

DOI: 0.38136/jgon.1055476

Perceived Stress, Breastfeeding Motivation and Breastfeeding Success among Mothers with Newborn Infants' Hospitalization in the Neonatal Unit

Bebeği Yenidoğan Ünitesinde Yatan Annelerin Algıladıkları Stres, Emzirme Motivasyonu ve Emzirme Başarısı

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ÖZ

Amaç: Bu araştırma bebeği yenidoğan ünitesinde yatan annelerin algıladıkları stres, emzirme motivasyonu ve emzirme başarısını belirlemek ve aralarındaki ilişkiyi saptamak amacıyla yapıldı.**Gereç ve Yöntem:** Bu kesitsel çalışmanın örneklemini 128 term yenidoğanın annesi oluşturdu. Gerekli izinler alındıktan sonra veriler tanıtıcı özellikler veri formu, algılanan stres ölçeği, emzirme motivasyonu ve LATCH emzirme tanılama ölçeği kullanılarak toplandı. Verilerin değerlendirilmesinde tanımlayıcı istatistiksel analizler, Mann-Whitney U testi, Kruskal-Wallis, Dunn-Bonferroni, Spearman korelasyon analizleri kullanıldı. $P < 0.05$ istatistiksel olarak anlamlı kabul edildi.**Bulgular:** Bu çalışmada bebeği yenidoğan ünitesinde yatan primipar annelerden ileri yaşta, ilköğretim ve lise mezunu olan, çalışmayan, doğum öncesinde emzirme eğitimi almayan ve bebeğini doğumdan hemen sonra emzirmeye başlayanların algıladıkları stresin daha yüksek olduğu belirlendi. Araştırmada genç annelerin, üniversite mezunu, çalışan, gebeliği planlı olan ve doğum öncesi emzirme eğitimi alan primipar annelerin emzirme motivasyonu daha yüksekti. Çalışma sonuçları lise ve üniversite mezunu, gebeliği planlı olan, doğumdan önce emzirme eğitimi alan annelerin LATCH ölçeği puanlarının daha yüksek olduğunu gösterdi ($p < 0.05$). Bu çalışmada algılanan stres azaldıkça, emzirme motivasyonu ve emzirme başarısının arttığı belirlendi. Emzirme motivasyonu ile emzirme başarısı arasında ilişki bulundu ($p < 0.05$).**Sonuç:** Bebeği yenidoğan ünitesinde yatan annelerin stres düzeylerinin azaltılması ve emzirme motivasyonlarını artırmaya yönelik yenidoğan hemşirelerince eğitim ve müdahale çalışmalarının planlanması ve uygulanması önerilmektedir.**Anahtar Kelimeler:** Yenidoğan, anne, emzirme, stres, motivasyon.

ABSTRACT

Aim: This research aimed to determine perceived stress, breastfeeding motivation, and breastfeeding success and to reveal the relationship between them, among mothers with newborn infants' hospitalization in the neonatal unit.**Materials and Methods:** This cross-sectional study sampling consisted of 128 term newborn's mothers. After obtaining the necessary permissions data were collected via introductory characteristics form, perceived stress scale, breastfeeding motivation scale, and LATCH breastfeeding assessment scale. Descriptive statistical analyses, Mann-Whitney U test, Kruskal-Wallis, Dunn-Bonferroni, and Spearman correlation analysis were used for data analysis. $P < 0.05$ was considered statistically significant in all analyses.**Results:** In this sample, the perceived stress was higher among primiparous mothers with newborn infant in the neonatal unit, who were older age, primary and high school graduates, nonworking, who did not receive prenatal breastfeeding training, and started breastfeeding immediately after birth. Breastfeeding motivation was higher among young mothers, university graduates, working, mothers with a planned pregnancy, and who received prenatal breastfeeding training. The results also showed that mothers who graduated from high school and university, whose pregnancy was planned, and who received prenatal breastfeeding training had higher LATCH scale scores. As perceived stress decreased, breastfeeding motivation and breastfeeding success increased, in this study ($p < 0.05$). A correlation was found between breastfeeding motivation and breastfeeding success ($p < 0.05$).**Conclusion:** It is recommended that neonatal nurses plan and implement training and intervention studies to reduce the stress levels of mothers whose newborn infants are hospitalized in the neonatal unit and to increase their breastfeeding motivation.**Keywords:** Neonates, mother, breastfeeding, stress, motivation.

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Başvuru tarihi : 09/01/2022

Kabul tarihi : 01/08/2022

INTRODUCTION

Human milk is the main source of nutrition for the newborn. Successfully initiating and maintaining breastfeeding and supporting breastfeeding mothers is one of the most important health goals in terms of immunological, physiological, psychological, and developmental benefits for the newborn (1,2). An estimated 823,000 child deaths can be prevented each year by increasing breastfeeding rates (2). The first hours after birth are critical for initiating and maintaining breastfeeding. Even if there is no life-threatening situation in this process, the fact that newborn hospitalization in the neonatal unit negatively affects the mother-infant interaction as well as the breastfeeding process (3).

One of the main causes of stress and anxiety for parents whose newborn infants are admitted to the neonatal unit is that they are unable to embrace the healthy infant they dreamed of after the emotional rollercoaster of pregnancy and birth (4). In addition, the chaotic environment of the neonatal unit with the sound, light, and medical devices, the restriction of the caregiver role of the parents, especially the mother, the nurses assuming the major responsibility in the care of the newborn infant, the uncertainties about the newborn's health can be counted as other stressors affecting parents with newborn infants in the neonatal unit (5,6). In a previous study, it was reported that hospitalization in the neonatal unit reduces exclusive breastfeeding rates (7). Although there are many factors that affect the continuity and success of breastfeeding of mothers whose newborn infants are hospitalized in the neonatal unit, the mother's willingness to breastfeed, a feeling of competence, and self-confidence about breastfeeding are factors that positively affect breastfeeding success (8,9).

Breastfeeding motivation is among the factors reported to be effective in initiating and maintaining breastfeeding. According to the Self-Determination Theory, motivation types that affect the continuation of breastfeeding are autonomous and controlled motivation (10,11). According to this theory, individuals are autonomously motivated if they perform a behavior because they have the freedom to do so, feel competent, and receive support from significant others. On the other hand, they are motivated in a controlled manner if they perform a behavior for monetary rewards or not to feel guilty, to get approval, or to be appreciated (12). Mothers in a supportive environment with a high level of autonomous motivation are more likely to continue breastfeeding, while mothers with a high level of control-

led motivation are less likely to continue breastfeeding (13). In addition, while a mother with low motivation cannot cope with breastfeeding problems, a mother with high motivation makes the necessary effort to cope with the difficulties during breastfeeding and continues breastfeeding (14). Nurses have a key role in initiating, maintaining breastfeeding, and in controlling the factors affecting breastfeeding (10,14). Although there are studies in the literature investigating the stress levels of mothers whose newborn infants are hospitalized in the neonatal unit, there is no study that examines the relationship between perceived stress, breastfeeding motivation, and breastfeeding success in mothers who experience breastfeeding for the first time. In this regard, this study aimed to determine perceived stress, breastfeeding motivation, and breastfeeding success and to reveal the relationship between them, among mothers with newborn infants' hospitalization in the neonatal unit.

MATERIALS AND METHODS

Design and Participating

This research was designed as a cross-sectional study between November 2019 and April 2020 in the Neonatal Unit of a University hospital. The study population consisted of the mothers of term newborn infants who were hospitalized in this Neonatal Unit and had no sucking and swallowing problems. In this regard, primiparous mothers who had no neurological problems were breastfeeding, spoke Turkish, and agreed to participate in the study were included in the study. The sample of the study consisted of 128 primiparous mothers who met the inclusion criteria.

Data Collection

Institutional and Ethics Committee approval was obtained for the study (Decision no: 2017-KAEK-189_2019.11.13_07). The purpose of the study was explained and written consent was obtained from all participants. Face-to-face interviews were conducted with mothers who met the inclusion criteria in an area free of noise and interruptions before breastfeeding time. A questionnaire was applied and lasted for an average of 20 minutes. Afterward, mothers were observed while breastfeeding their infants and the LATCH breastfeeding assessment scale was filled. Data collection tools are explained in further detail below.

Introductory Characteristics Form: The form consisted of questions about the introductory characteristics of the mothers such as age, working status, income status, receiving prenatal bre-

astfeeding education, etc.

Perceived Stress Scale (PSS): PSS was developed by Cohen et al., and later adapted into Turkish by Eskin et al (2013). PSS is a 5-point Likert-type scale and consists of 14 items. Each item on the scale is scored between 0-4 and PSS scores range from 0 to 56. Seven items are scored in reverse. The scale has two sub-dimensions: perceived insufficient self-efficacy (PIS) and perceived stress/distress (PSD). A high score indicates an excess of one's perception of stress (15). In the present research, Cronbach's alpha value of the scale was found to be 0.888.

Breastfeeding Motivation Scale (BMS): BMS was developed by Kestler-Peleg et al (2015), based on Self-Determination Theory. BMS was adapted into Turkish by Mızrak (2017). BMS for primiparous mothers consists of 5 sub-dimensions. BMS is a 4-point Likert type scale and each item is scored between 1-and 4. The factors of the BMS scale are integrative regulation (BMS-IR), intrinsic motivation and identified regulation (BMS-IMR), introjected regulation-social approval (BMS-ISA), introjected regulation-social pressure (BMS-ISP), and external regulation-instrumental needs (BMS-EIN). The scores of the sub-dimensions are calculated by taking the average of the sub-dimension scores of the scale. Higher scores obtained from each sub-dimension indicate higher motivation representing that sub-dimension (11,16). In the present research, the Cronbach's alpha value of the sub-dimensions was found to be between 0.712 and 0.932.

LATCH Breastfeeding Assessment Tool : LATCH was developed by Jensen et al., to evaluate breastfeeding success and the Turkish validity and reliability study of the scale were carried out by Yenil and Okumuş (2003). LATCH evaluates five basic criteria, and each criterion in the scale is given 0, 1, or 2 points. LATCH scores range between 0 and 10. Breastfeeding success is evaluated over the total score. A low score indicates that the mother needs help with breastfeeding. LATCH is scored while observing breastfeeding (8). The Cronbach's alpha value of the scale was found to be 0.780 in this study.

Data Analysis

IBM SPSS Statistics Standard Concurrent User V 26 (IBM Corp., Armonk, New York, USA) statistical package program was used to analyze the data. Variables were presented using number (n), percentage (%), mean±standard deviation (m±sd), Median (M), first quartile (Q1) and third quartile (Q3) . Shapiro Wilk test and Q - Q graphs were used to check whether the data were normally distributed. Mann-Whitney U test was

to compare binary variables. Kruskal-Wallis test was used to compare variables with more than two categories, and multiple comparisons were evaluated with the Dunn-Bonferroni test. Spearman correlation analysis was used to examine the relationship between numerical variables. P < 0.05 was considered statistically significant in all analyses.

RESULTS

In table 1, 51.6% of the primiparous mothers participating in the study were in the 26-33 age group, and 41.4% were primary school graduates. In all, 63.3% of the mothers were not working and 71.9% had income equal to their expenses. In this study group, 56.2% of the mothers had planned pregnancies and 54.7% had a normal vaginal delivery. In all, 70.3% of the mothers received prenatal breastfeeding training and the majority of the mothers received the training from nurses. In this sample, 53.9% of the newborns were female and 42.2% were breastfed within the first half-hour after birth (Table 1).

The mean perceived stress scale total score (PSS-total), perceived insufficient self-efficacy (PSS-PIS), and perceived stress/distress (PSS-PSD) sub-dimension scores were found to be 32.51±10.31, 14.68±5.34, and 17.83±5.99, respectively. For the breastfeeding motivation scale (BMS), integrative regulation (BMS-IR), intrinsic motivation and identified regulation (BMS-IMR), introjected regulation-social approval (BMS-ISA), introjected regulation-social pressure (BMS-ISP), and external regulation-instrumental needs (BMS-EIN) sub-dimension mean scores were 40.20±4.69, 21.71±2.89, 6.55±1.52, 3.43±1.72, and 6.13±2.02, respectively. The mean LATCH score was found to be 7.39±2.11 (Table 1).

Table 1. Introductory characteristics of primiparous mothers (n=128)

Features	n/(%)
Age	
18-25	37(28.9)
26-33	66(51.6)
34-41	25(19.5)
Educational status	
Primary education	53 (41.4)
High school	49 (38.3)
University	26 (20.3)
Working status	
Employed	47 (36.7)
Unemployed	81 (63.3)
Income according to expense	
Income less than the expense	21 (16.4)
Income equals expense	92 (71.9)
Income more than the expense	15 (11.7)
Whether pregnancy is planned or not	
Planned	72 (56.2)
Not planned	56 (43.8)
Type of delivery	
Normal birth	70 (54.7)
Cesarian section	58 (45.3)
Prenatal breastfeeding training	
Received	90 (70.3)
Not received	38 (29.7)
Breastfeeding trainee (n=90)	
Nurse	84 (93.3)
Physician	1 (1.1)
Other	5 (5.6)
Newborn gender	
Female	69 (53.9)
Male	59 (46.1)
Newborn's first breastfeeding time	
Immediately after birth	20 (15.6)
Within 30 minutes	54 (42.2)
Within 30-60 minutes	46 (35.9)
After the first 24 hours	8 (6.3)
Perceived stress scale	m±sd
Total score	32.51±10.31
Perceived insufficient self-efficacy (PSS-PIS)	14.68±5.34
Perceived stress/discomfort (PSS-PSD)	17.83±5.99
Breastfeeding motivation scale	
Integrative regulation (BMS-IR)	40.20±4.69
Intrinsic motivation and identified regulation (BMS-IMR)	21.71±2.89
Introjected regulation-social approval (BMS-ISA)	6.55±1.52
Introjected regulation-social pressure (BMS-ISP)	3.43±1.72
External regulation-instrumental needs (BMS-EIN)	6.13±2.02
LATCH scale	7.39±2.11

Tables 2 and 3 provide a comparison of PSS, BMS, and LATCH scale scores according to introductory characteristics of mothers. Perceived stress scale scores of primiparous mothers in the 26-33 and 34-41 age groups had higher compared to those in the 18-25 age group. University graduates had significantly lower PSS-total and PSS-PIS scores compared to primary and high school graduates ($p < 0.05$). Primary and high school graduates had similar PSS-total and PSS-PIS scores. University graduates had lower PSS-PSD scores compared to primary school graduates. PSS-total, PSS-PIS, and PSS-PSD scores of non-working mothers were significantly higher compared to working mothers ($p < 0.05$). No difference was found between the PSS scores in terms of a planned pregnancy, income status, type of delivery, and gender of the newborn ($p > 0.05$). The PSS total and sub-dimension scores of the mothers who did not receive prenatal breastfeeding training were higher compared to mothers who received the training ($p < 0.05$). The PSS-total and PSS-PSD scores of mothers who started breastfeeding immediately after birth were higher ($p < 0.05$) (Tables 2 and 3).

Table 2. Distribution of PSS, BMS, and LATCH scale scores according to introductory characteristics of primiparous mothers

Features	Perceived Stress Scale			Breastfeeding Motivation Scale					LATCH Scale
	M(Q1-Q3)			M(Q1-Q3)					M(Q1-Q3)
	PSS-Total	PSS-PIS	PSS-PSD	BMS-IR	BMS-IMR	BMS-ISA	BMS-ISP	BMS-EIN	
Age									
18-25	24.00 ^a (21.50-33.00)	11.00 ^a (7.00-15.00)	15.00 ^a (11.00-18.50)	44.00 ^a (42.50-44.00)	24.00 ^a (23.00-24.00)	8.00 ^a (7.00-8.00)	2.00 (2.00-4.00)	8.00 ^a (6.00-8.00)	8.00 (7.00-9.00)
26-33	38.50 ^b (24.50-41.00)	17.00 ^b (11.50-18.75)	20.00 ^b (13.50-23.00)	39.00 ^b (36.00-44.00)	21.50 ^b (19.00-24.00)	6.00 ^b (6.00-8.00)	3.00 (2.00-5.00)	6.00 ^b (4.00-8.00)	7.00 (6.00-9.00)
34-41	39.00 ^b (24.00-42.00)	16.00 ^b (11.00-19.00)	20.00 ^b ^b (13.00-25.00)	40.00 ^b (37.00-44.00)	21.00 ^b (20.00-24.00)	6.00 ^b (6.00-8.00)	3.00 (2.00-5.00)	6.00 ^b (5.00-8.00)	7.00 (5.00-9.00)
KW/p	10.606 p= 0.005	10.773 p= 0.005	10.474 p= 0.005	16.396 p<0.001	14.621 p=0.001	13.207 p=0.001	5.386 p=0.068	13.196 p= 0.001	1.601 p=0.449
Educational status									
Primary education	40.00 ^a (28.50-43.00)	16.00 ^a (12.50-20.50)	20.00 ^a (15.00-25.00)	39.00 ^a (35.00-44.00)	21.00 (19.00-24.00)	6.00 ^a (5.00-8.00)	3.00 (2.00-5.00)	6.00 (3.00-8.00)	7.00 ^a (5.00-8.50)
High school	37.00 ^a (22.00-40.00)	17.00 ^a (11.00-18.00)	18.00 ^{ab} (11.00-21.50)	42.00 ^{ab} (39.00-44.00)	24.00 (21.00-24.00)	7.00 ^{ab} (6.00-8.00)	2.00 (2.00-5.00)	7.00 (5.00-8.00)	8.00 ^b (7.00-9.00)
University	22.00 ^b (18.75-33.75)	11.00 ^b (7.00-14.25)	13.00 ^b (11.00-20.00)	44.00 ^b (39.00-44.00)	24.00 (21.50-24.00)	8.00 ^b (6.00-8.00)	2.00 (2.00-4.00)	8.00 (6.00-8.00)	9.00 ^b (7.00-10.00)
KW/p	18.128 p<0.001	14.411 p=0.001	13.886 p=0.001	8.524 p=0.014	5.544 p=0.063	7.682 p=0.021	4.511 p=0.105	5.199 p=0.074	20.136 p<0.001
Working status									
Employed	26.00 (20.00-39.00)	11.00 (7.00-18.00)	15.00 (11.00-20.00)	44.00 (40.00-44.00)	24.00 (21.00-24.00)	7.00 (6.00-8.00)	2.00 (2.00-4.00)	8.00 (6.00-8.00)	8.00 (7.00-9.00)
Unemployed	38.00 (28.00-42.00)	16.00 (11.50-18.50)	20.00 (15.00-24.00)	40.00 (36.00-44.00)	22.00 (20.00-24.00)	6.00 (6.00-8.00)	3.00 (2.00-5.00)	6.00 (4.00-8.00)	7.00 (5.00-9.00)
U/p	3.250 p=0.001	2.588 p=0.010	3.035 p=0.002	2.944 p=0.003	1.808 p=0.071	1.396 p=0.163	1.872 p=0.061	2.229 p=0.026	1.665 p=0.096
Whether pregnancy is planned or not									
Planned	35.50 (22.00-40.00)	15.00 (10.25-18.75)	18.00 (11.00-22.00)	42.00 (39.00-44.00)	24.00 (21.00-24.00)	7.00 (6.00-8.00)	2.00 (2.00-4.00)	7.00 (6.00-8.00)	8.00 (7.00-9.00)
Not planned	38.00 (24.00-42.00)	15.00 (11.00-18.00)	19.00 (13.50-24.75)	40.50 (35.25-44.00)	21.00 (19.00-24.00)	6.00 (5.00-8.00)	3.50 (2.00-5.00)	6.00 (3.25-8.00)	7.00 (5.00-9.00)
U/p	1.602 p=0.109	0.370 p=0.711	1.694 p=0.090	2.138 p=0.033	2.152 p=0.031	2.034 p=0.042	2.282 p=0.023	1.705 p=0.088	2.226 p=0.026
Income according to expense									
Less	37.00 (22.00-42.50)	15.00 (8.00-19.50)	18.00 (14.00-24.00)	44.00 (38.00-44.00)	24.00 (21.00-24.00)	7.00 (6.00-8.00)	4.00 (2.00-5.50)	8.00 (5.00-8.00)	8.00 (5.50-9.00)

Equal	38.00 (22.00-41.00)	15.00 (11.00-18.00)	19.00 (12.00-22.00)	42.00 (37.00-44.00)	22.50 (20.00-24.00)	6.00 (6.00-8.00)	3.00 (2.00-4.00)	6.00 (5.00-8.00)	7.00 (6.00-9.00)
More	35.00 (20.00-39.00)	14.00 (10.00-18.00)	16.00 (11.00-22.00)	42.00 (37.00-44.00)	22.00 (19.00-24.00)	7.00 (6.00-8.00)	3.00 (2.00-4.00)	6.00 (3.00-8.00)	9.00 (7.00-10.00)
KW/p	1.275 p=0.529	0.378 p=0.828	0.953 p=0.621	0.482 p=0.786	0.302 p=0.860	0.951 p=0.622	1.090 p=0.580	2.040 p=0.361	3.191 p=0.203

The a and b superscripts show the differences between groups. Scale scores were statistically similar between groups with the same letters.

Table 3. Distribution of PSS, BMS, and LATCH scale scores according to introductory characteristics of primiparous mothers (continues)

Features	Perceived Stress Scale M(Q1-Q3)			Breastfeeding Motivation Scale M(Q1-Q3)					LATCH Scale M(Q1-Q3)
	PSS-Total	PSS-PIS	PSS-PSD	BMS-IR	BMS-IMR	BMS-ISA	BMS-ISP	BMS-EIN	
Type of delivery									
Normal	38.00 (23.50-41.00)	16.00 (10.50-18.25)	20.00 (15.00-23.00)	42.00 (37.00-44.00)	22.00 (20.00-24.00)	6.00 (6.00-8.00)	2.50 (2.00-4.25)	6.00 (4.75-8.00)	7.50 (5.75-9.00)
Cesarian	29.00 (22.00-41.00)	13.50 (11.00-18.00)	15.00 (11.00-23.25)	43.50 (37.00-44.00)	24.00 (20.00-24.00)	7.50 (6.00-8.00)	3.00 (2.00-5.00)	7.50 (5.00-8.00)	7.00 (6.00-9.00)
U/p	1.220 p=0.222	1.147 p=0.251	1.796 p=0.073	0.693 p=0.489	1.252 p=0.210	1.450 p=0.147	0.665 p=0.506	1.499 p=0.134	0.292 p=0.770
Newborn's gender									
Female	33.00 (22.00-41.00)	15.00 (10.50-18.00)	18.00 (12.00-23.00)	42.00 (37.00-44.00)	23.00 (20.00-24.00)	7.00 (6.00-8.00)	2.00 (2.00-4.50)	7.00 (5.00-8.00)	8.00 (7.00-9.00)
Male	38.00 (22.00-41.00)	16.00 (11.00-19.00)	19.00 (13.00-24.00)	42.00 (37.00-44.00)	22.00 (20.00-24.00)	6.00 (6.00-8.00)	3.00 (2.00-5.00)	6.00 (4.00-8.00)	7.00 (5.00-9.00)
U/p	0.709 p=0.479	1.083 p=0.279	0.396 p=0.692	0.311 p=0.756	0.548 p=0.584	0.863 p=0.388	1.279 p=0.201	0.636 p=0.525	1.746 p=0.081
Prenatal breastfeeding training									
Received	27.00 (20.00-39.00)	12.50 (7.00-18.00)	15.00 (11.00-20.00)	44.00 (40.00-44.00)	24.00 (21.00-24.00)	8.00 (6.00-8.00)	2.00 (2.00-5.00)	8.00 (6.00-8.00)	8.00 (7.00-9.25)
Not received	41.00 (39.00-44.00)	18.00 (16.00-21.00)	23.00 (18.00-25.25)	37.00 (34.75-40.00)	20.00 (18.00-21.25)	6.00 (4.00-7.00)	4.00 (3.00-4.25)	4.00 (3.00-6.00)	6.50 (5.00-8.00)
U/p	5.758 p<0.001	5.270 p<0.001	5.044 p<0.001	6.274 p<0.001	5.400 p<0.001	4.768 p<0.001	2.405 p=0.016	6.376 p<0.001	4.166 p<0.001
Newborn's first breastfeeding time									
immediately after birth	40.50 ^a (35.75-44.75)	18.00 (15.25-20.75)	23.50 ^a (17.25-25.75)	40.00 (37.00-43.75)	22.00 (20.00-24.00)	6.50 (6.00-7.00)	4.00 (3.00-4.75)	6.00 (4.25-7.00)	8.00 (5.25-9.75)
Within 30 minutes	33.50 ^{ab} (21.50-41.25)	15.00 (7.00-18.25)	17.50 ^{ab} (13.00-22.25)	42.00 (37.00-44.00)	22.50 (20.00-24.00)	6.50 (6.00-8.00)	3.00 (2.00-5.00)	6.50 (4.00-8.00)	7.00 (6.00-9.00)
Within30-60 minutes	32.50 ^b (22.00-39.00)	14.50 (11.00-18.00)	17.00 ^b (11.00-20.00)	43.00(36.50-44.00)	24.00(20.00-24.00)	6.50(6.00-8.00)	2.00(2.00-4.00)	7.50(4.75-8.00)	7.00(7.00-9.00)
After the first 24 hours	34.00 ^{ab} (17.75-41.75)	14.50 (8.00-18.25)	17.50 ^{ab} (9.75-25.50)	41.50 (38.25-44.00)	24.00 (22.25-24.00)	7.00 (6.00-8.00)	2.00 (2.00-4.75)	6.00 (6.00-8.00)	6.50 (4.25-7.75)
KW/p	8.694 p=0.034	6.894 p=0.075	8.476 p=0.037	1.315 p=0.726	2.809 p=0.422	1.516 p=0.678	5.683 p=0.128	1.593 p=0.661	2.638 p=0.451

The a and b superscripts show the differences between groups. Scale scores were statistically similar between groups with the same letters.

According to the comparison of breastfeeding motivation scores to introductory characteristics, primiparous mothers in the 18-25 age group had higher BMS-IR, BMS-IMR, BMS-ISA, and BMS-EIN scores. University graduates had significantly higher BMS-IR and BMS-ISA scores compared to primary school graduates ($p < 0.05$). The scores of high school graduates were statistically similar to the other two groups. BMS-IR and BMS-EIN scores of working mothers were significantly higher compared to non-working mothers ($p < 0.05$). It was determined that the BMS-IR, BMS-IMR, and BMS-ISA scores of the mothers with a planned pregnancy were significantly higher and BMS-ISP scores were significantly lower compared to mothers who did not have a planned pregnancy. There was no difference between BMS sub-dimension scores with respect to income status, type of delivery, and newborn's gender ($p > 0.05$). BMS-IR, BMS-IMR, BMS-ISA, and BMS-EIN scores of mothers who received prenatal breastfeeding training were higher compared to mothers who did not receive breastfeeding training before. In contrast, mothers who did not receive breastfeeding training before delivery had higher BMS-ISP score. There was no difference in BMS sub-dimension scores with respect to the time of first breastfeeding after birth ($p > 0.05$) (Tables 2 and 3).

According to the comparison of LATCH scores to introductory characteristics of primiparous mothers, no difference was found in breastfeeding success with respect to age. High school and university graduate primiparous mothers had similar LATCH scores, while the LATCH scores of primary school graduates were significantly lower than the other two groups ($p < 0.05$).

LATCH scores were significantly higher in mothers with planned pregnancies ($p < 0.05$). No difference was found in LATCH scores with respect to working status, income status, type of delivery, and newborn's gender ($p > 0.05$). The LATCH scores of the mothers who received prenatal breastfeeding training were significantly higher compared to those who did not ($p < 0.05$). No difference was found in LATCH scores with respect to the breastfeeding time of the newborn ($p > 0.05$) (Tables 2 and 3). The relationship between PSS, BMS, and LATCH is illustrated in table 4. A strong negative correlation was found between PSS total, PSS-PIS and PSS-PSD scores and BMS-IR ($\rho = -0.739, -0.655; -0.718, p < 0.001$), BMS-IMR ($\rho = -0.685, -0.649, -0.663, p < 0.001$) scores. A moderate negative correlation was found between BMS-ISA scores ($\rho = -0.565, -0.547, -0.549, p < 0.001$). Furthermore, a weak positive correlation was found between BMS-ISP scores ($\rho = 0.345, 0.247, 0.361, p < 0.001$). Lastly, a strong negative correlation was found between BMS-EIN scores ($\rho = -0.674, -0.659, -0.643, p < 0.001$).

A moderate negative correlation was found between LATCH and PSS-total and PSS-PSD scores ($-0.609, -0.604, p < 0.001$), and a weak negative correlation was found between LATCH and PSS-PIS scores ($-0.489, p < 0.001$). There was a moderate positive correlation between LATCH and BMS-IR, BMS-IMR, BMS-ISA, BMS-EIN scores ($\rho = 0.557, 0.586, 0.594, 0.492, p < 0.001$). There was a weak negative correlation between LATCH and BMS-ISP scores ($\rho = -0.283, p = 0.001$).

Table 4. Relationship between PSS, BMS, and LATCH scale scores

Scales	PSS total		PSS-PIS		PSS-PSD		LATCH	
	<i>rho</i>	<i>p</i>	<i>rho</i>	<i>p</i>	<i>rho</i>	<i>p</i>	<i>rho</i>	<i>p</i>
Integrative Regulation (BMS-IR)	-0.739	<0.001	-0.655	<0.001	-0.718	<0.001	0.557	<0.001
Intrinsic Motivation and Identified Regulation (BMS-IMR)	-0.685	<0.001	-0.649	<0.001	-0.663	<0.001	0.586	<0.001
Introjected Regulation-Social Approval (BMS-ISA)	-0.565	<0.001	-0.547	<0.001	-0.549	<0.001	0.594	<0.001
Introjected Regulation-Social Pressure (BMS-ISP)	0.345	<0.001	0.247	0.005	0.361	<0.001	-0.283	0.001
External Regulation-Instrumental Needs (BMS-EIN)	-0.674	<0.001	-0.659	<0.001	-0.643	<0.001	0.492	<0.001
LATCH	-0.609	<0.001	-0.489	<0.001	-0.604	<0.001		

DISCUSSION

The aim of the present research was to investigate the relationship between perceived stress and breastfeeding motivation, and breastfeeding success in mothers with newborn infants in the neonatal unit, and the results of the study were discussed in light of the relevant literature. In the present research, 70.3% of the mothers had received breastfeeding training before delivery. Gönenli et al (2019), determined that all primiparous mothers received training on breastfeeding in the prenatal period (17). In their study, Bulut and Küçük Alemdar (2021) reported that 71.0% of the mothers received breastfeeding training (18). Perceived stress levels were higher in older age groups primiparous mothers in the present study. Contrary to this finding, Erdem (2010) found that there was no significant difference in state and trait anxiety levels of mothers with respect to age (19). The perceived stress levels of primiparous mothers with a university degree were lower compared to primary school and high school graduates. Contrary, Omak et al.(2021) and Özyazıcıoğlu and Güdücü Tüfekci (2010) found no significant difference in state and trait anxiety levels with respect to the education level of mothers whose babies were hospitalized in the neonatal unit (20,21). Musabirema et al. (2015) found that among mothers whose babies were hospitalized in the neonatal unit, perceived stress levels in terms of the appearance and sounds of the neonatal unit were higher in primary school graduates compared to university graduates (22). In the present research, no significant difference was found in perceived stress levels with respect to whether the pregnancy was planned or not. Similarly to this result, Omak et al.(2021) reported that there was no difference between the state of wanting pregnancy and anxiety levels among mothers with their babies in the neonatal unit (20). The results of the present study showed that perceived stress levels were higher among non-working mothers. In contrast, Keklikçi et al (2020), reported that working mothers had higher stress levels compared to non-working mothers (3). The perceived stress of mothers who started breastfeeding immediately after birth was higher, in this study. It was thought that this finding might be related to the limitation of movement and pain experienced in the postoperative period, especially after cesarean delivery.

The breastfeeding motivation scale integrative regulation and introjected regulation -social approval scores of university graduate mothers were significantly higher compared to primary school graduates, in this study ($p<0.05$). The integrative regula-

tion sub-dimension, which is a type of autonomous motivation, reflects the purpose of the mother's life and her own reflections (11,13). This type of motivation may be higher in mothers with a high level of education because they can access information about breastfeeding more easily, they are relatively older, and these factors increase their confidence in breastfeeding (23,24). Similar to these results, Mızrak Şahin et al (2019), reported that mothers with a high level of education had higher breastfeeding motivation (25). Introjected regulation-social approval, which is a type of controlled motivation, is the attitudes and behaviors that the mother exhibit externally to her husband or environment to show that she is a good mother (10). The fact that university graduates received higher scores in the social approval sub-dimension was thought of as a positive finding in terms of ensuring the continuity of breastfeeding.

The study results indicate that autonomous motivation types integrated regulation, intrinsic motivation, and identified regulation, and one of the controlled motivation types external regulation-instrumental needs sub-dimension scores were higher among working mothers. Intrinsic motivation and identified regulation, which are autonomous motivation types, are the sum of the notions that the mother enjoys breastfeeding her baby, breastfeeding provides satisfaction to the mother, breastfeeding is important and beneficial for the mother, and the mother feels better as she breastfeeds (13,26). External regulation- instrumental needs sub-dimension, which is a type of controlled motivation, is where the mother sees breastfeeding as a tool and uses breastfeeding as a means to realize her own ambitions. An example of this is when mothers breastfeed to lose weight and avoid the cost of formula (11,13). The high external regulation- instrumental needs sub-dimension scores among working mothers suggests that breastfeeding can be seen as a source of motivation in terms of additional benefits such as using maternity leave.

In the current research, the introjected regulation-social pressure sub-dimension score was higher among mothers whose pregnancy was not planned. Introjected regulation-social pressure sub-dimension, which is a type of controlled motivation, refers to breastfeeding behavior caused by internal pressures (a sense of guilt and anxiety) to prove that she is a good mother and not to shame her spouse or social environment (10). In contrast, integrative regulation, intrinsic motivation, and identified regulation, and introjected regulation-social approval scores were found to be higher in mothers with a planned pregnancy. This simply suggests that mothers who have

a baby willingly are more motivated to breastfeed. This study's results also showed that mothers who received prenatal breastfeeding training had a higher motivation to breastfeed. Antenatal breastfeeding education can have positive effects on the motivation and competence of the mother in setting achievable breastfeeding goals (27,28). On the other hand, mothers who have insufficient knowledge about breastfeeding problems in the prenatal period are more likely to supplement nutrition with formula in the early postpartum period because they are not self-confident in breastfeeding (29). In this study, no difference was found in breastfeeding motivation with respect to the mode of delivery. Contrary to this result, Lange et al (2017), reported that breastfeeding motivation was higher among mothers who had normal vaginal delivery compared to mothers who gave birth by cesarean section (30).

No difference was found in breastfeeding success with respect to the mother's age in this study. Similarly, Küçüköğlü and Çelebioğlu (2014) found no statistically significant difference in LATCH scores with respect to the mother's age (31). In the present research, LATCH scores were higher among mothers with a planned pregnancy. Contrary, Oksal Güneş and Çetinkaya (2017), reported that mothers whose pregnancy was not planned had higher LATCH scores, but the difference was not statistically significant (32). In this study, there was no difference in LATCH scores with respect to the type of delivery. In contrast, Küçüköğlü and Çelebioğlu (2014) found that the breastfeeding success of mothers was affected by the type of delivery (31). Similarly, Turan and Bozkurt (2020) also found that type of delivery had an effect on breastfeeding success (33). In the current study, LATCH scores of primiparous mothers who received breastfeeding education before delivery were significantly higher. İnce et al (2017), determined that the breastfeeding success of mothers who reported receiving both prenatal and postnatal breastfeeding counseling was significantly higher compared to the mothers who did not (9). In line with the "Ten Steps to Successful Breastfeeding" recommended by UNICEF to promote, support, and encourage breastfeeding, it is recommended to initiate breastfeeding within the first half-hour after birth and that the mother and the baby stay in the same room for 24 hours in order to ensure skin-to-skin contact (1). In the present research, no difference was found in LATCH with respect to breastfeeding initiation time. Contrary to this result, other studies reported that mothers who initiate breastfeeding within an hour after birth had more breastfeeding success and longer breastfeeding times (34,35).

In this research, as perceived stress decreased, breastfeeding motivation and breastfeeding success increased. A high level of stress can affect the mother's motivation to breastfeed and the success of breastfeeding since it means that the mother has difficulty participating in the care of her baby and has more anxiety about breastfeeding. According to these results, an increase in breastfeeding motivation also increases breastfeeding success. These findings demonstrate the importance of supporting breastfeeding motivation to ensure the continuation of breastfeeding in mothers whose babies are in the neonatal unit. Motivation of the mother to breastfeed was evaluated as a positive finding in terms of starting breastfeeding in the early period, and ensuring the continuity of breastfeeding and successful breastfeeding. It was thought that health professionals should determine their motivation levels before giving breastfeeding counseling and support to mothers.

CONCLUSION

The perceived stress was higher among primiparous mothers whose newborn infants received treatment and care in the neonatal unit, who were older age, primary and high school graduates, unemployed, did not receive breastfeeding training before delivery, and started breastfeeding immediately after birth. Breastfeeding motivation was higher among young mothers, university graduates, working mothers, mothers with a planned pregnancy, and mothers who received breastfeeding training before delivery. The results also showed that mothers who graduated from high school and university, whose pregnancy was planned, and who received breastfeeding training before delivery had higher breastfeeding success scores. In the present research, it was found that as perceived stress decreased, breastfeeding motivation and breastfeeding success increased. A correlation was found between breastfeeding motivation and breastfeeding success.

In line with the study findings, it is recommended to plan and implement education and intervention efforts to reduce the stress levels of mothers whose infants are hospitalized in the neonatal unit. Neonatal nurses have the opportunity to observe mothers' breastfeeding behaviors one-on-one, so they have critical importance and role in increasing breastfeeding motivation. Starting from the prenatal period, interventions such as education, and interviews that support autonomous motivation can be implemented, and studies can be carried out to monitor mothers' breastfeeding status and motivation levels. In addition, it is recommended to conduct further evidence-based stu-

dies in the neonatal units to increase breastfeeding motivation and breastfeeding success of primiparous mothers.

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