Research Article *Araştırma Makalesi* DOI: 10.62425/esbder.1509166

The Effect of Video Calls Held Between Preterm Babies Hospitalized in the Neonatal Intensive Care Unit and Their Mothers on the Amount of Breast Milk: A Randomized Controlled Trial

Yenidoğan Yoğunbakım Ünitesinde Yatan Preterm Bebekler ve Anneleri Arasında Yapılan Görüntülü Görüşmenin Anne Sütü Miktarına Etkisi: Randomize Kontrollü Çalışma

Serap KAYNAK[1]
Balıkesir University Faculty of Health Sciences, Department of Pediatric Nursing, Balıkesir, Türkiye

Hatice BAL YILMAZ[2]
Ege University Faculty of Nursing, Department of Pediatric Nursing, İzmir, Türkiye

Atika ÇAĞLAR[3]
Balıkesir Atatürk City Hospital, Neonatal Intensive Care Unit, Balıkesir, Türkiye

Mine ÖZDİL[4]
Balıkesir Atatürk City Hospital, Neonatal Intensive Care Unit, Balıkesir, Türkiye

ABSTRACT

Objective: In this study, it was aimed to investigate the effect of video calls held between preterm babies hospitalized in NICU and their mothers on the amount of breast milk.

Methods: This study is a randomized controlled trial. This study was conducted in the NICU of Balıkesir Atatürk City Hospital between 15 April-01 October 2022. One hundred preterm infants and their mothers, 50 in video call and 50 in control groups, were included. Online video calls between the preterm infants and their mothers were held by using Zoom application as 10 minutes on every day of the week. The breast milk follow-up form was sent to the mothers over WhatsApp application and the mothers sent the form back to the researcher at the 7th day. As per the standard hospital protocol, mother who control group can visit their infants in NICU face-to-face two days a week and get information about their infants.

Results: No statistically significant difference was determined between the video call group and the control group in terms of 7-day breastmilk amount; however, the breast milk of the mothers in the video call group increased more on the 7th day compared to the control group (p<.001).

Conclusions: It was found that the amount of breast milk increased more in the mothers in the experimental group at the end of day 7 compared to the control group mothers. Preterm delivery is among the factors that lead to inadequate breast milk expression. NICU nurses can make use of virtual patient visit technology in order to increase the amount of breast milk in mothers.

Keywords: Breast milk, video call, mother, preterm, NICU

ÖZ

Amaç: Bu araştırmanın amacı, YYBÜ'nde preterm bebekler ve anneleri arasında gerçekleştirilen görüntülü görüşmenin annelerde süt miktarına etkisinin incelenmesidir.

Yöntemler: Bu araştırma randomize kontrol gruplu deneysel bir çalışmadır. Araştırma Türkiye Balıkesir Atatürk Şehir Hastanesi Yenidoğan Yoğun Bakım Ünitesinde 15 Nisan- 1 Ekim 2022 tarihleri arasında yapılmıştır. Araştırmada görüntülü görüşme ve kontrol grubu olmak üzere iki grup bulunmaktadır. Araştırmaya, görüntülü görüşme grubunda 50, kontrol gurubunda 50 toplam 100 preterm bebek ve annesi dahil edilmiştir. Preterm bebeği ve annesi arasındaki online görüntülü görüşmeler zoom uygulaması kullanılarak haftanın her günü 10 dk olarak uygulanmıştır. Görüşme sırasında annelere yönlendirme yapılmamış, istedikleri şekilde bebeğini izlemeleri sağlanmıştır. Anneler ve preterm bebekleri arasındaki görüntülü görüşmeler günlük 10 dk olarak uygulanmıştır. Araştırmacı günlük anne sütü miktarı takip çizelgesini, anneye whatsapp uygulaması üzerinden göndermiştir. Yedinci günün sonunda anne, anne sütü takip çizelgesini whatsapp uygulaması üzerinden araştırmacıya tekrar iletmiştir. Standart hastane protokolünde kontrol grubundaki anneler YYBÜ'deki bebeklerini haftanın iki günü yüz yüze ziyaret ederek bebekleri hakkında bilgi alabilmektedir.

Bulgular: Görüntülü görüşme grubu ile kontrol grubu arasında 7 günlük anne sütü fark miktarı arasında istatistiksel olarak anlamlı bir fark saptanmamıştır, ancak görüntülü görüşme grubundaki annelerin anne sütü 7. günde kontrol grubuna göre daha fazla arttığı bulunmuştur (p<,001).

Sonuç: Görüntülü görüşme grubunda yer alan annelerin süt miktarı kontrol grubuna göre yedinci gün sonunda daha çok arttığı tespit edilmiştir. Preterm doğum annelerde yetersiz süt salınımına neden olan faktörler arasında yer almaktadır. YYBÜ hemşireleri preterm annelerde süt miktarını arttırmak için sanal hasta ziyareti teknolojisinden faydalanabilir.

Anahtar kelimeler: Anne sütü, görüntülü görüşme, anne, preterm, YYBÜ

Geliş Tarihi/Received 31.08.2024
Kabul Tarihi/Accepted 07.02.2024
Yayın Tarihi/Publication Date 05.07.2024

Sorumlu Yazar/Corresponding author: Serap KAYNAK

E-mail: serapkaynk@gmail.com

Cite this article: Kaynak, S., Bal- Yılmaz, H., Çağlar A., & Özdil, M. (2024). The effect of video calls held between preterm babies hospitalized in the neonatal intensive care unit and their mothers on the amount of breast milk: A randomized controlled trial. *Journal of Midwifery and Health Sciences*, 7(2),293-299.

Introduction

The World Health Organization (WHO) recommends that infants should be fed with only breast milk in the first 6 months and that feeding with breast milk should continue at least until the infant is 2 years old (WHO, 2017). Similarly, the American Academy of Pediatrics also recommends that infants should be fed only with breast milk in the first 6 months, and that breast milk feeding should be maintained at least until the infants is one year old along with complementary nutrition (Goldman, 2019). Breast milk is the most appropriate nutrition in terms of involving all fluids, energy, and nutritional elements necessary for infants to grow and develop and being easy to digest. Every year, millions of mothers and infants lose their lives across the world due to insufficient nutrition and not receiving healthcare (Arca, & Işık, 2019).

There is no other nutrition superior to breast milk in terms of feeding preterm infants. Breast milk is a source of nutrition preferred for preterm infants as it provides protection against nutrition intolerance, necrotizing enterocolitis, sepsis, bronchopulmonary dysplasia, and severe premature retinopathy, decreases mortality, and improves long-term psychological and neurodevelopmental development (Basu, et al., 2020; Battersby, et al., 2017; Quigley, 2018). Breast milk is easy to digest, and it includes numerous immunological factors such as lactoferrin, cytokines, enzymes, growth factors, and leukocytes (Brown et al., 2019). Another significant benefit of breast milk for infants is that the delivery of this immunological and growth factor to the immature intestinal mucosa supports postnatal physiological, neuro-endocrinological, and metabolic adaptation (Embleton, et al., 2017).

Hospitalization of preterm infants is a traumatic event for families. The control in infant care is taken from the parent, albeit not all of it, and is given to the hands of the healthcare team. This situation creates fear, worry, uncertainty, anxiety, and stress for families, particularly for mothers (Goldschmidt and Mele, 2021; Dunham and Marin, 2020). The mother, who is deprived of caring for her baby, feels stressed, nervous, and confused. She tries to have access to her infant, and when she fails to do so, she finds herself in a desperate and weak situation. This stressful period that may result in depression can cause the mother's milk to decrease or run out (Ergün et al., 2022).

It is known that stress and anxiety experienced by mothers in preterm childbirth negatively affect the amount, volume, and quality of breast milk, and that the methods that will provide relaxation and relief will decrease stress and anxiety and increase breast milk production (Varisoglu and Gungor Satilmis, 2019). NICU nurse plays a significant role in starting to feed the preterm neonate with breast milk and maintaining it. NICU nurse is also responsible for informing the family about the importance of breast milk and methods that increase breast milk. This information provided by NICU nurse will lead to a decrease in the stress and anxiety experienced by the family (Altinbas & Ister, 2020; Akarsu et al., 2017).

By using video call technology over the Internet through smart devices, mother-baby-family talk can be realized, and thus a virtual patient visit can be carried out between the baby and the family in NICUs (Ross and Goldschmidt, 2021; Murray and Swanson, 2020; Kubicka et al., 2021; Psychogiou et al., 2020; Gerfen, 2018). In studies in which video calls were held between the mother and the baby hospitalized in NICU, it has been reported that video call increased breast milk production (Dunham & Marin, 2020; Gibson & Kilcullen, 2020; Gerfen, 2018). Hence, the main aim of the present study was to investigate the effect of video calls made between preterm babies hospitalized in NICU and their mothers on the amount of breast milk.

Methods

Study design: This study is a randomized controlled trial.

Participants and procedures: The study was designed as an experimental research with control group. The study was conducted in the Neonatal Intensive Care Unit of Balıkesir Atatürk City Hospital between 16 April-01 October 2022. In the study, no sampling was done, and mothers and preterm babies who met the inclusion criteria in the study period were included in the study. It was planned to access the whole population in terms of the study sample. 100 mothers who met the research criteria were included in the study. 100 preterm infants who were hospitalized in NICU and their mothers, 50 in the video call group and 50 in the control group, were included in the study group. Whether the preterm infants and their mothers would be placed in the video call group or the control group was determined through simple randomization method over the website of www.randomizer.org. The inclusion criteria for mothers were determined as having 30-36+6 gestational week, having a stable clinical picture, not having a congenital anomaly, and being the mother of a preterm infant hospitalized in NICU. In addition, the mother should be older than 18 years, not have a psychiatric disorder, be pumping breast milk, communicate in Turkish, and have a smart device to have access to the Internet. Mothers who had term infants, were younger than 18 years, could not communicate in Turkish, and did not have a smart device to connect to the Internet were not included in the study. In the NICU where the study was conducted, as a routine practice, mothers could visit their infants twice a week and can leave the breast milk they previously pumped at NICU

whenever they wished.

Prior to the study, the participating mothers were informed about the study, and their written consents to participate in the study were taken. Online video calls between the preterm infants and their mothers were held by using Zoom application for 10 minutes 7 days a week. During the video calls, mothers were not directed in any way, and they were allowed to watch their infants as they wished. On visitation days when mothers came to see their infants face-to-face, no video calls were made. Before the study, the mothers filled out identifying information form for the mother and the preterm infant. The researcher sent the breast milk amount follow-up form to the mothers over WhatsApp application. At the end of 7 days, the mothers sent back the forms through the same channel.

Experimental and Control Groups of the Study

1. Video Call Group: The participant mothers in this group had an online video call on a smart device through Zoom application with their preterm infants who were hospitalized in NICU without coming to the hospital. The mothers in this group watched their infants and communicated with them as they wished. The total duration of each video call was 10 minutes.

2. Control Group: Standard hospital procedure was applied to the mothers in this group. As per the standard hospital protocol, mother can visit their infants in NICU face-to-face two days a week and get information about their infants. Prior to the application, the mothers filled out identifying information form for mothers and preterm infants. The researcher sent the daily breast milk amount follow-up form to the mothers over WhatsApp application. On day 7 of the study, the mothers sent back the form to the researcher through the same channel.

Measures: The study data were collected through mother-preterm infant identifying information form and breast milk amount follow-up form.

Mother-Preterm Infant Identifying Information Form: The form consisted of nine questions inquiring about the mother's age, occupation, educational level, perceived income, type of delivery, being able to touch the preterm infant in NICU, gestational birth week, birth weight, and gender of the preterm infant.

Breast Milk Amount Follow-up Form: The mothers recorded their daily breast milk amount on this form on a daily basis for 7 days a week. The form was sent to the mothers online, and the mothers sent it back online to the researcher.

Data analysis: The data obtained in the study were expressed as the mean± standard deviation (SD) and statistical analysis was performed using SPSS 23 program, 11.0 version (SPSS Inc, Chicago, IL, USA). The statistical significance was set at $p<0.05$. In statistical analysis, numerical data were expressed as mean ± standard deviation and categorical datawere indicated by number (n) and percentage (%). The Kolmogorov-Smirnov normality test was applied to evaluate the data distribution. When the data were not normally distributed, the nonparametric Mann-Whitney U test was used, Student's t-test was used for parametric distribution. In addition, Spearman's rank correlation coefficients were sed to determine any significant relationship between differences in milk amount and maternal variables.

Table 1.
Maternal Demographic and Infant Characteristics of Video Call and Control Groups

Variables	Video call group (n=50)		Control Group (n=50)		P
Mean of age	29.00±5.55		29.50±8.10		
Gestational week	33±1.9		33.5±1.6		
Birth weight	1899±481.8		2003±390		
	n	%	n	%	
Education Status					
Secondary School	12	24	12	24	.496
High School	24	48	20	40	
University	12	24	13	26	
Postgraduate	2	4	5	10	
Employment Status					
Unemployed	26	52	35	70	
Teacher	12	24	2	4	
Self-employment	8	16	3	6	.325
Government employment	4	8	10	20	
İncome status					
High	8	16	6	12	
Middle	42	84	42	84	.319
Low	-	-	2	4	
Mode of delivery					
Normal	7	14	13	26	.196
Cesarean	43	86	37	74	
Touching the preterm baby in the NICU					
Yes	20	40	15	30	.174
No	30	60	35	70	
Gender of the baby					
Female	33	66	33	66	1.000
Male	17	34	17	34	

NICU= Neonatal intensive care unit

Ethics statement: Clinical Studies Ethics Committee of

Balikesir University granted ethical approval for the study (Decision No. 2021/207, Date: 22 September 2021). The permissions required for conducting the study in the NICU of Balıkesir Atatürk City Hospital were obtained. All mothers were given information on the study and gave written informed consent.

Results

Basic maternal and infant characteristics between video call and control groups are demonstrated in Table 1. There was no significant difference between the video and control groups among the maternal and infant characteristics (Table 1). There was no difference between the groups in terms of characteristics of the mothers and preterm infants. The groups were homogenously distributed.

Table 2 represents the 1st day, 7th day and the differences in milk amounts between two groups (Table 2) ($p<.001$). No statistically significant difference was determined between the video call group and the control group in terms of 7-day breastmilk amount; however, the breast milk of the mothers in the video call group increased more on the 7th day compared to the control group.

There was no significant correlation between difference in milk amount and maternal, age, occupation, level of education, income, type of delivery, baby gender, touching the baby in NICU.

Discussion

The study was conducted in order to determine the effect of video calls made between preterm infants hospitalized in NICU and their mothers on the mothers' breast milk amount. When the descriptive characteristics of the mothers and their preterm infants included in the study were examined, it was seen that there was no statistically significant difference between the groups in terms of these variables, and that the groups were homogenously distributed. As the study was a randomized controlled trial and there was homogeneity between the groups, identifying characteristic of the mothers and preterm infants were not discussed. Homogenous distribution of the groups is important in terms of eliminating the mixing effect on the mothers' and preterm infants' identifying characteristics.

No statistically significant difference was found between the mothers in terms of day 7 breast milk amount; however, the increase in the amount of breast milk was found to be higher in the experimental group mothers compared to the control group. In the literature, there are no studies conducted in which the effect of video calls on only breast milk amount was investigated. In studies conducted in this regard, the mothers' opinions on the effect of watching their infants through video call technology were reported. The study results were discussed in line with the existing literature.

In the qualitative study conducted with the participation of 12 mothers by Gerfen (2018), in which the effect of watching their babies hospitalized in NICU through Angel Eye camera technology on postpartum depression was examined, it was reported that while the mothers were pumping their breast milk or in other times when they had the opportunity to see their infants, their breast milk amount increased (Gerfen, 2018). In the randomized uncontrolled study, they conducted with the participation of 33 families and 18 NICU healthcare professionals, Kerr et al. (2017) reported that seeing their infants through a webcam made the mother feel good and their breast milk amounts increased (Kerr et al., 2017). In another study conducted by Rhods et al. (2015) with the participation of 42 parents, in which the effect of watching their infants hospitalized in NICU through a webcam on their stress, anxiety, and bonding was examined, the mothers reported that watching their infants hospitalized in NICU through a webcam while they were pumping their breast milk positively affected their amount of breast milk (Rhods et al., 2015). Video call technology helps mothers to establish a bond with their infants, and thus increasing the prolactin hormone due to bonding, it triggers breast milk production (Dunham and Marin, 2020). Thanks to video calls, the mother feels herself closer to her infant, and this situation increases breast milk production as the mother starts thinking about her infant, and more breast milk is expressed (Lau, 2018). The present study, in which we examined the effect of video call on the amount of breast milk, will contribute to the literature as a randomized controlled trial. As a result of the study, a statistically insignificant increase was determined in the breast milk amount of the mothers in the experimental group compared to the control group. The study results support the increase in the amount of breast milk as reported by mothers in the literature.

Table 2.
Comparison of 1st Day, 7th Day Milk and Differences in Milk Amounts Between Video Call and Control Groups

	Video call group (n=50)	Control group (n=50)	p level
1st day milk (cc, mean ± SD)	294.6±263.9	150.1±140.0	.010*
7th day milk (cc, mean ± SD)	382.4±318.4	180.6±175.0	.001*
Difference in milk amount (cc, mean ± SD)	87.8±143.2	37.7±81.3	.32

Limitations: The study is limited to the data obtained from 100 mothers of preterm infants hospitalized in NICU. Hence, the results of the study can only be generalized to groups with similar characteristics to the study group.

Conclusion and Implications

The present study was conducted as a randomized controlled trial with the participation of 100 mothers of preterm infants in order to determine the effect of video calls held between preterm infants hospitalized in NICU and their mothers on the mothers' breast milk amount. It was found that the amount of breast milk increased more in the mothers in the experimental group at the end of day 7 compared to the control group mothers. Preterm delivery is among the factors that lead to inadequate breast milk expression. NICU nurses can make use of virtual patient visit technology in order to increase the amount of breast milk in mothers. Considering that mothers of preterm infants cannot establish adequate communication with their infants due to separation in the early period and cannot build an effective bond with them, it has been concluded that video calls made between the mothers and their preterm infants will strengthen mother-baby bond and thus will positively affect the amount of breast milk. Breast milk is the most appropriate nutrition in terms of involving all fluids, energy, and nutritional elements necessary for infants to grow and develop and being easy to digest. It is known that stress and anxiety experienced by mothers in preterm childbirth negatively affect the amount, volume, and quality of breast milk, and that the methods that will provide relaxation and relief will decrease stress and anxiety and increase breast milk production (Varışoğlu and Güngör Satılmış, 2019). NICU nurse plays a significant role in starting to feed the preterm neonate with breast milk and maintaining it. NICU nurse and midwife are also responsible for informing the family about the importance of breast milk and methods that increase breast milk. This information provided by NICU nurse will lead to a decrease in the stress and anxiety experienced by the family. Virtual patient visits can be used as an effective method in NICUs by utilizing video call technology that will provide benefits in terms of improving mother and preterm bonding, so the amount of breast milk can increase.

Acknowledgments: We are grateful to the NICU staff at Balıkesir Atatürk City Hospital, the preterm baby who were receiving care in these units and agreed to participate in this study and their mother.

Etik Komite Onayı: Bu çalışma için etik komite onayı Balıkesir Üniversitesi'nden (Decision No. 2021/207, Date: 22 September 2021) alınmıştır.
Hasta Onamı: Bu çalışmaya katılan tüm katılımcılardan onam alındı.
Hakem Değerlendirmesi: Dış bağımsız.
Yazar Katkıları: Fikir- S.K., H.B.Y, A.Ç., M. Ö.; *; Tasarım- H.Y.D *; Denetleme- S.K., H.B.Y, A.Ç.M. Ö.; *; Kaynaklar-*; Veri Toplanması ve/veya İşlemesi S.K., A.Ç.M. Ö.; *; Analiz ve/ veya Yorum- S.K., H.B.Y., M. Ö.; *; Literatür Taraması-*; Yazıyı Yazan- S.K., H.B.Y, A.Ç.,M. Ö.; *; Eleştirel İnceleme- S.K., H.B.Y, A.Ç.
Çıkar Çatışması: Yazarlar, çıkar çatışması olmadığını beyan etmiştir.
Finansal Destek: Yazarlar, bu çalışma için finansal destek almadığını beyan etmiştir.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Balıkesir University Clinical Research Ethics Committee (Decision No. 2021/207, Date: 22 September 2021).
Informed Consent: Informed consent was obtained from all women who participated in this study.
Peer-review: Externally peer-reviewed.
Author Contributions: Concept – S.K., H.B.Y, A.Ç.,M. Ö.; Design – S.K., H.B.Y, A.Ç.,M. Ö.; Data Collection and/or Processing – S.K., A.Ç.,M. Ö.; Analysis and/or Interpretation – S.K., H.B.Y.,M. Ö.; Literature Search – S.K., H.B.Y, A.Ç.,M. Ö.; Writing Manuscript – S.K., H.B.Y, M. Ö.; Critical Review – S.K., H.B.Y, A.Ç.
Conflict of Interest: The authors declare no conflict of interest.
Financial Disclosure: The authors declared that this study has received no financial support.

References

Akarsu, R. H., Tunca, B., Alsaç, S. Y. (2017). Evidence-Based Applications in Mother-Infant Attachment. *Gümüşhane*

University Journal of Health Sciences, 6(4),275-279.

Altınbaş, Y., İster, E. D. (2020). Nurses' Attitudes Towards Caregiver Roles and Perceptions of Individualized Care. *STED*, 29(4), 246-254. DOI: 10.17942/sted.621856

Arça, G., Işık, H.F. (2019). The Role of Midwife and Nurse in Breastfeeding. *University of Health Sciences Journal of Nursing*, 1 (3), 221-228.

Basu, S., Upadhyay, J., Singh, P., Kumar, M. (2020). Early versus late fortification of breast milk in preterm infants: a systematic review and meta-analysis. *European Journal of Pediatrics*, 179, 1057-1068. https://doi.org/10.1007/s00431-020-03677-6

Battersby, C., Longford, N., Mandalia, S., Costeloe, K., Modi, N. (2017). Incidence and enteral feed antecedents of severe neonatal necrotising enterocolitis across neonatal networks in England, 2012–13: a whole-population surveillance study. *The Lancet Gastroenterology & Hepatology,* 2(1), 43-51. DOI: https://doi.org/10.1016/S2468-1253(16)30117-0

Brown, JV., Walsh, V., McGuire, W. (2019). Formula versus maternal breast milk for feeding preterm or low birth weight infants. *Cochrane Database of Systematic Reviews,* 8. Art. No.: CD002972. DOI: 10.1002/14651858.CD002972.

Dunham, M., Marin, T. (2020). NICU maternal-infant bonding: Virtual visitation as a bonding enhancement tool. *The Journal of Perinatal & Neonatal Nursing*, 34(2), 171–177. https://doi.org/10.1097/JPN.0000000000000484.

Embleton, N.D., Berrington, J.E., Dorling, J., Ewer, A.K., Juszczak, E., Kirby J.A, Lamb, C.A., Lanyon, C.V., McGuire, V., Probert, C.S., Rushton, S.P., Shirley, M.D., Stewart, C.J., Cummings, S.P. (2017). Mechanisms aFecting the gut of preterm infants in enteral feeding trials. *Frontiers in Nutrition*, 4,14-20. DOI: 10.3389/fnut.2017.00014.

Ergün, S., Kaynak, S., Aydın, B. (2022). Fear of COVID-19 and related factors affecting mothers' breastfeeding self-efficacy during the pandemic. *Revista da Escola de Enfermagem da USP*, 56, 1-8.

Gerfen, M. E. (2018). Postpartum depression in the neonatal intensive care unit: Experience of mothers utilising a web-camera. Doctoral dissertation America: University of Virginia. https://doi.org/10.18130/V3CV4BR39.

Gibson, R., Kilcullen, M. (2020). The impact of web-cameras on parent-infant attachment in the neonatal intensive care unit. *Journal of Pediatric Nursing,* 52, e77-e83. https://doi.org/10.1016/j.pedn.2020.01.009.

Goldman, A. S. (2019). Future research in the immune system of human milk. *The Journal of Pediatrics*, 206, 274-279.

Goldschmidt, K., Mele, C. (2021). Disruption of patient and family centered care through the COVID-19 pandemic. *Journal of Pediatric Nursing*, 58, 102. doi: 10.1016/j.pedn.2021.03.001

Kerr, S., King, C., Hogg, R., McPherson, K., Hanley, J., Brierton, M., Ainsworth, S. (2017). Transition to parenthood in the neonatal care unit: a qualitative study and conceptual model designed to illuminate parent and professional views of the impact of webcam technology. *BMC Pediatrics*, 17, 1-13.

Kubicka, Z., Zahr, E., Clark, P., Williams, D., Berbert, L., Arzuaga, B. (2021). Use of an internet camera system in the neonatal intensive care unit: parental and nursing perspectives and its effects on stress. *Journal of Perinatology,* 41(8), 2048-2056. https://doi.org/10.1038/s41372-021-00934-w.

Lau, C. (2018). Breastfeeding challenges and the preterm mother-infant dyad: a conceptual model. *Breastfeed Med.,* 13(1):8–17. https://doi.org/10.1089/ bfm.2016.0206.

Murray, P. D., Swanson, J. R. (2020). Visitation restrictions: is it right and how do we support families in the NICU during COVID-19. *Journal of Perinatology*, 40(10), 1576-1581. https://doi.org/10.1038/s41372-020-00781-1

Psychogiou, K., Ashworth, C., Weaver-Lowe, L., Carroll, C., Callow, C., & Edi-Osagie, N. (2020). Novel use of Facetime in supporting maternal-infant bonding. *Journal of Neonatal Nursing*, 26(2), 106-108. https://doi.org/10.1016/j.jnn.2019.07.012.

Quigley, M., Embleton, N.D., McGuire, W. (2018). Formula versus donor breast milk for feeding preterm or low birth weight infants. *Cochrane Database of Systematic Reviews,* 6. DOI: 10.1002/14651858.CD002971.pub4

Rhoads, S. J., Green, A., Mitchell, A., Lynch, C. E. (2015). Neuroprotective core measure 2: Partnering with families - exploratory study on web-camera viewing of hospitalized infants and the effect on parental stress, anxiety, and bonding. *Newborn & Infant Nursing Reviews,* 15(3), 104–110. https://doi.org/10.1053/j.nainr.2015.06.011

Ross, J., Goldschmidt, K. (2021). The use of live-stream virtual visits for parents in the neonatal intensive care unit (NICU). *Journal of Pediatric Nursing*, 59, 198-199. 10.1016/j.pedn.2021.04.012.

Turrill, S., Crathern, L. (2016). Yenidoğan yoğun Bakım Ünitesindeki Aileler. İçinde: Yenidoğan Yoğun Bakım Hemşireliği. Edt: G. Çeviri Edt: Tüfekçi Güdücü F, Küçük Alemdar D, Kardaş Özdemir F. Nobel Akademik Yayıncılık, İkinci basımdan çeviri, Ankara, Kızılay, pp: 41-61.

Varişoğlu, Y., Satilmiş, İ.G. (2019). Breast milk and alternative therapies for increasing breast milk in preterm births. Izmir Democracy University Health Sciences Journal, 2(2), 99-113.

WHO. (2017). Global guidance on ending the in appropriate promotion of foods for infants and young children. [cited 2023 April 19]. Available from: http://apps.who.int/iris/bitstream/10665/260137/1/9789241513470eng.pdf?ua=

Genişletilmiş Özet

Preterm bebeğin yenidoğan yoğunbakım ünitesine yatması aileler için travmatik bir olaydır. Bebeğin bakımdan uzak kalan anne kendini gergin, sinirli ve karmaşık hisseder. Bebeğine ulaşmak için çaba sarf eder ve bunu başaramadığında kendini yardıma muhtaç ve güçsüz bulur. Annenin yaşadığı, depresyona neden olabilecek bu yoğun stresli dönemler anne sütünün azalmasına-kesilmesine neden olabilmektedir. YYBÜ'lerinde, internet aracılığıyla görüntülü görüşme teknolojisi kullanılarak, akıllı cihazlar ile anne- bebek- aile görüşmesi sağlanarak bebek ve aileleri arasında sanal hasta ziyareti gerçekleştirilebilir. YYBÜ sinde bebeği yatan annelerin bebekleri ile görüntülü görüşme gerçekleştirdiği çalışmalarda anneler, görüntülü görüşmeni süt üretimini arttırdığını bildirmişlerdir. Bu nedenlerden dolayı, bu araştırmanın temel amacı, YYBÜ nde preterm bebekler ve anneleri arasında gerçekleştirilen görüntülü görüşmenin annelerde süt miktarına etkisinin incelenmesidir.

Bu araştırma randomize kontrollü, grup deneyli bir çalışma olarak planlanmıştır. Araştırma Türkiye Balıkesir Atatürk Şehir Hastanesi Yenidoğan Yoğun Bakım Ünitesinde 15 Nisan- 1 Ekim 2022 tarihleri arasında yapılmıştır. Araştırmada örneklem hesabına gidilmemiş, araştırma süresi içerisinde çalışma kriterlerine uyan anne ve preterm bebekler çalışmaya dahil edilmiştir. Araştırmaya preterm bebeği yenidoğan yoğunbakım ünitesinde tedavi gören 50 görüntülü görüşme (Görüntülü görüşme grubu) ve 50 kontrol grubu toplam 100 preterm bebek ve annesi dahil edilmiştir. Araştırmaya dahil edilen preterm bebekler ve annelerinin kontrol ya da çalışma gruplarından hangisinde yer alacağı www.randomizer.org adlı web sitesi üzerinden basit randomizasyon yöntemiyle belirlenmiştir. Annelerin araştırmaya dahil edilme kriterleri, 30-36+6 gestasyonel yaşa sahip, stabil bir kliniği olan, konjenital anomalisi bulunmayan, yenidoğan yoğunbakım ünitesinde tedavi gören preterm bebek annesi olmaktır. Ayrıca, annenin 18 yaşından büyük olması, psikyatrik bir bozukluğunun olmaması, sütünü sağması, Türkçe biliyor olması ve internete erişim yapabileceği akıllı bir cihaz kullanması gereklidir. Çalışmanın yürütüldüğü yenidoğan yoğunbakım ünitesinde rutin uygulamada anneler bebeklerini haftada iki gün ziyaret edebilmekte ve sağdıkları sütü istedikleri zaman yenidoğan yoğunbakım ünitesine bırakabilmektedirler. Araştırmada, uygulamaya başlamadan önce araştırmaya katılan annelere araştırmanın amacı hakkında bilgi verilerek araştırmaya katılmayı kabul ettiklerine dair yazılı onamları alınmıştır. Preterm bebeği ve annesi arasındaki online görüntülü görüşmeler zoom uygulaması kullanılarak haftanın her günü, 10 dk olarak uygulanmıştır. Görüşme sırasında annelere yönlendirme yapılmamış, istedikleri şekilde bebeğini izlemeleri sağlanmıştır. Anneler ve preterm bebekleri arasındaki görüntülü görüşmeler günlük 10 dk olarak uygulanmıştır. Anneler bebekleri ile yüz yüze görüşmeye geldikleri ziyaret günlerinde görüntülü görüşme gerçekleşmemiştir. Çalışma öncesi anneye, anne ve preterm bebeğe ait tanıtıcı bilgi formu doldurmuştur. Araştırmacı günlük anne sütü miktarı takip çizelgesini, anneye whatsapp uygulaması üzerinden göndermiştir. Yedinci günün sonunda anne, anne sütü takip çizelgesini whatsapp uygulaması üzerinden araştırmacıya tekrar iletmiştir. Yedinci günün sonunda anne, anne sütü takip çizelgesini whatsapp uygulaması üzerinden araştırmacıya tekrar iletmiştir. Standart hastane protokolünde kontrol grubundaki anneler yenidoğan yoğunbakım ünitesindeki bebeklerini haftanın iki günü yüz yüze ziyaret ederek bebekleri hakkında bilgi almışlardır. Araştırma öncesi Balıkesir Klinik Araştırmalar Etik Kulundan etik onay alınmıştır. Araştırmanın yapılabilmesi için Balıkesir Atatürk Şehir Hastanesinden kurum izni alınmıştır ve annelerden çalışmaya başlamadan önce yazılı onam alınmıştır.

Araştırma sonuçlarında; deney ve kontrol grubunda yer alan annelerin sosyo-demografik verileri ve preterm bebeğe ait özellikler açısında araştırma grupları arasında fark bulunmamaktadır. Gruplar homojen dağılmıştır. Görüntülü görüşme ve kontrol gruplarında yer alan annelerin yedinci gün süt farkı arasında istatiksel olarak anlamlı bir fark bulunamamıştır ancak annelerin yedinci gün toplam süt miktarları, birinci gün toplam süt miktarlarına kıyasla deney grubunda kontrol gurubuna göre daha yüksek bulunmuştur.Gerfen, Kerr ve ark., ve Rhods ve arkadaşlarının çalışmalarında bebeği yenidoğan yoğunbakım ünitesinde yatan anneler ve bebekleri arasında yapılan görüntülü görüşmelerin anne sütü miktarını olumlu etkilediğine dair bildirimlerde bulunmuşlardır. Annenin görüntülü görüşme sayesinde preterm bebeğine daha yakın hisseder, bu durumunda anne bebeğini düşündüğü için süt üretimi artarak daha çok süt salınımı gerçekleşecektir. Çalışmamız Görüntülü görüşmenin anne sütü miktarına etkisinin incelendiği randomize kontrollü bir çalışma olarak literatüre katkı sağlamaktadır. Çalışmamız sonucunda deney gurubunda yer alan annelerde kontrol gurubuna göre istatiksel olarak anlamlı olmayan bir artış vardır. Çalışmamız sonuçları literatürde yer alan anne ifadelerinde, anne sütü miktarı artışını destekler niteliktedir.

Bu çalışmanın en güçlü yanı Türkiye'de ilk kez yenidoğan yoğunbakım ünitesinde bebeği yatan annelerde anne sütü miktarına etkisini belirlemek için anne ve preterm bebeği arasında görüntülü görüşme teknolojisinin kullanıldığı bir çalışma olmasıdır. Preterm doğum annelerde yetersiz süt salınımına neden olan faktörler arasında yer almaktadır. yenidoğan yoğunbakım ünitesi hemşireleri preterm annelerde süt miktarını arttırmak için sanal hasta ziyareti teknolojisinden faydalanabilir. Annelerin erken dönemde bebeklerinden ayrı kalma nedeniyle bebeği ile yeterince iletişim kuramadığı ve etkin bir şekilde anne-bebek bağlanması kurulamadığı düşünüldüğünde, annenin preterm bebeği ile yapacağı görüntülü görüşmeler anne-bebek bağlanmasını artırarak anne sütü miktarına da olumlu etki edeceği sonucuna ulaşılmıştır.