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The Effect of Scheduled Education Given to The Mothers of Infants Cared for in A Neonatal Intensive Care Unit on Their Anxiety Level

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Abstract

The study was conducted as single-group pretest-posttest quasi experimental design in Diyarbakır Children's Diseases Hospital Neonatal Intensive Care Maternal Service between March 2014 and May 2015. All mothers having lying babies in Diyarbakır Children's Hospital Neonatal Intensive Care Service has created the population of the investigation between the dates of collecting data. The sample size was determined by the sampling formula known as the universe minimal sample size 283. In the research, instead of random sampling, the mothers who agreed to participate in the study were included in the study. Data collection was achieved via a questionnaire querying the socio-demographic characteristics the mother and the baby and State and Trait Anxiety Inventory. Descriptive statistics, paired t-test, independent samples t-test, Wilcoxon, Kruskal-Wallis Variance, Mann-Whitney U Test, Analysis of Variance, Pearson Kolerasyon were used in the evaluation of data. As a result, it was determined that the planned education given to the mothers whose babies are lying in the neonatal intensive care service has an effect on the decrease of the anxiety level of the mothers.

Keywords: Anxiety level, infant diseased mother, neonatal intensive care, nursing support

INTRODUCTION

Postpartum mothers have a number of responsibilities towards their infants such as providing a safe and nurturing child care environment, communicating with their infants, getting adapted to their new roles, developing family sentiment, and coping with potential problems. Therefore, postpartum period is likely to result in a chaotic course of life for families, particularly for mothers (Marakoğlu at al., 2009; Yagmur and Ulukoca, 2010).

Prenatal period may also lead to various crises in the family due to a number of unexpected occurrences such as potential diseases, hospitalization, and preterm delivery. Parents, in the expectation of healthy infants, may experience a number of adverse emotions such as shock, grief, guiltiness, and shame (Ward, 2001; Boxwel, 2000). Moreover, if the infants require neonatal intensive care (NIC) in the postpartum period, their communication with their parents is disrupted and thus the adverse emotions of the parents may get even worse. Additionally, the parents may have to postpone seeing and touching their infants for a certain period of time (Celebioğlu, 2004). On the other hand, the parents cannot contribute to the child care activities of their infants in the NIC unit. At that period, they usually experience a number of adverse emotions, particularly anxiety (Griffin, 2006).

Disruption of mother-neonate communication may lead to an inopportune disconnection between the infant and the mother and anguish for the safety of the infant and also may preclude the development of a satisfactory mother-neonate relationship, obstructing the mother-infant attachment (Çalışır at al., 2008; Korja, 2009). Moreover, the emergence of stress-related conditions may further obstruct the attachment process and thus may increase the risk of depression and anxiety in mothers (Çalışır at al., 2008).

Infants requiring NIC are another source of anxiety for mothers. Visiting their infants in NIC unit can be exhausting, wearing, and costly for the parents. Therefore, the hospitalization period in NIC unit may not only obstruct the mother-infant attachment but also may negatively affect the psychological state of the mother and thus may result in depression (Aktaş, 2008).

Nurses witness the healthcare process of neonates and the depression experienced by the mothers. Therefore, nurses, compared to other healthcare personnel, play a key role in the prompt identification of problems experienced by postpartum mothers. Accordingly, nursed provide scheduled education for the mothers of the infants being cared for in NIC unit and it has been demonstrated that this education has yielded positive effects on anxiety and mother-neonate communication (Balkaya, 2002).

About 28% of women in Turkey experience their first delivery during adolescence. Moreover, the rate of delivery during adolescence is higher in rural areas compared to urban sites and this rate varies according to geographical regions: the rate in the western part of Turkey is 3%, as opposed to >6% in the Southeast Anatolian Region where this study was conducted (Birth Statistics, 2013). Indeed, in the Southeast Anatolian Region, the educational level of women and the rate of women's employment are lower than in other regions. The 2013 report by the Turkish Population and Health Research (TPHR) revealed the rate of infant mortality as 13.6/1.000 live births (Turkish Population and Health Research TPHR, 2013). This rate was similar to that of Diyarbakir Province, where this study

was conducted (Diyarbakir Manegership of Public Health, 2014).

The aim of this study was to investigate the effect of scheduled education given to the mothers of infants cared for in a neonatal intensive care unit on their anxiety level. This aim was formulated in the following hypothesis:

Hypothesis 1: The scheduled education given to the mothers of infants cared for in a neonatal intensive care unit reduces their anxiety level.

Methods
Study sample

The study was planned as a quasi-experimental study with a one-group pretest-posttest design. The study was conducted with the mothers of infants cared for in the Neonatal Intensive Care Unit at Diyarbakir Children's Hospital between March 2014 and May 2015. Sample size was determined as 283 depending on the finite population sampling formula. Inclusion criteria were as follows: being able to read and write and to perform verbal communication, having no experience in neonatal child care, and having an infant in the NIC unit for at least 48 h. No sampling method was used for the study and all the mothers meeting the inclusion criteria were included into the study.

The neonatal intensive care unit at Diyarbakir Children's Hospital is staffed by neonatal caregivers 24 hours a day. The unit consists of numerous departments where neonates stay with their mother, their clinical tests and therapies are performed, their physical condition, respiration and feeding are followed up, and mother-neonate interaction is established. The unit is staffed by 1 neonatal specialist, 2 pediatric specialists, 4 general practitioners, and 10 nurses.

Data collection was achieved via a Questionnaire established by the researcher, which questioned the sociodemographic characteristics of the mothers and the infants, and via the State-Trait Anxiety Inventory.

Measures tools
Questionnaire

The questionnaire was established by the researcher and consisted of 21 items querying the characteristic features of the mothers and infants, including age, gender, marital status, level of education, occupational status, registration in a social security scheme, department of hospitalization, and systemic diseases.

State-trait anxiety inventory

The inventory used in the study was developed by Spielberger et al. in 1970 and was adapted to Turkish and tested for reliability and validity by Öner and Le Compte in 1983. The inventory included two separate scales, Sate Scale and Trait Scale, each consisting of 20 items. The overall score for each scale ranges between 20 and 80. Higher scores indicate greater anxiety and lower scores indicate lower anxiety. The same correlation is used in the evaluation of the percentile ranking of the scores, suggesting that lower percentile ranking (e.g. 1, 5, 10) indicates lower anxiety level. Reported mean overall scores for both scales range between 36 and 41, and reported reliability coefficient ranges between 0.83 and 0.87 (Öner and Le Compte, 1998). In our study, Cronbach's alpha for the scales was found as 0.88 for the State Scale and as 0.74 for the Trait Scale, and the total score alpha was 0.89.

Data collection

Testing was performed with the mother placed beside her infant in the hospital room. Data were collected via 30-min interviews and question-answer sessions. This procedure was continued until the adequate sample size was reached. Posttest was performed by the re-administration of the State-Trait

Anxiety Inventory to the mothers for 10 min prior to infant's discharge.

For the pretest procedure, a written consent was obtained from the mothers meeting the inclusion criteria and both the questionnaire and the State-Trait Anxiety Inventory were administered within the first 24h of hospitalization. The mothers were given 30-min education twice a day until the day of hospital discharge.

For the posttest procedure, the State-Trait Anxiety Inventory was re-administered to the mothers for 10 min prior to the infant's discharge.

Scheduled Education

Prior to the study, the mothers were informed about the aim of the study and then the questionnaire and the State-Trait Anxiety Inventory were administered. Following the pretest procedure, scheduled education was given to the mothers, which was aimed to decrease their anxiety level, in their hospital room beside their infant. The education was performed with 20-min education sessions and 10-min practice sessions via interviews and question-answer method twice a day until the day of hospital discharge. The education consisted of following topics: holding the infant, breastfeeding, spoon-feeding, degassing the infant, diaper dermatitis care, sleep surveillance, infant safety, visitors at hospital room, keeping track of diagnostic tests and vaccinations, recording drug use, caring for ears, nose, eyes, and umbilicus, jaundice surveillance, and surveillance for urination and defecation. Prior to the education, in order to support the effectivity of the education, the mothers were delivered a booklet including the topics to be covered throughout the

education. Posttest was performed prior to the infant's discharge.

Data Analysis

The statistical program in computer was used to analyse the data obtained. Data were expressed as numbers, percentages, and mean ± standard deviation (SD). Both parametric and nonparametric tests were used, including *t*-test, Mann–Whitney–Wilcoxon test, Mann-Whitney U test, ANOVA, and Pearson Correlation test. A *p* value of <0.05 was considered significant.

Ethics

The study was approved by Diyarbakir Children's Hospital Management Board and Malatya Clinical Research Ethics Committee. Also, the mothers were informed about the aim, duration, and procedures of the study and a written consent was obtained from each of them prior to the study.

Results

Table 1 presents the comparison of the state and trait anxiety means of the mothers with regards to the descriptive features of their infants. The results revealed that 84.1% of the infants were term, 88.3% of them weighed 2,500-4,300 kg, 56.9% of them were male, and most of them were diagnosed with hyperbilirubinemia (39.9%). In the mothers of preterm infants, posttest state anxiety means were lower than pretest means and no significant difference was detected (p>0.05). Similarly, in the mothers of term infants, posttest state anxiety means were lower than pretest means and a significant difference was established (p<0.05). Trait anxiety means were higher in the mothers of preterm infants than in the mothers of term infants and no significant difference was observed (p>0.05).

Table 1. Comparison of state and trait anxiety means of the mothers with regards to the descriptive characteristics of their infants

Demographic Characteristics	n	%	State Anxiety			Trait Anxiety	
			Pretest $\overline{X} \pm SS$	Posttest $\overline{X} \pm SS$	Significance	Trait $\overline{X} \pm SS$	Significance
Gestational age (week) Preterm Term	45 238	15.9 84.1	41.84±5.33 42.07±4.76	40.91±2.95 40.40±2.37	t:1.15, p:0.25* t:5.03, p:0.01*	45.00±1.71 43.62±0.88	t:1.71** p:0.88
Birth weight (g) 2500-4300 1500-2499	250 33	88.3 11.7	42.14±4.75 41.21±5.48	40.47±2.39 40.60±3.05	t:5.17, p:0.01* t:0.63, p:052*	43.69±4.87 44.96±5.55	t:-1.39** p:0.16
Gender Female Male	122 161	43.1 56.9	42.04±4.19 42.03±5.29	40.51±2.43 40.46±2.51	t:3.37, p:0.01* t:3.76, p:0.01*	43.99±4.33 43.72±5.41	t:0.44** p:0.65
Diagnosis Pneumonia Hyperbilirubinemia Sepsis Others	48 113 84 38	17 39.9 29.7 13.5	41.58±4.03 41.41±4.86 43.21±5.10 41.86±4.88	40.60±2.75 40.15±2.38 40.85±2.29 40.50±2.69	t:1.77, p:0.08* t:2.46, p:0.01* t:3.98, p:0.01* t:1.62, p:0.11*	43.85±5.22 43.43±5.62 44.27±4.14 44.07±4.26	F:0.49 p:0.68
*Paired –Samples t-Test and **Independent –Samples t-Test							

In the mothers of infants weighing 2.500-4.300 kg, posttest state anxiety means were lower than pretest means and a significant difference was detected (p<0.05). In the mothers of infants weighing 1.500-2.499 kg, posttest state anxiety means were lower than pretest means and no significant difference was observed (p>0.05). Trait anxiety means were higher in the mothers of infants weighing 1.500-2.499 kg than in the mothers of infants weighing 2.500-4.300 kg but no significant difference was established (p>0.05).

Posttest state anxiety means were lower than pretest means in the mothers of both male and female infants and a significant difference was observed (p<0.05). Trait anxiety means were higher in the mothers of female infants than in the mothers of male infants but no significant difference was established (p>0.05).

Pre- and post-test state anxiety means and trait anxiety means were higher in the mothers of infants diagnosed with sepsis than in the mothers of infants diagnosed with other syndromes, posttest state anxiety means of all the mothers were lower than pretest means and a significant difference was detected (p<0.05). No significant difference was observed among the trait anxiety means of the mothers with regards to the syndromes diagnosed in infants (p>0.05). Table 2 presents the pre- and post-test state and trait means of the mothers with regards to their demographic characteristics.

Table 2. Pre- and post-test state and trait means of the mothers with regards to their demographic characteristics

Demographic Characteristics	n	%	State Anxiety			Trait Anxiety	
			Pretest $\overline{X} \pm SS$	Posttest $\overline{X} \pm SS$	Significance	Trait $\overline{X} \pm SS$	Significance
Age (years)							
Adolescent (16-24)	118	41.7	42.73±4.76	40.88±2.44	t:4.03, p:0.01*	43.93±4.16	F:0.55
Young Adult (25-35)	135	47.7	41.95±4.76	40.25±2.36	t:3.58, p:0.01*	43.96±5.59	p:0.57
Adult (36-52)	30	10.6	39.66±4.76	39.93±2.89	t:-0.36,p:0.72*	42.93±4.99	
Number of children							
1-3	211	74.6	42.33±4.76	40.17±2.38	t:4.54, p:0.01*	43.66±4.50	KW$_x$²:0.338
4-6	64	22.6	41.48±6.05	39.73±2.58	t:2.37, p:0.02*	44.46±6.30	p:0.84
7-10	8	2.8	38.62±4.86	38.62±2.13	t:0.01, p:1.00**	43.50±4.84	
Social Security							
Yes	220	77.7	42.08±4.83	40.38±2.41	t:4.85, p:0.01*	43.70±4.94	t:-0.86***
No	63	22.3	41.87±4.93	40.85±2.65	t:1.61, p:0.11*	44.31±5.07	p:0.38
Level of Education							
Read - Write	125	44.2	42.46±5.15	40.32±2.66	t:4.70, p:0.01*	44.00±4.96	
Primary School	111	39.2	41.86±4.59	40.68±2.33	t:2.40, p:0.01*	44.04±5.35	KW$_x$²:1.141
High School	36	12.7	41.22±4.74	40.61±2.19	t:0.69, p:0.49*	42.88±4.00	p:0.76
B.A. or higher	11	3.9	41.63±4.08	39.90±2.62	t:-1.33, p:0.18 **	43.09±3.85	
Status of Employment							
Working	272	96.1	42.09±4.85	40.44±2.48	t:5.27, p:0.01*	43.94±4.93	MWU:961.000
Unemployed	11	3.9	40.72±4.62	41.45±1.96	t:-0.40,p:0.68**	41.36±5.29	p:0.04
Husband's Level of Education	76	26.8	42.84±5.26	40.36±2.44	t:4.03, p:0.01*	43.90±4.65	
Read - Write	126	44.5	42.16±4.48	40.58±2.54	t:3.80, p:0.01*	44.05±4.84	KW$_x$²:2.343
Primary School	59	20.8	41.08±5.34	40.25±2.25	t:1.06, p:0.29**	42.77±3.70	p:0.50
High School	22	7.8	41.09±3.43	40.95±2.78	t:-0.10, p:0.91**	45.22±8.41	
B.A. or higher							
Husband's Occupation							
Civil Servant	16	5.7	41.81±4.03	40.18±1.75	t:-1.51,p:0.13*	45.25±8.98	
Worker	87	30.7	41.28±5.13	40.83±2.98	t:2.54, p:0.01*	44.26±5.26	KW$_x$²:1.547
Self-employed	145	51.2	41.75±4.88	40.40±2.26	t:3.10, p:0.01*	43.44±4.38	p:0.81
Unemployed	27	9.5	41.51±4.77	40.03±2.26	t:-2.18, p:0.02**	43.40±3.78	
Retired	8	2.8	43.25±2.65	40.25±2.05	t:-1.75, p:0.07**	45.00±4.40	
Family Size							
Nuclear	196	69.3	41.73±4.99	40.29±2.44	t:3.98, p:0.01*	43.66±4.82	t:-0.87***
Extended	87	30.7	42.72±4.45	40.93±2.49	t:3.10, p:0.01*	44.23±5.29	p:0.38
Residential Area							
Urban	161	56.9	41.43±4.62	40.52±2.50	t:2.32, p:0.02*	43.61±4.91	F:0.92
Town	67	23.7	42.02±4.09	40.47±2.33	t:2.80, p:0.01*	43.71±4.50	p:0.39
Rural	55	19.4	43.81±5.86	40.58±2.60	t:4.20, p:0.01*	44.65±5.64	
Level of Income							
High	28	9.9	41.07±4.59	40.75±2.27	t:-0.44, p:0.65**	44.50±4.97	KW$_x$²:0.214
Middle	224	79.2	42.11±4.86	40.53±2.50	t:4.52, p:0.01*	43.81±5.06	p:0.89
Low	31	11	42.35±4.97	39.93±2.47	t:2.77, p:0.01*	43.45±4.30	
Status of Smoking							
Yes	44	15.4	41.54±4.76	40.13±2.21	t:1.99, p:0.05*	42.18±4.08	t:-2.43***
No	239	84.6	42.12±4.86	40.55±2.51	t:4.64, p:0.01*	44.14±5.06	p:0.01

*Paired –Samples t-Test and **Independent –Samples t-Test

The analysis of the demographic profiles of the mothers revealed that 47.7% of them were aged between 25-35 years and 10.6% of them were aged between 36-52 years, 74.6% of them had 1-3 children, 77.7% of them had social security cover, 44.2% of them could read and write, 96.1% of them were unemployed, 44.5% of the husbands were primary school graduates, 51.2% of

the husbands were self-employed, 69.3% of the mothers had a nuclear family, 56.9% of them were living in urban areas, 79.2% of them were middle income earners, and 84.6% of them were non-smokers (Table 2).

In the mothers aged in the 16-24 age group, having 1-3 children, primary school graduates, living in rural areas, and low income earners, pre- and post-test state anxiety means were higher than in the mothers in other age groups, posttest state anxiety means were lower than pretest means and a significant difference was observed (p<0.05). In the mothers aged in the 25-35 age group, having 1-3 children, able to read and write, living in rural areas, and high income earners, trait anxiety means were higher than in other mothers but no significant difference was observed (p>0.05).

Pretest state anxiety means were higher in the mothers with social security cover than in mothers without social security cover, posttest state anxiety means were lower than pretest means and a significant difference was established (p<0.05). Trait anxiety means were higher in the mothers with social security cover than in mothers without social security cover but no significant difference was observed (p>0.05).

Posttest state anxiety means in unemployed mothers were lower than pretest means and a significant difference was detected (p<0.05). However, posttest state anxiety means in working mothers were higher than pretest means but no significant difference was observed (p>0.05). Trait anxiety means were higher in unemployed mothers than in working mothers and a significant difference was found (p<0.05).

In the mothers with a husband able to read and write and the mothers with a husband working as a civil servant, pretest state anxiety means were higher than in other mothers, posttest state anxiety means were lower than pretest means and a significant difference was observed (p<0.05), and trait anxiety means were higher than in other mothers and a significant difference was detected (p<0.05).

In mothers with an extended family, state anxiety means were higher than in mothers with a nuclear family, posttest state anxiety means were lower than pretest means and a significant difference was observed (p<0.05), and trait anxiety means were higher than in mothers with a nuclear family but no significant difference was found (p>0.05).

In non-smoking mothers, state anxiety means were higher than in smoking mothers, posttest state anxiety means were lower than pretest means and a significant difference was observed (p<0.05). Similarly, trait anxiety means were higher in non-smoking mothers than in smoking mothers and a significant difference was established (p<0.05) (Table 2).

Table 3. Comparative distribution of pre- and post-test state and trait anxiety means and the correlation between the trait anxiety means and pretest state anxiety means of the mothers

Test	N	$\overline{X} \pm SS$	Significance
Pretest	283	42.03±4.84	t:5.05
Posttest	283	40.48±2.47	**p:0.01**
		Trait	
		R	**P**
Pretest State Anxiety		0.169	0.004
Pearson Correlation Test			

Table 3 presents the comparative distribution of pre- and post-test state and trait anxiety means and the correlation between the trait anxiety means and pretest state anxiety means of the mothers.

Overall posttest state and trait anxiety means were lower than pretest state and trait anxiety means and a significant difference was detected (p<0.05). Also, pretest state anxiety means established a positive correlation with trait anxiety means, indicating that an increase in trait anxiety means increases the state anxiety means (Table 3).

DISCUSSION

Previous studies have shown that the mothers of the infants cared for in NIC unit demonstrate the need for counseling, psychological support, and personal requirements, and they also feel anxious about various matters, particularly the challenges of child care (Uludağ and Ünlüoğlu, 2012; Altun, 1993). These needs and challenges can be overcome by providing scheduled education and counseling for the parents, which could aid the parents to adapt to a new life with their newly born infants (Er, 2006).

In the mothers aged in the 16-24 age group, having 1-3 children, primary school graduates, living in rural areas, and low income earners, pre- and post-test state anxiety means were higher than in the mothers in other age groups,

posttest state anxiety means were lower than pretest state anxiety means and a significant difference was observed (p<0.05). In the mothers aged in the 25-35 age group, having 1-3 children, able to read and write, living in rural areas, and high income earners, Trait anxiety means were higher than in other mothers but no significant difference was observed (p>0.05).

Kabasakal reported that the primipara mothers have greater challenges at preterm NIC unit since they have no previous experience (Kabasakal, 2012). Özyazıcıoğlu reported that the mothers with 1-3 children have higher anxiety means compared to mothers with 4 or more children (Özyazıcıoğlu and Tüfekci, 2009).

Uludağ and Ünlüoğlu found that the level of income has no effect on anxiety levels and presence of depression but the incidence of preterm infants was higher in families with low income (Uludağ and Ünlüoğlu, 2012). In our study, we found similar results.

The results revealed that the mothers in the study experienced their first delivery in young ages, they were primary school graduates, living in rural areas and low income earners, and they had high levels of anxiety regarding neonatal care but their anxiety levels were lowered following the scheduled education. Accordingly, it was revealed that the mothers of the infants being cared for in NIC unit are likely to exhibit

high levels of anxiety but these levels can be lowered by scheduled education. Pretest state anxiety means were higher in the mothers with social security cover than in mothers without social security cover, posttest state anxiety means were lower than pretest means and a significant difference was established (p<0.05). Trait anxiety means were higher in the mothers with social security cover than in mothers without social security cover but no significant difference was observed (p>0.05) (Table 2). The investigated depression in postpartum parents and reported that unemployed fathers, in particular, had higher levels in postpartum depression (Aylaz at al., 2014). In our study, we found similar results and we also considered that inclusion of a new member to the family is a factor for increased socioeconomic anxiety.

Posttest state anxiety means in unemployed mothers were lower than pretest means and a significant difference was detected (p<0.05). However, posttest state anxiety means in working mothers were higher than pretest means but no significant difference was observed (p>0.05). Trait anxiety means were higher in unemployed mothers than in working mothers and a significant difference was found (p<0.05) (Table 2). Lower socioeconomic status is associated with the anxiety levels of the mothers. Özçelik investigated the level of knowledge about child care with regards to the employment status of the mothers and reported the levels of knowledge in housewives and working mothers as 31.49± 9.76 and 47.56±13.07, respectively (Özçelik, 2006). Similarly, we also found that working women are more knowledgeable about neonatal child care compared to unemployed mothers. In the mothers with a husband able to read and write and the mothers with a husband working as a civil servant, pretest state anxiety means were higher than in other mothers, posttest state anxiety means were lower than pretest means and a significant difference was observed (p<0.05), and trait anxiety means were higher than in other mothers and a significant difference was detected (p<0.05) (Table 2). Pridham found that the working parents with high income have greater challenges in performing their parental duties (Pridham at al., 1991). However, this finding contradicts the results of our study. We consider that this contradiction can be concerned with cultural differences between the study populations of the studies.

In mothers with an extended family, state anxiety means were higher than in mothers with a nuclear family, posttest state anxiety means were lower than pretest means and a significant difference was observed (p<0.05), and trait anxiety means were higher than in mothers with a nuclear family but no significant difference was found (p>0.05) (Table 2). Okanlı et al. reported that the increase in the number of family members leads to an increase in the anxiety about neonatal care (Okanlı et al., 2003). Conversely, Mermer et al. reported that the anxiety levels were higher in the mothers with a nuclear family (Mermer et al., 2010). In our study, we found that the anxiety levels of the mothers increased with the number of children in the family, considering that an increase in the number of family members leads to a reduction in financial resources of the family and an increase in the duties and anxiety levels of other family members.

In non-smoking mothers, state anxiety means were higher than in smoking mothers, posttest state anxiety means were lower than pretest means and a significant difference was

observed (p<0.05). Similarly, trait anxiety means were higher in non-smoking mothers than in smoking mothers and a significant difference was established (p<0.05) (Table 2). Peköz found that non-smoking mothers exhibit higher anxiety levels than smoking mothers (Peköz, 2009). Dindar and Durukan research supports the religious and the result was found (Dindar, 2004; Durukan at al., 2008). In our study, we found similar results.

The pretest state anxiety means established a positive correlation with trait anxiety means, indicating that an increase in trait anxiety means increases the state anxiety means (Table 3). Ceber et al. reported that the mothers who were uneducated about and having difficulty in child care exhibited higher depression levels compared to the mothers who had received education about child care and stated that they had no difficulty in providing child care (Ceber et al., 2002). Studies show that the scheduled education and counseling provided by nurses reduces the anxiety levels of the parents of the infants being cared for in NIC unit (Çelebioğlu and Polat, 2008; Yıldız and Akbayrak, 2014). Similarly, we also found that scheduled education is highly effective and it lowers the anxiety levels of the mothers of the infants being cared for in NIC unit.

The results revealed that posttest anxiety levels were lowered through the scheduled education given to the mothers of the infants being cared for in NIC unit. Therefore, this finding confirms the hypothesis of this study.

Limitations of the Study

The limitation of this study is that the study was conducted in a single center and thus it can only be generalized for population of the study.

CONCLUSION AND SUGGESTIONS

The results revealed that most of the mothers were unemployed, had a nuclear family, resided in urban sites, were middle income earners, were non-smokers, had no chronic diseases, and that their anxiety levels were decreased through the scheduled education about neonatal intensive care. In addition, the results revealed that the mothers of the infants being cared for in neonatal intensive care unit have high anxiety levels, particularly primipara mothers. Therefore, the nurses working in neonatal units should allocate time to these mothers and infants and also should provide the mothers with counseling, informative, and supportive education.

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