetenin Doğum Sırasındaki Anksiyete Ve Ağrı Üzerine Etkisi

ABSTRACT

Objective: The study determined the relationship between the anxiety levels of the last trimester pregnant women and the anxiety and pain levels in the phases of labor.

Methods: The research was conducted between July 2012 and July 2013 in the outpatient clinic and delivery room of a Gynecology and Obstetrics Hospital in the east. The population of the study consisted of pregnant women in the late last trimester (between 36 and 39 weeks) who applied to the hospital for antenatal controls between July 2012 and March 2013. The sample of the research was created with 293 pregnant women selected by the improbable random method from the specified population. The research has a descriptive, cross-sectional and relationship-seeking design and data were collected with the "Personal Information Form", "State and Trait Anxiety Scale" and "Visual Analog Scale".

Results: A positive and significant correlation was found between the state anxiety score of the pregnant women in the last trimester and the state anxiety score in the latent($p<0.001$), active($p<0.05$) and transitional phases of labor($p<0.01$). A highly significant positive correlation was found between the trait anxiety score of the pregnant women in the last trimester and the state anxiety score in the latent($p<0.001$), active($p<0.001$) and transitional phases of labor($p<0.001$). No significant correlation was found between the state and trait anxiety scores in the last trimester of pregnant women and pain in the latent, active and transitional phases of labor($p>0.05$).

Conclusion: While a significant relationship was determined between state and trait anxiety in the last trimester and state anxiety in the birth phases; it was determined that there was no significant relationship with pain in the labor phases.

Keywords: Anxiety, labor pain, last trimester, pregnancy.

ÖZ

Amaç: Araştırma, gebelerinin son trimesterdeki anksiyete düzeyleri ile doğum fazlarındaki anksiyete ve ağrı düzeyleri arasındaki ilişkiyi belirlemiştir.

Yöntem: Araştırma doğudaki bir Kadın Doğum Hastanesi poliklinik ve doğum salonunda Temmuz 2012-Temmuz 2013 tarihleri arasında yapılmıştır. Araştırmanın evrenini, Temmuz 2012-Mart 2013 tarihleri arasında hastaneye antenatal kontroller için başvuran son trimesterin geç dönemindeki (36-39.haftalar arası) gebeler oluşturmuştur. Araştırmanın örneklemini, belirtilen evrenden olasılıksız rastlantısal yöntemi ile seçilen 293 gebe ile oluşturmuştur. Araştırma tanımlayıcı, kesitsel ve ilişki arayan tasarımda olup veriler "Kişisel Bilgi Formu", "Durumluk ve Sürekli Anksiyete Ölçeği" ve "Görsel Analog Ölçeği" ile toplanmıştır.

Bulgular: Gebelerin son trimesterde durumluk anksiyete puanı ile doğumun latent($p<0.001$), aktif($p<0.05$) ve geçiş fazındaki($p<0.01$) durumluk anksiyete puanı arasında pozitif yönde anlamlı bir ilişki saptanmıştır. Gebelerin son trimesterdeki sürekli anksiyete puanı ile doğumun latent($p<0.001$), aktif($p<0.001$) ve geçiş fazındaki durumluk anksiyete puanı arasında pozitif yönde oldukça anlamlı bir ilişki saptanmıştır($p<0.001$). Gebelerin son trimesterindeki durumluk ve sürekli anksiyete puanları ile doğumun latent, aktif ve geçiş fazlarındaki ağrıları arasında anlamlı bir ilişki saptanmamıştır($p>0.05$).

Sonuç: Son trimesterdeki durumluk ve sürekli anksiyeteleri ile doğum fazlarındaki durumluk anksiyeteleri arasında anlamlı ilişki belirlenirken; doğum fazlarındaki ağrıları ile anlamlı bir ilişkisinin olmadığı belirlenmiştir.

Anahtar Kelimeler: Anksiyete, doğum ağrısı, gebelik, son trimester.

¹**Corresponding author:** Associate Professor, Erzincan Binali Yıldırım University, Faculty of Health Sciences, Department of Midwifery, Erzincan, Turkey. e-mail: glsm_gndg_24@hotmail.com; ggundogdu@erzincan.edu.tr ORCID ID: 0000-0002-2826-5620

² Professor, Faculty of Nursing, Ataturk University, Erzurum, Turkey, e-mail: erylilmaz@atauni.edu.tr ORCID ID: 0000-0001-7026-9038
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INTRODUCTION

Anxiety is a feeling of uneasiness, worry, and fear that is life-threatening or is perceived as a threat, and it is defined as a mood in the face of any event that is felt and perceived as the possibility of danger from the internal or external world or as dangerous by the person (Şahin, 2019; Kafes, 2021). Anxiety manifests itself with increased heart and respiratory rate, body and muscle pain, gastrointestinal system problems and indigestion, constant fatigue and the lack of energy, negative physical symptoms and emotions, more risk-taking behaviors and suicidal thought (Furtado, Gonçalves Machado and Carneiro, 2019). Although pregnancy is a normal life period during which physiological, psychological, and social changes are experienced, in the case of hormonal changes, genetic predisposition, and social and psychological changes, psychotic disorders such as anxiety, and depression develop into and/or progress to psychological problems in women (Viswasam, Eslick and Starcevic, 2019; Öztürk ve Aydın, 2019). In the studies conducted it has been reported that 9-23% of pregnant women have anxiety symptoms and 15.2% have anxiety disorder (Loughnan et al., 2018). Studies in Turkey report that the rate of distress, anxiety and depression during pregnancy varies between 12-75% (Dündar, Özsoy, Aksu ve Toptaş., 2019).

Low socioeconomic status, young and advanced age (Damanik and Tridiyawati, 2023), unwanted pregnancies, familial and marital problems, familial and individual psychiatric problems, low self-esteem, alcohol and substance abuse, perinatal stressors, inadequate hospital conditions for the baby, adverse living conditions, emergence of anxiety disorders during pregnancy increases the probability (Topaç Tuncel, 2019; Aral, Köken, Bozkurt, Şahin and Demirel., 2014; Keleş Gözütok, 2019; Vaira, Karinda and Wahdah., 2023). It is stated that increased maternal anxiety is associated with recurrent abortion in fetuses and infants, the increased risk of infant admission to neonatal care (Viswasam et al., 2019) respiratory and digestive diseases in children, disorder in children's behavioral/emotional/cognitive development (Hasanjanzadeh and Faramarzi, 2017; Zijlmans, Beijers, Riksen-Walraven and De Weerth., 2017; Sinesi, Maxwell, O'Carroll and Cheyne, 2019; Fan et al., 2016) and child and adolescent behavioral problems and pregnant women with high anxiety go to prenatal follow-ups frequently (Viswasam et al., 2019), their

probability of cesarean section increases (Furtado et al., 2019; Lin et al., 2019), postnatal anxiety and depression, childbirth-related post-traumatic stress disorders, and mother-infant interaction problems also increase (Viswasam et al., 2019; Furtado et al., 2019; Lin et al., 2019).

With visceral and somatic components, labor pain is a complex, specific, and multidimensional response to sensory stimuli produced during childbirth, and is often cited by women as the most intense pain and, in many cases, the most feared aspect of labor (Howard, 2017; John and Angeline, 2017; Handayani, Salmarini and Rezekika, 2017; D. Kongsuwan W and Chatchawet, 2021; Aziato, Acheampong and Umoar, 2017; Alimoradi, Kazemi, Gorji and Valiani, 2020; Kazeminia et al., 2020). Anxiety is considered to be the most important factor in the relationship with increased pain at birth and fear of childbirth. In particular, trait anxiety determines the severity and frequency of state anxiety. Increased anxiety makes the pain more severe (Baghani, Sharifzadeh, Nezhad Keramat and Khosravi., 2019; Çalışkan, 2019; Dursun and Kızılırmak, 2018). Anxiety is usually directly related to acute and short-term pain and increases the severity of each other (Çalışkan, 2019; Dursun and Kızılırmak, 2018; Aral et al., 2014; Witcraft, Perry, Viana, Tull and Dixon, 2023; Vaira, Karinda and Wahdah., 2023; Durdu, 2015; Damanik and Tridiyawati, 2023; Taşkın 2019).

Excessive anxiety associated with fear of childbirth causes more catecholamine release, increased muscle tension, decreased blood flow, and increased stimuli to the brain, resulting in greater pain perception, pain intensity, and muscle tension. Increased fear and anxiety. It reduces the effectiveness of contraction, disrupts the comfort of the woman, increases her fear and anxiety pathologically, causes slowing of labor, decreased ability to cope with pain, and delays in the progression of labor (Çalışkan, 2019; Dursun and Kızılırmak, 2018; Aral et al., 2014; Witcraft et al., 2023; Vaira et al., 2023; Durdu, 2015; Damanik and Tridiyawati, 2023; John and Angeline, 2017; Baghani et al., 2019). Uncontrollable labor pain; it will bring along obstetric complications that may cause fetal hypoxia, deterioration of heart rhythm and neonatal vital signs, and increased midwifery intervention (Alimoradi et al., 2021; Ranjbaran, Khorsandi, Matourypour and Shamsi., 2017).

Pregnancy and birth are considered as periods when physiological, psychological and biological

balances should be preserved. Midwives have important responsibilities in defining the objective and subjective signs of anxiety, which is one of the factors that are effective in completing the pregnancy and delivery process with health, determining the levels and taking appropriate precautions. In the literature review, this study was planned to contribute to the lack of resources in determining the relationship between the state and trait anxiety levels of the pregnant women in the last trimester and the anxiety and pain levels in the latent, active and transitional phases at childbirth.

Research Questions

Do the state and trait anxiety of pregnant women affect the state anxiety in the first stage of labor?

Do the state and trait anxiety of pregnant women affect the pain levels in the first stage of labor?

Is there a relationship between state anxiety and pain in the first stage of labor?

MATERIALS AND METHODS

Study Design: The research was conducted in a descriptive, repetitive cross-sectional type and relationship-seeking design.

Sample: The study was carried out between July 2012 and July 2013 in the outpatient clinic and delivery room of a maternity hospital in the Eastern Anatolia Region and affiliated to the Ministry of Health. The population of the study consists of pregnant women who applied for prenatal control on the relevant dates during the research process and who returned late in the last trimester (36 and 39 weeks of gestation). The sample of the study was selected from the specified population using the improbable random method. In cases where the number of elements in the population is known, it was calculated as 272 with the sample selection formula, but considering that there would be data loss during the study, the study was completed with a total of 293 pregnant women. Sample; it was composed of 293 pregnant women between the ages of 18-35 who had no communication problems and no risky pregnancy, had fetuses at term, in vertex position, and had spontaneous vaginal delivery. According to WHO, as of 2016, the transition phase is not included in the current classification of the phases of birth. However, in line with the information at the time the research was conducted, the research data were collected according to three phases, since the first phase of labor consists of latent, active and transition phases.

N= Evrendeki birey sayısı

n= Örneklem alınacak birey sayısı

p= İncelenen olayın görülüş sıklığı

q= İncelenen olayın görülmeşiş sıklığı (1-p)

t= Belirli bir serbestlik derecesinde ve saptanan yanılma düzeyinde t tablosunda bulunan teorik değer

d= Olayın görülüş sıklığına göre yapılmak istenen \pm sapma olarak simgelenmiştir.

$$n = \frac{N t^2 pq}{d^2 (N-1) + t^2 pq}$$

$$n = \frac{4721 (1.96)^2 (0.25)(0.75)}{(0.05)^2 (4721 - 1) + (1.96)^2 (0.25)(0.75)} = 272$$

Data Collection

Data for research; it was collected using "Descriptive Information Form", "State-Trait Anxiety Inventory" and "Visual Analog Scale". Pregnant women who came to the outpatient clinics for antenatal check-ups at 36 and 39 weeks of gestation between July 2012 and March 2013 and who met the research criteria were asked to fill in an introductory information form and a state and trait anxiety scale. These forms are prepared in a separate room after all the procedures of the pregnant women are completed. It was filled by pregnant women in minutes. When these pregnant women came to the delivery room for delivery, the state anxiety scale was applied again. VAS was applied during the latent, active and transitional phases of labor. The pregnant women filled out these forms when they felt comfortable between contractions. The associated hospital has a labor room. During the operation, pregnant women were followed in this labor room. It is used as a screen with curtains between patient beds.

Descriptive Information Form: The questions of this questionnaire, which determines the sociodemographic and pregnancy-related characteristics, were prepared by the researcher.

State-Trait Anxiety Inventory (STAI-STAI): For state and trait anxiety, Spielberg et al. provides. The Turkish validity and reliability of the scale were performed by Öner and Le Compte in 1974-1977. The lowest score to be obtained from the scales, each of which consists of 20 questions, is 20 and the highest is 80. high scores indicate high anxiety. As Öner stated, in Spielberg's STAI and STAI; "0-19 points: No

anxiety", "20-39 points: Mild", "40-59 points: Moderate", "60-79 points: Severe" and "80 points: Severe anxiety". Alpha reliability for the state anxiety scale is between .94 and .96, and between .83 and .87 for the trait anxiety scale(Öner ve LeCompte, 1985).

Visual Analogue Scale (VAS): Developed by Bond and Pilowsky in 1966. In our country, this scale was first used by Aslan in 1998 for postoperative pain relief. It was used in the study in which the sensitivity and selectivity of the VAS and simple descriptive scales were compared. Cline MA et al. In their study to ensure the standardization of the VAS, they determined that the vertical use of the VAS was better understood by the patients. VAS is a scale of 10 cm or 100 mm in length with no pain (zero) on one end and the highest possible pain on the other end (ten), which can be used horizontally or vertically. In the evaluation of VAS results by Cline et al., 0 cm means "no pain", 0.5-3 cm "mild", 3.5-6.5 cm "moderate" and 7-10 cm "severe pain"(Cline, Herman, Shaw and Morter., 1992).

Data Collection Procedure

Between July 2012 and March 2013, pregnant women who came to the outpatient clinics for antenatal check-ups at 36th and 39th gestational weeks and met the research criteria were asked to answer the descriptive information form and STAI-STAI. STAI was re-administered when these pregnant women came to delivery.

Data Analysis

Data analysis was conducted using the Statical Analysis System version(SAS) 9.0 program. SAS is a software package that provides data access, data management, data analysis and data presentation. Continuous variable data of participants (age, duration of marriage, anxiety in pregnancy) PROC. Descriptive statistics parameters were obtained by applying the MEANS procedure. PROC in obtaining the distribution of the participants according to their sociodemographic, disease history and pain status. The FREQ procedure was used. The effect of participants' sociodemographic, disease history and pain status on dependent variables (state anxiety and vas scores in the latent, active and transitional phases of the first stage of childbirth)

was determined by one-way-ANOVA. Differences between sociodemographic, disease histories and levels of pain status were determined with the LSD Line option PROC. Mathematical relationships between dependent variables and independent continuous variables were revealed using the REG procedure PROC. Correlation between dependent variables (Pearson's) was determined using the computes pearson correlation coefficients (CORR) procedure. The significance of the effects and relationships was accepted at the $P < 0.05$ level.. Sociodemographic and obstetric characteristics of pregnant women, data on previous pregnancy and delivery, information on current pregnancy, and state and trait anxiety scores of pregnant women in the last trimester; percentile, age of pregnant women, state and trait anxiety scores of pregnant women in the last trimester, and state anxiety scores and pain scores in the latent, active and transitional phases of the first stage of labor; evaluated with arithmetic mean and standard deviation. The relationship between the state and trait anxiety mean scores of the pregnant women in the last trimester and the state anxiety and pain mean scores in the latent, active and transitional phases of the first stage of labor; evaluated by pearson correlation analysis

The significance of the effects and relationships was accepted at the $p < 0.05$ level.

Ethical Considerations

Approval was obtained from Atatürk University Health Sciences Institute Ethics Committee (dated 24.07.2012, B.30.2.ATA.0.A1./00.00/2071, decision 2012.3.1/2). Written permission from the hospital where the research was conducted and (27.08.2012 dated and B.30.2.ATA.0.70.72.00/00-1725, 016568 numbered). Oral and written consent was obtained from the pregnant women. The principles of the Declaration of Helsinki were followed when obtaining consent from the participants.

RESULTS

The distribution of women according to sociodemographic data is given. It was determined that 56.0% of the pregnant women had moderate-severe STAI, and 59.4% had moderate-severe STAI(Table 1).

Table 1. Distribution of Pregnants by Descriptive Characteristics and Anxiety Status

Sociodemographic Characteristics	n	%
Age		
19-21	64	21.8
22-29	157	53.6
30-34	72	24.6
Educational Level		
Primary school	143	48.8
Secondary school	76	25.9
High school	45	15.4
University	29	9.9
Employment Status		
Unemployed	278	94.9
Employed	15	5.1
Monthly Income		
Bad	129	44.0
Medium	88	30.0
Good	76	26.0
Parity Status of Pregnant Women		
Primiparous	150	51.2
Multiparous	143	48.8
State Anxiety		
20-39 Points	110	37.0
40-59 Points	163	56.0
60-79 Points	20	7.0
Trait Anxiety		
20-39 Points	113	38.5
40-59 Points	174	59.4
60-79 Points	6	2.1

It was found that the average score of the pregnant women from the state anxiety scale in the last trimester was 43.09 ± 10.11 (min-max; 20-70). It was determined that the average trait anxiety score of the pregnant women from the trait anxiety scale was 42.90 ± 8.10 (min-max; 26-72). The average state anxiety score they got from the state anxiety scale in the latent period of birth was 50.02 ± 10.35 (min-max; 23-75), the mean score

they got from the state anxiety scale in the active phase was 57.93 ± 9.52 (min-max; 21-78) from the state anxiety scale in the transitional phase. mean score was determined as 63.68 ± 8.07 (min-max; 38-80). The mean score from the VAS scale in the latent phase of labor was 3.02 ± 2.08 (min-max; 0-10), 6.81 ± 2.23 (min-max; 1-10) in the active phase and 9.57 ± 0.88 in the transitional phase. It was determined as 9.57 ± 0.88 (min-max; 5-10). (Table 2).

Table 2. Distribution of the Last Trimester STAI and STAI Scores of the Pregnant Women and the Averages of the STAI and VAS Scores at the Birth Stages

Scores Obtained	Min-Max Score	X\pmSD
State anxiety	20-70	43.09 \pm 10.11
Trait anxiety	26-72	42.90 \pm 8.10
STAI in the latent phase	23-75	50.02 \pm 10.35
STAI in the active phase	21-78	57.93 \pm 9.52
STAI in the transition phase	38-80	63.68 \pm 8.07
VAS in the latent phase	0-10	3.02 \pm 2.08
VAS in the active phase	1-10	6.81 \pm 2.23
VAS in the transition phase	5-10	9.57 \pm 0.88

STAI: State anxiety, STAI: Trait anxiety, VAS: Visuel analog scale

There was a positive correlation between state anxiety and trait anxiety in the last trimester and state anxiety in the latent phase of labor($p<0.001$), positive correlation with state anxiety in the last trimester and state anxiety in the active phase($p<0.05$), and relationship between state anxiety in the latent phase of labor and active anxiety in the last trimester of pregnancy. There is positive relationship between state anxiety in the

last trimester($p<0.001$), positive relationship between state anxiety in the last trimester and state anxiety in the transitional phase($p<0.01$), and positive relationship between trait anxiety in the last trimester and state anxiety in the transition phase($p<0.001$). No correlation was found between state anxiety and trait anxiety scores in the last trimester and VAS scores in the first stage of labor($p>0.05$)(Table 3).

Table 3. The Relationship Between the Last Trimester STAI and STAI Scores of the Pregnant Women and the STAI and VAS Scores in the Birth Stages

Scores Obtained	STAI in the Latent Phase	STAI in the Active Phase	STAI in the Transition Phase	VAS Score in the Latent Phase	VAS Score in the Active Phase	VAS Score in the Transition Phase
STAI in the last trimester	0.397***	0.139*	0.163**	0.019****	0.018****	0.012****
STAI in the last trimester	0.246***	0.210***	0.234***	-0.08****	0.023****	0.095****

*: $p<0.05$, **: $p<0.01$, ***: $p<0.001$, ****: $p>0.05$ STAI: State anxiety, STAI: Trait anxiety, VAS: Visual analog scale

It was determined that pregnant women who experienced severe state anxiety in the last trimester had higher mean state anxiety scores in the latent, active and transitional phases. In the latent phase of pregnant women with moderate state anxiety in the last trimester; it was observed that pregnant women with severe state anxiety had the highest average pain score in the active and transitional phases. In the latent phase of pregnant women who have moderate persistent anxiety in the last trimester; it was determined that pregnant women with severe trait anxiety mean score had higher state anxiety mean score in active and transitional phases. In the latent phase of pregnant women who have mild continuous anxiety in the last trimester; it was determined that pregnant women with moderate level of trait anxiety had the highest average pain score in the active and transitional phases (Table 4).

It was observed that state anxiety in the latent phase was positively related to the active and transitional phase, and state anxiety in the active phase was positively related to the

transitional phase($p<0.001$). State anxiety in the latent phase; It was positively correlated with latent and transitional VAS scores($p<0.05$); it was not associated with the VAS score in the active phase($p>0.05$). With the active phase and transition phase vas scores of state anxiety in the active phase; It was determined that state anxiety in the transition phase was positively and significantly correlated with the vas score in the transition phase($p<0.001$). It was observed that the latent phase vas score was not significantly associated with the active and transitional phase state anxiety($p>0.05$). Active phase vas score was significant with state anxiety in the transition phase($p<0.01$); a positive correlation was detected between the vas score in the transition phase and the state anxiety in the transition phase($p<0.001$). The latent phase vas score was compared with the active phase and transitional phase vas scores($p<0.001$, $p<0.05$); active phase vas score was found to be positively and significantly correlated with transition phase VAS score($p<0.001$)(Table 5).

Table 4. Anxiety and Pain Mean Scores in the Latent, Active and Transitional Phases According to the Anxiety Scores of the Pregnant Women

	n	%	X±SD					
			Latent Phase STAI	Latent Phase VAS	Active Phase STAI	Active Phase VAS	Transition Phase STAI	Transition Phase VAS
STAI in the pregnancy								
20-39 Points	110	37.0	45.90±10.93	2.95±2.15	57.06±10.35	6.88±2.16	62.26±9.04	9.65±0.74
40-59 Points	163	56.0	51.83±8.90	3.12±2.11	57.98±9.03	6.66±2.30	64.51±7.33	9.49±0.97
60-79 Points	20	7.0	57.85±8.88	2.65±1.31	62.35±7.67	7.55±2.04	64.65±7.39	9.85±0.49
STAI in the pregnancy								
20-39 Points	113	38.5	47.60±10.52	3.04±2.21	55.68±10.09	6.62±2.30	61.60±8.40	9.42±1.10
40-59 Points	174	59.4	51.59±10.03	3.02±1.96	59.13±8.84	6.93±2.17	64.88±7.63	9.68±0.66
60-79 Points	6	2.1	50.00±8.63	2.83±2.93	65.67±8.71	6.67±3.08	67.83±6.05	9.50±0.84

STAI: StateAnxiety; STAI; Trait Anxiety; VAS; Visüel analog scala

Table 5. The Relationship Between State Anxiety and VAS Scores in the Latent, Active, and Transition Phases of Labor and State Anxiety and VAS Scores in the Latent, Active, and Transition Phases of Labor

	VAS in the Latent Phase	STAI in the Active Phase	VAS in the Active Phase	STAI in the Transition Phase	VAS in the Transition Phase
STAI in the latent phase	0.13*	0.52***	0.06	0.49***	0.13*
VAS in the latent phase		0.082	0.37***	0.023	0.14*
STAI in the active phase			0.35***	0.67***	0.21***
VAS in the active phase				0.17**	0.36***
STAI in the transition phase					0.25***

*: p<0.05, **: p<0.01, ***: p<0.001, State anxiety, STAI: Trait anxiety, VAS: Visuel analog scale

4.DISCUSSION

In our study, in which the relationship between the anxiety levels of pregnant women in the last trimester and their anxiety and pain levels during delivery was determined, it was determined that the pregnant women had moderate state and trait

anxiety scores in the last trimester. In our study, it was determined that 56% of the pregnant women in the last trimester had moderate state anxiety, and 59.4% had moderate trait anxiety (Table 1). Madhavanprabhakaran et al. In their study titled "Prevalence of Pregnancy Anxiety and Associated Factors", Prevalence of Pregnancy Anxiety and

Associated Factors, they reported that 71% of low-risk last trimester pregnant women had moderate STAI and that the pregnant women experienced the highest anxiety in the last trimester (Madhavanprabhakaran, D'Souza and Nairy., 2015). In the study "Evaluating The Anxiety State of Pregnant Women in the Last Trimester of Pregnancy and Examining the Fear Of Childbirth and Related Factors", Nekoe and Zarei determined that 47.2% of mothers experienced moderate anxiety (Nekoe and Zarei, 2015). Rasheda Begum and Chowdhury Biswas in their study titled "Prevalence and Associated Factors of Antenatal Anxiety Symptoms in Bangladesh: A Repeated Measures Cluster Data Analysis" it was reported that 37.5% of the pregnant women experienced state anxiety in their studies, in which it was accepted that the highest rate of anxiety was in the last trimester in every trimester of pregnancy, and it was accepted to get a score of $STAI > 45$ from the anxiety scale for state anxiety positivity (Rasheda Begum and Chowdhury Biswas, 2021). Podvornik et al. in their study titled "Depression and Anxiety in Women During Pregnancy in Slovenia" in found STAI of ≥ 45 and 14.5% and 14.0% of STAI ≥ 45 in the last trimester (Podvornik, Velikonja and Praper, 2015). It has been observed in studies that all pregnant women experience anxiety in the last trimester and the rates of pregnant women with mild to moderate anxiety can vary according to the scores obtained from the anxiety scale. In the studies, the cut-off score of the scale for the absence of anxiety and mild anxiety was 45 points and below; it is seen that the cut-off point of the scale can be taken as 45 and above to define moderate and high level anxiety, which affects the expression of the percentages of pregnant women with moderate anxiety. In our study, it was observed that the majority of pregnant women experienced moderate anxiety. It has been observed that pregnant women may experience mild to moderate anxiety in the last trimester and the scores obtained from the anxiety scale may vary according to the sociodemographic and obstetric characteristics of the pregnant women.

It was found that the average score of the pregnant women from the state anxiety scale in the last trimester was 43.09 ± 10.11 (min-max; 20-70). It was determined that the average trait anxiety score of the pregnant women from the trait anxiety scale was 42.90 ± 8.10 (min-max; 26-72) (Table 2). Aral et al. In their study titled "Evaluation of The Effects of Maternal Anxiety on the Duration of

Vaginal Labor Delivery", state anxiety was found to be 41.51 ± 11.01 continuous 46.03 ± 7.72 in the latent phase of labor in pregnancies of 28 weeks of gestation and above, and state anxiety was 53.67 ± 9.37 , trait anxiety score was 47.38 ± 8.17 (Aral, 2008). In Dursun's in their study titled "The Relationship Between Personality Traits and Anxiety Levels of Pregnants and Birth Fears" master's thesis study, state anxiety was determined as 45.94 ± 5.51 and trait anxiety 46.32 ± 5.35 in 28-40 weeks pregnant (Dursun and Kızıllırmak, 2018). It was determined that the pregnant women in our study experienced moderate state and trait anxiety in the last trimester, and this result is similar to the literature (Table 2). In our study, the mean state anxiety score of the pregnant women was found to be 50.02 ± 10.35 in the latent phase, 57.93 ± 9.52 in the active phase, and 63.68 ± 8.07 in the transition phase. As their labor phases progressed, their moderate mean state anxiety scores were observed to reach severe levels (Table 2). In Aral's speciality thesis titled "Evaluation of the Effects of Antenatal Maternal Anxiety on Normal Vaginal Delivery", passive phase before 3 cm dilatation; They determined the mean score of state anxiety as 53.67 ± 9.37 and trait anxiety 47.38 ± 8.17 in the latent phase, which was divided into two parts as the active phase at 3 cm and beyond (Aral et., 2014). Türk and Erkaya "Determining The Status of Anxiety and Depression in Women During Pregnancy and in the Postpartum Period" that the state and trait anxiety of pregnant primiparae 47.09 ± 6.57 47.09 ± 6.57 and the state and trait anxiety of multiparae 41.27 ± 4.93 and 44.89 ± 5.88 it was found (Türk and Erkaya, 2018). Kazemi Robati et al. In the study titled "The Effects of the Presence of Doula on Birth Anxiety and Pain during Childbirth: A Randomized Controlled Study", the mean state anxiety score was 52.33 ± 11.81 , while cervical dilatation was 4-5 cm; while cervical dilatation was 7-8 cm, it was found to be 58.75 ± 9.71 (Kazemi Robati et al., 2020). In Taşkın's study titled "The Effect of Hot Shower Application on Pain Anxiety and Comfort in the I. Stage of Labor", the mean state anxiety score was 34.15 ± 5.73 , while the cervical dilatation was 4 cm, it was found to be 47.46 ± 3.26 when 5-7 cm and 48.37 ± 3.48 when 8-10 cm (Taşkın., 2019). The increase in the mean state anxiety scores as the labor phases of the pregnant women in our study progress is similar to the previous study results.

In our study, it was specified that the mean pain scores of pregnant women according to the phases

of labor were 3.02 ± 2.08 in the latent phase, 6.81 ± 2.23 in the active phase, and 9.57 ± 0.88 in the transition phase, and as the phases progressed, moderate pain reached a severe level (Table 2). In Durdu's study titled "Investigation of Factors Affecting Birth Pain", pre-contraction pain scores were 2.67 ± 0.60 in the latent phase in primiparous, 3.75 ± 0.65 in the post-contraction phase, 5.37 ± 0.82 in the active phase and 6.93 ± 1.08 in the transitional phase; In multiparity, pre-contraction pain scores in the latent phase were 2.66 ± 0.49 , 5.30 ± 0.84 in the active phase and 6.85 ± 1.05 in the transitional phase (Durdu, 2015) In Taşkın's study titled "Effect of Hot Shower Application on Pain Anxiety and Comfort in The First Stage of Labor: A Randomized Controlled Study", it was found to be 5.33 ± 1.61 in the latent phase, 8.22 ± 1.10 in the active phase, and 9.69 ± 1.31 in the transitional phase (Taşkın and Ergin, 2022). Erdogan Ünalmiş et al. study titled "Effects of Low Back Massage on Perceived Birth Pain and Satisfaction Author Links Open Overlay Panel" it was found VAS cervical dilatation latent phase (3–4 cm) 7.3 ± 1.3 , active phase 5–7 cm 8.8 ± 1.0 and transition phase 8–10 cm 9.2 ± 2.4 (Erdogan, Yanikkerem and Goker, 2017). Aktas et al. titled "Effect of Birth Ball Exercising for the Management of Childbirth Pain in Turkish Women" cervical dilatation latent phase VAS 2.3 ± 1.0 , cervical dilatation active phase 6.9 ± 0.9 and cervical dilatation transition phase 8.9 ± 1.2 was found (Aktaş et al., 2021). In Taşkın's study titled "The Effect of Hot Shower Application on Pain Anxiety and Comfort in the I. Stage of Labor", it was found that cervical dilatation was 4 cm while VAS was 5.33 ± 1.61 , 8.23 ± 1.10 when it was 5–7 cm, and 9.69 ± 1.31 when it was 8–10 (Taşkın, 2019). In our study, similar to the literature, mean pain scores were found to increase as the phases of labor progressed.

In our study, positive correlation ($p < 0.001$) was revealed between the state anxiety and trait anxiety scores of the pregnant women in the last trimester and their state anxiety score in the latent phase of labor. A significant positive correlation was found between the state anxiety score of the pregnant women in the last trimester and their state anxiety score in the active phase of labor ($p < 0.05$), and a positive correlation was detected between the trait anxiety score of the pregnant women in the last trimester and their state anxiety score in the active phase of labor ($p < 0.001$). An advanced positive correlation was found between the state anxiety score of the pregnant women in the last trimester

and their state anxiety score in the transition phase ($p < 0.01$), and positive correlation was observed between the trait anxiety score of the pregnant women in the last trimester and their state anxiety score in the transition phase of labor ($p < 0.001$) (Table 3). These results showed that increased anxiety in the last trimester was positively correlated with anxiety during labor and that anxiety during pregnancy increased anxiety in the latent, active, and transition phases of labor. No significant relationship was found between the scores obtained by the pregnant women from the state anxiety and trait anxiety in the last trimester and the VAS scores in the latent, active and transition phases of labor ($p > 0.05$) (Table 3). Aral et al. In their study titled "Evaluation of The Effects of Maternal Anxiety on the Duration of Vaginal Labor Delivery", it was found that trait anxiety in the last trimester of pregnancy was similar to trait anxiety at birth, there was no statistically significant difference ($p > 0.05$), and state anxiety increased at birth ($p < 0.05$). In particular, the negative effects of increased acute state anxiety on the birth phases are stated. For this reason, it is important for those who care for pregnant women to provide emotional support to the woman during the last trimester and delivery (Aral et al. 2014). This is because the vast majority of pregnant women in the last trimester it may be associated with moderate state anxiety and trait anxiety scores and low levels of severe anxiety. At the same time, the fact that moderate anxiety has a positive effect on coping with pain and alleviates the perception of pain at birth, as well as the fact that half of the participants are multiparous, may have contributed to this result.

It was determined that pregnant women who experienced severe state anxiety in the last trimester had higher mean state anxiety scores in the latent, active and transitional phases. In the latent phase of pregnant women with moderate state anxiety in the last trimester; it was observed that pregnant women with severe state anxiety had the highest average pain score in the active and transitional phases. In the latent phase of pregnant women who have moderate persistent anxiety in the last trimester; it was determined that pregnant women with severe trait anxiety mean score had higher state anxiety mean score in active and transitional phases. In the latent phase of pregnant women who have mild continuous anxiety in the last trimester; it was determined that pregnant women with moderate level of trait anxiety had the

highest average pain score in the active and transitional phases (Table 4).

It was observed that state anxiety in the latent phase was positively related to the active and transitional phase, and state anxiety in the active phase was positively related to the transitional phase ($p < 0.001$). State anxiety in the latent phase; It was positively correlated with latent and transitional VAS scores ($p < 0.05$); it was not associated with the VAS score in the active phase ($p > 0.05$). With the active phase and transition phase VAS scores of state anxiety in the active phase; It was determined that state anxiety in the transition phase was positively and significantly correlated with the VAS score in the transition phase ($p < 0.001$). It was observed that the latent phase VAS score was not significantly associated with the active and transitional phase state anxiety ($p > 0.05$). Active phase VAS score was significant with state anxiety in the transition phase ($p < 0.01$); A positive correlation was detected between the VAS score in the transition phase and the state anxiety in the transition phase ($p < 0.001$). The latent phase VAS score was compared with the active phase and transitional phase vas scores ($p < 0.001$, $p < 0.05$); active phase VAS score was found to be positively and significantly correlated with transition phase VAS score ($p < 0.001$) (Table 5). Anxiety is considered to be the most important factor in the relationship with increased pain at birth and fear of childbirth. In particular, trait anxiety determines the severity and frequency of state anxiety. Increased anxiety makes the pain more severe (Baghani et al., 2019). Increased anxiety in the last trimester, physical discomfort, and approaching birth can also cause this (Agustina, Anggriani and Primadevi, 2023; Val and Míguez, 2023). Higher anxiety might have resulted from more prejudice and pain experience causing people to be more sensitive to both pain and bodily sensations (Curzik and Begic, 2011; Mete and Çiçek, 2016; Taşkın, 2019).

It was observed that state anxiety in the latent phase was positively related to the active and transitional phase, and state anxiety in the active phase was positively related to the transitional phase ($p < 0.001$). State anxiety in the latent phase; It was positively correlated with latent and transitional VAS scores ($p < 0.05$); it was not associated with the VAS score in the active phase ($p > 0.05$). With the active phase and transition phase VAS scores of state anxiety in the active phase; It was determined that state anxiety in the transition phase was positively and

significantly correlated with the VAS score in the transition phase ($p < 0.001$). It was observed that the latent phase VAS score was not significantly associated with the active and transitional phase state anxiety ($p > 0.05$). Active phase VAS score was significant with state anxiety in the transition phase ($p < 0.01$); A positive correlation was detected between the VAS score in the transition phase and the state anxiety in the transition phase ($p < 0.001$). The latent phase VAS score was compared with the active phase and transitional phase vas scores ($p < 0.001$, $p < 0.05$); active phase VAS score was found to be positively and significantly correlated with transition phase VAS score ($p < 0.001$) (Table 5).

CONCLUSIONS AND RECOMMENDATIONS

In this study, it was determined that more than half of the pregnant women experienced moderate anxiety. It was observed that the anxiety of the pregnant increased as the birth phases progressed, and the moderate anxiety in the latent and active phases reached severe levels in the transitional phase. It was determined that the pain of the woman increased as the birth phases progressed, and the pain that was perceived as mild at the beginning was felt as severe in the last stage. Anxiety in the labor phases was found to be associated with anxiety in pregnancy. It has been determined that pain and anxiety in labor phases are positively related to each other and anxiety in one phase of labor positively affects anxiety in the next phase. It has been determined that the pain experienced in the birth phases is not related to the anxiety in the last trimester. These results show that the anxiety experienced in the last trimester of pregnancy affects the anxiety in the phases of labor and is a determinant for the anxiety level to be experienced in the birth phases, the anxiety experienced in each phase of labor is related to the anxiety experienced in the next phase, the anxiety and pain in each phase are related to each other, and the anxiety experienced at birth It has been found that it affects the pain experienced in the next phase. In line with these results; Raising awareness about the prevalence and reflections of anxiety in pregnancy and childbirth, arranging trainings for health professionals on the subject, measuring anxiety levels in prenatal follow-ups and delivery, protecting and increasing maternal and fetal health, providing counseling and information support to pregnant women with high

anxiety within the scope of midwifery and nursing care, and Suggestions can be made to take precautions and create algorithms to be used in clinics.

Limitations of This Study

The limitations of this study are that the study was conducted in a single hospital, and only normal pregnant women were included, and no high-risk pregnant women were included in the study.

Ethics Committee Approval: Approval was obtained from Atatürk University Health Sciences Institute Ethics Committee (dated 24.07.2012, B.30.2.ATA.0.A1./00.00/2071, decision 2012.3.1/2). Written permission from the hospital where the research was conducted and (27.08.2012 dated and B.30.2.ATA.0.70.72.00/00-1725, 016568 numbered). Oral and written consent was obtained from the pregnant women. The principles of the Declaration of Helsinki were followed when obtaining consent from the participants.

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