Evaluation of Anxiety Levels and Family-Centred Care Receipt Status among Turkish Mothers with Babies Admitted to the Neonatal Unit: A Two-Centre Study

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ABSTRACT

This research was conducted to evaluate the anxiety levels and family-centred care receipt status of mothers whose babies were treated in the neonatal intensive care unit (NICU). Research was conducted in a descriptive and cross-sectional design between January and December 2022 in the NICU of two separate hospitals, one of which is a university hospital, and the other is a public hospital located in the east of Turkey. Data were collected with The Introductory Information Form, Spielberger State-Trait Anxiety Inventory and Newborn Family-Centred Care Scale. The mothers' state anxiety level mean score was 41.51±9.6, their trait anxiety level mean score was 40.31±7.7 and they experienced a moderate level of anxiety. The total mean score of the Newborn Family-Centred Care Scale was 3.7±0.7 and mean scores from the subscales scores are; 4.0±0.7 for dignity and respect, 3.9±0.8 for information sharing, 4.0±0.8 for participation in care, and 3.3±1.1 for cooperation with the family. A significant negative relationship was found between the mothers' family-centred care scale total score and mean subscale scores and their state and trait anxiety levels (p <0.05). The mothers whose babies are treated in the NICU received more family-centred care and their anxiety scores decreased significantly.

Bebeği Yenidoğan Ünitesinde Yatan Türk Annelerin Anksiyete Düzeyleri İle Aile Merkezli Bakım Alma Durumlarının Değerlendirilmesi: İki Merkezli Bir Araştırma

MAKALE BİLGİSİ

ÖZ

Bu araştırma bebeği yenidoğan yoğun bakım ünitesinde(YYBÜ) tedavi gören annelerin anksiyete düzeyleri ve aile merkezli bakım alma durumlarını değerlendirmek amacıyla yapılmıştır. Araştırma tanımlayıcı ve kesitsel tasarımda Ocak-Aralık 2022 tarihleri arasında Türkiye'nin doğusunda bulunan biri üniversite diğeri devlet hastanesi olmak üzere iki ayrı hastanenin YYBÜ' nde yapılmıştır. Veriler Tanıtıcı Bilgi Formu, Spielberg Durumluk-Süreklik Kaygı Ölçeği ve Yenidoğan Aile Merkezli Bakım Ölçeği ile toplanmıştır. Annelerin durumluk kaygı düzeyi puan ortalamalarının 41.51±9.6, süreklik kaygı düzeyi puan ortalamalarının 40.31±7.7 olduğu ve orta düzeyde kaygı yaşadıkları saptanmıştır. Yenidoğan aile merkezli bakım ölçeğinin toplam puan ortalamaları 3.7±0.7 ve alt boyut puan ortalamaları sırası ile ; itibar ve saygı 4.0±0.7, bilgi paylaşımı 3.9±0.8, bakıma katılım 4.0±0.8 ve aile ile iş birliği 3.3±1.1 olarak belirlenmiştir. Annelerin aile merkezli bakım ölçeği toplam puan ve alt boyut puan ortalamaları ile durumluk ve süreklik kaygı düzeyleri arasında negatif yönlü anlamlı ilişki olduğu belirlenmiştir(p<0.05). Bebeği YYBÜ'nde tedavi gören annelerin aile merkezli bakım alma durumları artmakta ve kaygı düzeyleri anlamlı olarak azalmaktadır.

INTRODUCTION

The postpartum period is a time of transition to parenthood where biological and psychological changes occur for mothers, and the bond between the mother and the baby develops. During this period, mothers are in constant communication with their babies, attempting to get to know them, learn how to care for them, and adapt to their new role as parents (1,2,3). However, in cases of a complicated pregnancy or childbirth, or if the newborn encounters health issues during the postpartum period, admission to the Neonatal Intensive Care Unit (NICU) may be necessary. It is stated that 8-12% of babies born in developed and developing countries are admitted to the NICU with a complex and life-threatening medical problem (4). This can be especially anxiety-inducing and stressful for parents, particularly those who are experiencing parenthood for the first time and desire to be closely involved with their newborn(5,6,7). A systematic review and meta-analysis discovered that the prevalence of anxiety among parents with babies undergoing treatment in NICUs was initially 41.9% and persisted thereafter, although it declined to 26.3% within the first year(8). Separation from the newborn, the baby's appearance in the unit, the perceived vulnerability, the infant's health status and uncertainties about the baby's health, as well as the NICU conditions (noisy, complex, equipped with various devices), are the leading causes of parents' anxiety and stress(6,9). Research indicates that parents with babies admitted to the neonatal unit experience increased anxiety due to not being able to see their babies as much as they desire and actively participate in their care (10,11). Physical separation of the mother and baby, the mother's inability to participate in care adequately, and the resulting anxiety negatively affect the mother-baby bond (7,12-14). Neonatal nurses maintain the mother-baby interaction in the unit by, for example, having the mother and baby stay in the same room, kangaroo care, initiating early breastfeeding, and involving the family in care (7, 15-17). Indeed, research has shown that parent-infant bonding improves the overall health of the newborn, facilitates rapid discharge, and reduces mothers' stress and anxiety (15-18). The family-centred care approach is one of the most crucial practices in neonatal units that support parent-infant interaction and reduce maternal anxiety levels (19,20).

Family-centred care is an approach to healthcare that involves the collaborative planning between healthcare professionals and patients' families and the implementation and evaluation of health services (21). The American Academy of Pediatrics (AAP) defines family-centred care as a care approach that forms the foundation of the relationship between the patient, parents, and healthcare professionals (22). Current evidence and practice guidelines recommend a family-centred care approach in paediatric nursing to enhance healthcare quality (23,24).

Research findings confirm that implementing family-centred care in neonatal units positively impacts the physical and psychological health of parents and newborns, directly influencing the quality of care (7,25,26). Systematic reviews have demonstrated that family-centred care practices in the NICU enhance newborns' motor and neurobehavioral systems, reduce hospital stay durations, and lower rates of readmission (27,28). Researchers have also found that increasing interaction between parents and their babies through family-centred care facilitates easier monitoring of their infants' growth and development, reduces depression and anxiety, lessens caregiving burdens, enhances parenting roles, and strengthens parent-infant attachment (28-30).

Evidence suggests and supports mothers' participation in the care of newborns (31-33). However, according to reviews, there are still limitations in the implementation of family-centred care in neonatal units (7,31,34). Qualitative studies have reported that mothers are not adequately included in the care in neonatal units and cannot even see their babies enough (10,11). Health professionals, on the other hand, have reported experiencing administrative and organisational issues in this regard, emphasising the need for planned changes in institutional policies (35).

There are generally no institutional policies for family-centred care in Turkey. In some hospitals, there are regulations that facilitate family-centred care, but these are also insufficient. In studies conducted in our country, it has been reported that the participation in the care of mothers whose babies are in the NICU is supported, but the family-centred care approach is not fully implemented (36,37). In addition, examining the relationship between the family-centred care approach and the anxiety levels of mothers no study was found in the NICU. This research aimed to evaluate the anxiety levels and family-centred care receipt status of mothers whose babies were treated in the neonatal unit of two hospitals with different institutional policies for family-centred care.

MATERIALS AND METHODS

Study Design and Sample

This research was conducted in a descriptive and cross-sectional design between January and December 2022 in the NICU of two separate hospitals, one of which is a university hospital, and the other is a public hospital located in the east of Turkey. The university hospital has three levels of Neonatal Intensive Care Units (NICUs), with 20 incubators in each unit. There are 45 nurses, two neonatology specialists and assistant doctors receiving specialist training in paediatric health and diseases in the NICU. Risky newborns are treated at the 2nd and 3rd levels of intensive care units, and mothers can only visit them during designated hours. At the first level of intensive care, newborns in a lower-risk category or those meeting discharge criteria receive treatment, and by creating a suitable environment, mothers are allowed to stay in the same room as their babies, preparing for discharge. For this reason, the research was conducted at the firs level.

The public hospital has three levels of NICU. Risky newborns are treated at the 3rd level of intensive care units, while less risky newborns are treated in the 1st and 2nd level intensive care units. The unit is equipped with 31 incubators, four isolation rooms, and three radiant warmers. Two neonatologists, nine paediatricians and 20 nurses work in the neonatal unit. There is also a mother's lodge available for mothers of newborns receiving treatment at all levels, allowing them to stay in the lodge or participate in the care of their babies during home care hours.

Hospital records indicate that a total of 800 newborns underwent treatment in the NICUs of both hospitals within one year. The sample size for the study, calculated using the G*Power 3.1.9.7 software and based on Cohen's effect size values for independent groups in t-tests, was determined to be at least 176, considering moderate effect size, a 5% margin of error, and 95% power. One hundred eighty mothers were included in this study, in equal numbers from both hospitals (university hospital; n: 90, public hospital; n: 90). Mothers' anxiety levels and family-centred care experiences can be influenced by time. Therefore, before matching, mothers were grouped according to their babies' length of stay (1-7 days, 8-14 days, and more than 15 days).

The research's inclusion criteria were that the mother be literate in Turkish, aged 18 and above, not have diagnosed hearing or intellectual impairments, have a baby receiving treatment in the NICU, and be present in the hospital for her baby. Exclusion criteria included mothers who did not visit their babies and adolescent mothers.

Ethical Considerations

Before starting the research, ethical approval was obtained from the University's Non-Interventional Clinical Research Ethics Committee with decision number 2022/2829. Before their participation, the purpose and content of the research and data confidentiality were explained to the mothers who voluntarily agreed to participate, and their verbal and written consents were obtained. The research was conducted in accordance with the Declaration of Helsinki and Research Committee guidelines.

Data collection

The data were collected by one-on-one interviews with mothers, using the Introductory Information Form, Spielberger State-Trait Anxiety Inventory and Newborn Family-Centred Care Scale.

Mother and Newborn Introductory Information Form

It was created by researchers in line with the literature and has two parts. The first part includes questions about the mother, including age, education level, employment status, family type, socioeconomic status, method of delivery, number of living children, receiving childcare support, and the presence of any chronic illness. The second part includes questions about the newborn, including gender, birth weight, gestational age, birth to single or multiple pregnancies, postnatal day, medical diagnosis, duration of hospitalisation, and feeding method.

Spielberger State-Trait Anxiety Inventory (STAI)

STAI was developed by Spielberger in 1970 for adults and was adapted to the Turkish community by Oner and De Compte in 1983(38,39). Scoring for the State Anxiety Scale (SAS) is done on a scale of 1 = Not at all, 2 = Somewhat, 3 = Moderately , and 4 = Very much . The Trait Anxiety Scale (TAS) scoring is 1=Almost never, 2=Sometimes, 3=Often, and 4=Almost always. The STAI has a total of 40 questions, 20 on each scale. The scores obtained on both scales can vary between 20 and 80. High scores indicate high anxiety levels and low scores indicate low anxiety levels. The score ranges are interpreted as follows: 0-19: No anxiety, 20-39 points: Mild anxiety, 40-59 points: Moderate anxiety, 60-79 points: Severe anxiety, 80 points: Very severe anxiety (panic). The Cronbach's alpha reliability coefficient varies between 0.83-0.87 for the State Anxiety and 0.94-0.96 for the Trait Anxiety subscales *(38,39)*. In this research, the Cronbach's Alpha value was 0.76.

Newborn Family-Centred Care Scale (NFCCS)

It was developed by Yıldız to assess family-centred care in Neonatal Intensive Care Units (NICUs), building upon the 7-item Family-Centred Care Scale investigated for validity and reliability by Altınparmak and Taşarslan, originally created by Curley and colleagues(40,41). The scale consists of 29 items. They created the scale based on four main concepts (dignity and respect, information sharing, participation in care, collaboration with family) which were the main components of the Family Centered Care Scale in line with the literature and views.

The 29-item NFCCS is a 5-point Likert scale (1: Strongly Disagree, 2: Disagree, 3: Undecided, 4: Agree, 5: Strongly Agree). The lowest possible score from the scale is 29, and the highest is 145. Using the total and sub-dimension scores of the scale as the average item score is recommended. For example, if the total average score of the scale is 139, the average item score for the scale total is calculated as 139/29: 4.79. Accordingly, mothers' evaluations of family-centred care are 4.7 out of 5. High scores on the scale indicate that family-centred care has improved/increased positively. In Yıldız's study, the Cronbach alpha reliability coefficient of NFCCS was found to be 0.93 for the entire scale (41). In this research, Cronbach's Alpha value was found to be 0.88.

Data Analysis

The data was analysed using the SPSS 22 software package. Data regarding sociodemographic characteristics were evaluated using number, average, percentage and chi-square analysis. The fit of the numerical data to normal distribution was assessed with Shapiro-Wilk and Skewness-Kurtosis (42,43). A significance level of $p < 0.05$ was considered statistically

significant. Descriptive statistics, Chi-Square Analysis, independent samples t-test, one-way MANOVA, and Pearson correlation analysis were employed for data analysis.

RESULTS AND DISCUSSION

56.1% of the mothers were between the ages of 26-35. 83% gave birth by caesarean section, and it was the first birth experience of 47.8%. There were no significant differences between hospitals regarding mothers' age and delivery method. However, a significant difference was found between the frequency of seeing the baby and the duration separated from the baby (Table 1).

Table.1. Distribution of Mothers According to Their Descriptive Characteristics (n:180)

Descriptive Characteristics	All Datas(N:180)		Public Hospital (N:90)		University Hospital (N:90)			
	N	%	N	%	N	%	x 2	p
Age								
18-25	51	28,3	28	31,1	23	25,6		
26-35	101	56,2	51	56,8	50	55,7	3,115	,374
36-46	28	15,5	11	12,2	17	16,7		
Type of birth								
Vaginal delivery	29	16,1	17	18,9	12	13,3	1,028	,209
Cesarean section	151	83,9	73	81,1	78	86,7		
Time away from the baby								
Dayf of 1-7	121	67,2	76	84,5	33	36,7		
Days of 8-14	27	15,0	2	2,2	25	27,8	18,556	<0,01
Days of >15	32	17,8	12	13,3	32	35,5		
Frequency of seeing her baby								
I'm staying with my baby	112	62,3	22	24,4	90	100		
3 times in a day	35	19,4	35	38,9	0	0	19,286	<0,01
>3 times in a day	33	18,3	33	36,7	0	0		

Chi-Square Analysis

27.2% of newborns had low birth weight. 41% were treated in intensive care in the late preterm period, and 32.2% were treated in intensive care due to prematurity and low birth weight. Significant differences were observed between hospitals regarding birth weights, gestational weeks and medical diagnoses of newborns (Table 2).

Table.2. Distribution of Newborns According to Descriptive Characteristics (n:180)

Descriptive Characteristics	All Datas(N:180)		Public Hospital (N:90)		University Hospital (N:90)		x 2	p
	N	%	N	%	N	%		
Sex								
Female	80	44,4	41	45,6	39	43,3	,090	,764
Male	100	55,6	49	54,4	51	56,7		
Birth Weight								
<1000 gr	27	15,0	2	2,2	25	27,8		
1000-1500 gr	45	25,0	7	7,8	38	42,2	25,217	<0,01
1500-2500 gr	49	27,2	26	28,9	23	25,6		
>2500 gr	59	32,8	55	61,1	4	4,4		
Gestational age								
32 week	37	20,6	7	7,8	30	33,4		
32-34 week	23	12,8	3	3,3	20	22,2	21,545	<0,01
34-37 week	74	41,0	37	41,1	37	41,1		
38-42 week	46	25,6	43	47,8	3	3,3		
Medical diagnosis of the neonates								
Prematurity	30	16,7	18	20,0	12	13,3		
Prematurity and low birth weight	58	32,2	15	16,7	43	47,8		
Hyperbilirubinemia	13	7,1	10	11,0	3	3,3	38,105	<0,01
Respiratory Distress	59	32,8	39	43,3	20	22,2		
Other problems	22	11,2	8	9,0	12	13,4		

Chi-Square Analysis

The average state anxiety scores of mothers were 41.51±9.6, and the average trait anxiety scores were 40.31±7.7, indicating a moderate level of anxiety. Mothers with babies being treated at the university hospital had significantly lower state anxiety scores (39.0±10.5) compared to mothers with babies being treated at the public hospital. The trait anxiety scale scores were significantly higher for mothers in the university hospital (42.4±8.1) compared to mothers in the public hospital (Table 3).

Table.3. Comparison of Spielberg State and Trait Anxiety Scale Mean Scores of Newborn Mothers (n:180)

Anxiety Inventory	All Datas(N:180)	University Hospital (N:90)	Public Hospital (N:90)		
	X±SD	X±SD	X±SD	t	p
State Anxiety	41,51±9,6	39,0±10,5	43,9±8,0	3,516	**<0,01**
Trait Anxiety	40,31±7,7	42,4±8,1	38,1±6,6	3,831	**<0,01**

t: Independent Samples T-Test

NFCCS average scores were 3.7. The average score of mothers with babies being treated at the university hospital was 4.1, significantly higher than mothers at the public hospital. Subscale average scores were higher in the university hospital, and the difference between hospitals was significant in the sub-dimensions of respect and reputation, information sharing, and collaboration with the family (Table 4).

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Tablo 4. Comparison of Mothers' Newborn Family-Centred Care Scale (NFCCS) and Sub-Dimension Item Score Means (N:180)

NFCCS and Sub-Dimension Item	All Datas(N:180)	University Hospital (N:90)	Public Hospital (N:90)		
	X±SD	X±SD	X±SD	t	p
NFCCS	3,7±0,7	4,1 ±0,6	3,5 ±0,7	3,985	**<0,01**
Dignity And Respect	4,0±0,7	4,2 ±0,8	3,9 ±0,6	2,060	**<0,01**
Information Sharing	3,9±0,8	4,1 ±0,6	3,6 ±0,9	3,550	**<0,01**
Participation In Care	4,0±0,8	4,1 ±0,7	3,9 ±0,9	1,475	,142
Collaboration With Family	3,3±1,1	3,6 ±0,9	3,0 ±1,2	3,620	**<0,01**

t: Independent Samples t-Test

Table 5 compares the scores of state anxiety level, trait anxiety level, and family-centred care as a composite variable according to the baby's length of stay. The analysis shows that the family-centred care receipt scores increased, and state anxiety scores decreased significantly for mothers with babies staying longer in the NICU in both hospitals. The length of stay explains 55% of this significant difference in the university hospital and 51% in the public hospital. According to the length of stay, the trait anxiety level shows a significant difference among mothers in the university hospital, while there is no significant difference among mothers in the public hospital (Table 5).

Table 5. Comparison of STAI and NFCCS Item Score Averages According to Length of Hospitalization (N:180)

Scales	Newborn Stay Duration in NICU	University Hospital (N:90) X±SD	Public Hospital (N:90) X±SD	
State Anxiety	Day of 1-7[1]	49,7 ±7,4	48,5 ±7,5	
	Day of 8-14[2]	39,1 ±5,6	42,1 ±5,4	
	Day of > 15[3]	28,3 ±4,2	41,2 ±8,8	.
Trait Anxiety	Day of 1-7[1]	38,4 ±9,6	38,4 ±7,4	
	Day of 8-14[2]	41,9 ±5,6	39,5 ±7,9	
	Day of > 15[3]	46,9 ±6,4	40,6 ±3,7	
NFCCS	Day of 1-7[1]	3,3±0,5	2,8±0,3	
	Day of 8-14[2]	3,9±0,4	3,5±0,4	
	Day of > 15[3]	4,6±0,3	4,3±0,2	
Wilk's Lambda		F=35,629 p<0,01 Partial Eta Squared=0,559	F=30,204 p<0,01 Partial Eta Squared= 0,516	

	Bonferoni	
State Anxiety	1>2>3	1>3, 1>2
Trait Anxiety	3>2, 3>1	-
NFCCS	3>2>1	3>2>1

F: Test of MANOVA

Based on the correlation analysis between mothers' anxiety levels and whether they received family-centred care, according to the baby's descriptive characteristics, the increase in the duration of separation, the decrease in the baby's gestational week, and birth weight significantly increased the mothers' state anxiety levels. In contrast, levels decreased in mothers whose babies had more extended hospital stays and who saw their babies more frequently (p<0.05, Table 6).

Table 6. Relationship of Some Variables with STAI and NFCCS

Variables		University Hospital			Public Hospital		
		State Anxiety	Trait Anxiety	NFCCS	State Anxiety	Trait Anxiety	NFCCS
Time away from the baby	r	,636	,041	-,670	,601	,026	-,404
	p	,035	,701	,046	,041	,808	,050
Birth weight	r	-,595	,002	-,597	-,189	,021	-,440
	p	,050	,984	,017	,074	,843	<0,01
Newborn Stay Duration in NICU	r	-,834	,122	,858	-,373	,432	,771
	p	,015	,057	,012	<0,01	.096	<0.01
Gestational age	r	-,603	,025	-,414	-,519	,035	-,352
	p	,005	,816	,025	<0,01	,745	,038
Postnatal day	r	-,197	,247	,270	-,375	,098	,677
	p	,043	,188	,010	<0,01	,359	<0,01
Frequency of seeing her baby	r	*	*	*	-,234	,162	,380
	p	*	*	*	,027	,126	<0,01

*Since mothers stay in the same room with their babies at the university hospital, Pearson Correlation Analysis was not performed regarding the frequency of seeing their babies.

Analyses of NFCCS average scores based on descriptive characteristics revealed that the increase in the mother's separation duration from the baby was associated with a decrease in family-centred care scores, which increased significantly as the frequency of seeing her baby increased (Table 6).

The results of the correlation analysis examining the average scores of state-trait anxiety and family-centred care scores of mothers are presented in Table 7. As mothers' NFCCS scores increased, their SAS scores decreased significantly (p<0.05). A highly significant (r:0.77, p<0.05) relationship was found between the state anxiety scores of mothers in the university hospital and their family-centred care receipt scores, while a moderately significant (r:0.66, p<0.05)

relationship was found between the state anxiety scores and family-centred care receipt scores of mothers in the public hospital. When the relationship between trait anxiety mean scores and family-centred care scale mean scores was examined, there was a low-level significant (r:0.36, p<0.05) relationship for the mothers in the university hospital (p<0.05) but no significant relationship for mothers in the public hospital (p>0.05).

Table 7. Examining the Relationship Between Mothers' STAI and NFCCS Mean Scores

Veriables		All Datas (N:180)	Public Hospital (N:90)	University Hospital (N:90)
		NFCCS	NFCCS	NFCCS
State Anxiety	r	-,719	-,665	-,773
	p	**<0,01**	**<0,01**	**<0,01**
Trait Anxiety	r	-,378	-,392	-,365
	p	0,51	,097	**<0,01**

Pearson Correlation Analysis

The results of this study showed that mothers of infants treated in the NICU experience moderate levels of anxiety, and their anxiety levels decreased the more they received family-centred care. These findings are supported by other studies in the literature (5,7,14,16,44,45).

Previous research has reported that mothers of infants treated in the NICU exhibit high depressive symptoms and can experience mild, moderate, severe, and panic-level anxiety (12,46,47). Qualitative research indicates that mothers experience anxiety due to their newborns being admitted to the neonatal intensive care unit (37,48). The causes of anxiety were listed as premature birth, having a low birth weight baby, stressful labour, perinatal complications and environmental factors in the neonatal unit(9). The present study found that mothers' anxiety was affected by the time they were away from their baby, the baby's week of birth and birth weight, the baby's length of stay, the postnatal day, and the frequency of seeing their baby. The anxiety of mothers increased as the time they spent away from their babies increased, and the frequency of seeing their babies decreased. When mothers' anxiety levels were examined according to the newborns' length of stay, it was determined, similar to the literature, that anxiety levels were higher during hospitalisation and decreased towards discharge (12,49). In the present study, the change in anxiety levels according to the length of stay was more significant in the university hospital, where the mother and the baby were allowed to stay in the same room. Another study, similar to these results, found that as mothers spent more time in the neonatal unit environment, their anxiety decreased towards the baby's discharge (12). Separation of mothers from their babies and the resulting anxiety can negatively impact the mother-infant attachment (1,12). Studies have found that keeping the mother and baby together and encouraging active maternal participation in care can reduce maternal anxiety and promote mother-infant attachment (1,2). Therefore, it is emphasised that neonatal nurses should support keeping the mother and baby in the same room and actively involve the mother in the baby's care, plan interventions to increase mother-infant interaction and reduce maternal anxiety (1,9,48).

Family-centred care is the most crucial caregiving approach that positively affects mothers' anxiety levels and provides quality care services in neonatal units (19,20). This research determined that as mothers' family-centred care receipt scores increased, their state anxiety levels decreased significantly. It has been established in the literature that involving mothers in the care

of their babies in the NICU reduces their anxiety levels (5,7,14,44,45). Qualitative studies conducted with mothers whose babies were in the NICU found that as mothers' participation in care increased, their anxiety decreased, and they felt better (37,48). A systematic review and meta-analysis study examining randomised controlled trials have found that family-centred care practices implemented in neonatal units significantly reduced mothers' anxiety levels (28). This research indicates that the family-centred care approach is more extensively employed in the university hospital, where the mother and baby stay in the same room, compared to the public hospital. The practice of mothers and babies staying in the same room at the university hospital facilitates faster mother-infant interaction, allows the mother to touch her baby whenever she wants, enables her to be present during interventions with the baby, and allows for more effective implementation of family-centred care. In fact, some experimental studies have found that parents' touching of the newborn is associated with a decrease in anxiety levels, linked to an increase in oxytocin levels (50,51). It is known that oxytocin increases social sensitivity and reduces the response to stressors. A systematic review study has found that early contact between parents and infants in neonatal units increases oxytocin levels, supporting the reduction of anxiety in the interaction between parents and infants (52).

CONCLUSION

This study determined that mothers whose babies were treated in the NICU experienced moderate levels of anxiety. It was observed that mothers' anxiety levels decreased as their family-centred care receipt scores increased. In the university hospital, where continuous mother-infant presence is ensured, the level of receiving family-centred care was higher than in the public hospital. Mothers who actively participated in the care of their infants and stayed with them continuously had lower anxiety levels compared to those who did not.

LIMITATIONS OF THE RESEARCH

The university hospital where the research was conducted serves many patients with different socio-cultural characteristics due to being a reference hospital in the region. Cultural differences can affect individuals' perspectives on event's and their anxiety levels. However, the cultural characteristic of parents were not taken into consideration ın this research. Also the research was conducted in two hospitals in an eastern city, so the results obtained can be generalized to mothers whose babies were treated in these hospitals.

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