

FT81

Prematüre Bebeklerde Bireyselleştirilmiş Gelişimsel Bakım Kapsamında Toplu Bakım Verme Kavramı

Concept Of Clustered Care In The Comprehensive Of Individualized Developmental Care In Premature Infants

Fatma TOKAN¹ Emine GEÇKİL²

Öğr. Gör., KTO Karatay Üniversitesi, Sağlık Hizmetleri MYO, Anestezi Programı, Karatay, Konya,

Prof. Dr., Necmettin Erbakan Üniversitesi, Hemşirelik Fakültesi, Çocuk Sağlığı ve Hastalıkları Hemşireliği ABD. Meram, Konya, Türkiye,

ÖZET

Prematüre bebek 37. gebelik haftası dolmadan dünyaya gelen bebektir. Prematüre bebeklerin gelişimlerini tamamlayamadan dünyaya gelmeleri prematürelige ek olarak birçok sağlık sorununu da beraberinde getirir. Prematüre bebeklerin vücut yüzeylerinden ısı kaybı fazladır, ciltleri incedir, emme refleksi gelişmemiştir ve akciğerleriyle yeterli gaz alış verişini sağlayamazlar. Prematüreler bu sağlık sorunları neticesinde yenidoğan yoğun bakım ünitelerinde (YYBÜ) desteklenirler. YYBÜ'sinin olumsuz koşullarını en aza indirmek, bebeğin sağlığını ve konforunu en üst düzeyde desteklemek amacıyla 'Bireyselleştirilmiş Gelişimsel Bakım' (BGB) modeli geliştirilmiştir. Bireyselleştirilmiş gelişimsel bakım modelinin ilkelerinden biri toplu bakım vermedir. Bakımın toplu şekilde verilmesi ve kümelenmiş bakım olarak da ifade edilen toplu bakım verme, YYBÜ'lerinde prematüre bebeklerin gereksinimleri olan bakım uygulamalarının toplu şekilde, zaman içine yaymak yerine aynı bakım saatinde verilmesini ifade eder. Toplu bakım vermenin prematüre bebeklerde oksijen ihtiyacının azalması, stres tepkilerinin azalması, stresin azalması ile konfor düzeyinin artması, apne sıklığının azalması, harcanan enerjinin azalması ile birlikte kilo alımının artması, fizyolojik, duyuşsal, zihinsel, duygusal ve sosyal gelişimi olumlu etkilemesi gibi olumlu etkileri mevcuttur. YYBÜ'nde çalışan hemşirelerin hemşirelik rolleri doğrultusunda BGB kapsamında prematüre bebeklere toplu bakım vermeleri gereklidir. Bu çalışmanın YYBÜ'nde desteklenen prematüre bebeklere bakım veren hemşirelere toplu bakım kavramını açıklamak için yararlı olacağı düşünülmüştür.

Anahtar Kelimeler: *prematüre bebek; bireyselleştirilmiş gelişimsel bakım; toplu bakım; YYBÜ; hemşire.*

Abstract

The premature infant is the baby born before the 37th gestational week. Premature infants born before they can complete their development bring many health problems in addition to prematurity. Premature infants have more heat loss from their body surfaces, skin is thin, absorption reflexes are not developed, and they cannot provide sufficient gas exchange with their lungs. As a result of these health problems, premature infant are supported in neonatal intensive care units (NICU). In order to minimize the negative conditions of the NICU and to support the health and comfort of the infant at the highest level, the Individualized Developmental Care (IDC) 'model was developed. One of the principles of the individualized developmental care model is collective care. Clustered care refers to the care practices that premature infants require in the NICUs, rather than giving them to the same care hour rather than spreading over time. Clustered care has positive effects such as decreasing oxygen demand in premature infants, decreasing stress reactions, increasing comfort level with decreasing

stress, decreasing the frequency of apnea, decreasing energy consumption and increasing weight gain, and affecting physiological, sensory, mental, emotional and social development positively. Nurses working in the NICU are required to provide clustered care to premature infants within the scope of IDC in line with their nursing roles. This study is thought to be useful to explain the concept of clustered care to nurses who care for premature infants supported in the NICU.

Key words: *premature infant; individualized developmental care; clustered care; NICU; nurse.*

INTRODUCTION

The premature infant is the baby who was born before the 37th gestational week and could not complete its development (World Health Organization [WHO], 2017). Premature infants born before they can complete their development bring many health problems in addition to prematurity. Premature infants have more heat loss from their body surfaces, skin is thin, absorption reflexes are not developed, and they cannot provide sufficient gas exchange with their lungs. As a result of these health problems, premature infant are supported in neonatal intensive care units (NICU).

While the intrauterine environment is safe, dark, wet, resistant to external influences, and effortless feeding is provided, the neonatal intensive care unit is noisy for premature infants, where humidity, heat and light balance cannot be provided sufficiently and there is an excess stress factor. The transition from intrauterine to extrauterine is the most sensitive and dynamic period of life for all infants. For the premature infant, this transition process and the NICU can cause transient or permanent neurological and cognitive damage, intraventricular hemorrhages, stress and many physiological problems caused by stress (Sarı & Çiğdem, 2013; Eras, Atay, Şakrucu, Bingöler, & Dilmen, 2013). In 1980s, 'Individualized Developmental Care' (IDC) model was developed in order to minimize these negative conditions of the NICU and to support the health and comfort of the infant at the highest level (Als 1982). In this study, the concept of giving clustered care in premature infants within the extend of IDC was defined and it was aimed to raise awareness of health workers about the subject.

Individualized Developmental Care Model

The Individualized Developmental Care Model aims to minimize the effects of the negative intensive care environment in high-risk neonates and is based on the application of care in a baby-centered manner and supporting the neurological and cognitive development of the premature infant (Als 1982; Kardaş Özdemir & Güdücü Tüfekçi 2012). The principles of this care model are;

- Family-centered care,
- Kangaroo care,
- Pain management,
- Providing therapeutic position,
- Replace negative stimuli of the external environment with positive stimuli,
- Non-nutritive suction,
- To give clustered care (Kardaş Özdemir & Güdücü Tüfekçi 2013; Eras et al. 2013; Tutar Güven & İşler Dalgıç, 2017; Arpacı & Altay, 2017; Turan & Erdoğan, 2018).

As a result of these practices, the stress level is reduced and the rest period that is beneficial for the infant is extended (Kardaş Özdemir & Güdücü Tüfekçi 2013). Studies with traditionally treated infants and infants receiving IDC have demonstrated beneficial effects of parameters such as withdrawal from ventilation, oxygen supplementation, weight and head circumference increase (Westrup et al. 2000). In addition, other beneficial effects of individualized developmental care include a decrease in the frequency of chronic lung disease development, a

shorter transition time to full enteral nutrition, a decrease in the incidence of necrotizing enterocolitis, a decrease in autonomic-motor, general status – attention and self-regulation functions, and a decrease in stress levels of families. Postnatally corrected second week examinations of the babies showed better neurological and behavioral results (Eras et al. 2013).
Clustered Care Concept

Clustered care, which is one of the principles of individualized developmental care practice, refers to the provision of care practices that premature infants require in the same care hours rather than spreading over time (Valizadeh, Avazeh, Bagher Hosseini, & Asghari Jafarabad, 2014). In this way, care and routine applications are collected at the same care time. In the literature, the concept of clustered care giving has been explained by the clustering of nursing care activities (Turan & Erdoğan, 2018) and the clustered implementation of care (Pereira et al., 2013).

The main purpose of clustered care is to allow the infant to rest longer without being disturbed with minimal touch (Cabral & Velloso, 2014; Valizadeh et al., 2014). It was found that preterm infants who had 24-hour observation in the NICU were treated with an average of 2 hours and 26 minutes (Pereira et al., 2013). For this purpose, the care required by each infant is determined individually and these care practices are applied clusteredly according to the infant's tolerance. Individually planned care practices for the premature infant include nutritional, hygiene requirements, kangaroo care, proper positioning and regulation of stimuli. In addition to the care applications, the routine applications of the NICU, such as medicine applications, obtaining vital signs, head circumference, umbilical circumference measurement, and weight monitoring are also considered within the scope of clustered care (Çalık, Işık, & Tufan, 2015; Turan & Erdoğan, 2018). If the infant shows typical stress response, such as color pallor, apnea, hypotonia, the care is interrupted in accordance with IDC in clustered care. Thus, the baby's neurological development is supported (Kardaş Özdemir & Güdücü Tüfekçi 2012; Sarı & Çiğdem, 2013).

Positive effects of clustered care on preterm infants such as decreased need for oxygen, negative stress and decreased behavioral responses of this stress have been reported (Valizadeh et al., 2014; Turan & Erdoğan, 2018). Clustered care planned and applied to the baby individually, the baby's frequent disturbance is prevented. Thus, the infant's comfort level can be increased by protecting the infant from unnecessary stressors, reducing the stress level and extending the rest period. It is reported that the infant's comfort facilitates adaptation to the extrauterine environment and positively affects physiological, sensory, mental, emotional and social development (Sarı & Çiğdem, 2013; Aydın & Karaca Çiftçi, 2015; Küçük Alemdar & Güdücü Tüfekçi, 2015). It has been reported that apnea frequency, decrease in mean heart rate and increase in weight gain have been reported in premature infant who have less touching and resting and sleeping time by performing clustered care applications (Holsti, Grunau, Whifield, Oberlander, & Lindh, 2006, Valizadeh et al., 2014). It was stated that the weight gain and hospitalization times of the infants who were treated with therapeutic touch and less touched were shorter (Leonard, 2008). In addition, in some studies, it was thought that prolonged sleep time as a result of the clustered application of care may be associated with excessive energy consumption in the care and combining stressful procedures (Holsti et al. 2006). In the study by Holsti et al.(2007), ACTH and cortisol levels of premature infants were compared in response to clustered care. There was no significant relationship between ACTH and cortisol in premature infants at ≤ 28 gestational weeks compared to gestational week, but there was a significant difference in 29–31 gestational week babies.

Nursing Initiatives to be Applied in Clustered Care

Nutrition Practices

Infants are supported by non-nutritive breastfeeding to improve sucking behavior and regulate the digestion of enteral nutrients until suckling and swallow coordination are achieved.

In non-nutritive sucking, the goal is not to feed the infant, but to support the oral transition to full feeding (Eras et al., 2013; Aytekin, Albayrak, Küçükoğlu, & Caner, 2014).

Applications for Hygiene Requirements

The main purpose of skin care in premature infant is to reduce traumatic injuries, to prevent dryness, to avoid contact with toxins, to support immature protective function, to protect skin integrity. Initiatives for this purpose; massage, oil to protect the moisture of the skin, vernix absorption after bathing can be counted as (Arısoy, 2010; Karabulut, 2011; Cimete et al. 2018).

Therapeutic Positioning

The fetal position, which is one of the therapeutic positions, is defined as the process of placing the baby in the nest and closing the body close to the midline by keeping the baby's upper and lower extremities flexed by hand. The baby may be given lateral, supine or prone position (Çağlayan & Balcı, 2014; Tutar Güven & İşler Dalgıç 2017).

Ensuring Mother-Baby Attachment

The unit should have appropriately arranged mother-baby rooms, family training rooms and family-centered care (Salihoğlu et al., 2011; Gözen & Aykanat Girgin, 2017; Conk et al. 2018).

Correction of NICU Conditions

Unit format; number of employees, bed head area, unit operation should be arranged in a plan that includes issues such as. NICU temperature 22-26 C and humidity should be between 30-60%. In order to reduce noise in the intensive care environment; all measures should be taken such as talking at low bed and soft tone, closing the incubator lids slowly, muting alarms, designing rooms to absorb noise, and ensuring that instant sound does not exceed 45-60 dB / h. There should be separate rooms for all infectious measures, hand washing area, clean and dirty tank, self-closing doors, effective negative air pressure and regular ventilation, and all areas used should be suitable for frequent cleaning (Salihoğlu et al. 2011; Sarı & Çiğdem, 2013).

Stress Management

To ensure the comfort of the premature baby, after the stressful procedures, to hold the baby, to provide skin contact, to talk with soft tone, to shake gently, to make baby massage or loose swaddle, oral feeding together with stressful procedures, to use the pacifier to reduce the tension of the baby provides relaxation (Sarı & Çiğdem, 2013; Cimete et al.2018).

Pain Management

Pain in the NICU should be assessed using appropriate scales. The use of pharmacological (sedation, analgesics) and non-pharmacological methods (swaddling, therapeutic touch, positioning, infant massage, pacifier, kangaroo care, oral sucrose administration) in the management of pain is important for increasing the comfort level of premature infants (Çalık, Işık, & Tufan, 2015; Turan & Erdoğan, 2018; Büyükgönenç ve Kılıçarslan Törüner 2018).

Supporting Sleep

Sound, heat, light and noise factors should be regulated effectively to improve sleep quality. Newborn day and night sleep periods should be supported. Adequate rest time should be ensured with minimal touch and clustered care (Küçük, 2015).

CONCLUSIONS AND RECOMMENDATIONS

Clustered care refers to the application of individually planned care for the premature baby to the same time as the baby's tolerance. The main purpose of clustered care is to allow the baby to rest longer without being disturbed. Clustered care has positive effects such as decreasing oxygen demand in preterm infants, decreasing stress reactions, increasing comfort level with decreasing stress, decreasing the frequency of apnea, decreasing energy consumption, increasing weight gain, and improving physiological, sensory, mental, emotional and social development. Regulation of nutrition, fulfillment of hygiene requirements, providing therapeutic position, ensuring mother-infant attachment, pain, stress management, touch control, regulation of unit conditions can be evaluated in this context. Nurses working in the

NICU are required to provide clustered care to premature infant within the extent of individualized developmental care. Clustered care given within the scope of individualized developmental care is inadequate. This study will be useful for explaining the concept of clustered care to nurses who care for premature infants supported in the NICU, and it is necessary to carry out studies with high level of evidence of clustered care.

References

- 1- Als H.(1982).Toward a synactive theory of development: promise for the assessment and support of infant individuality. *Infant Mental Health Journal*. 3, 229-243.
- 2- Arısoy, E. S. (2010). Yenidoğan sepsisi: tanı ve tedavi yaklaşımları. *ANKEM Derg*, 24(2), 168–175.
- 3- Arpacı, T., Altay, N.(2017). Yenidoğan yoğun bakım ünitelerinde bireyselleştirilmiş gelişimsel bakım: güncel yaklaşımlar. *Türkiye Klinikleri Hemşirelik Bilimleri*, 9(3):245-254.
- 4- Aydın, D. Karaca Çiftçi, E. (2015). Yenidoğan yoğun bakım hemşirelerinin preterm yenidoğanlara uygulanacak terapötik pozisyonlar hakkındaki bilgi düzeyi. *Güncel Pediatri*, 13(1), 21–30. <https://doi.org/10.4274/jcp.26349>.
- 5- Aytekin, A., Albayrak, E. B., Küçükoglu, S. Caner, İ. (2014). Erken doğmuş bebeklerde kaşık ve biberonla beslenme yöntemlerinin tam anne memesine geçiş süreci ve emme başarısı üzerine etkisi. *Türk Pediatri Arsivi*, 49(4), 307–313. <https://doi.org/10.5152/tpa.2014.1904>
- 6- Büyükgönenç L, Kılıçarslan Törüner E. (2018). Çocukluk yaşlarda ağrı ve hemşirelik yönetimi. *Pediatri Hemşireliği içinde*. Ed: Conk Z, Başbakkal Z, Bal Yılmaz H, Bolışık B. Ankara:Akademisyen.
- 7- Cabral, L. A.,Velloso, M. (2014). Comparing the effects of minimal handling protocols on the physiological parameters of preterm infants receiving exogenous surfactant therapy. *Brazilian Journal of Physical Therapy*, 18(2), 152–164. <https://doi.org/10.1590/s1413-35552012005000154>.
- 8- Cimete G. Kuşuoğlu S. Dede Çınar N. (2018) Çocuk, hastalık ve hastane ortamı. *Pediatri Hemşireliği içinde*. Ed: Conk Z, Başbakkal Z, Bal Yılmaz H, Bolışık B. Ankara:Akademisyen. Conk Z, Başbakkal Z, Yardımcı F.(2018). Çocuk Sağlığına Genel Bakış. *Pediatri Hemşireliği içinde*. Ed: Conk Z, Başbakkal Z, Bal Yılmaz H, Bolışık B. Ankara:Akademisyen.
- 9- Çağlayan, N., Balcı, S. (2014). Preterm yenidoğanlarda ağrının azaltılmasında etkili bir yöntem: cenin pozisyonu. *Florence Nightingale Hemşirelik Dergisi*, 22(1), 63. <https://doi.org/10.17672/fnhd.28974>
- 9 Çalık, C., Işık, F.,Tufan, A. (2015). Yenidoğan yoğun bakım ünitelerinde çalışan hemşirelerin kanguru bakımı uygulama durumları ve engeller. *Hemşirelikte Araştırma Geliştirme Dergisi*, 9557(1), 1–9.
- 10 Eras, Z., Atay, G., Şakrucu, E. D., Bingöler, E. B.,Dilmen, U. (2013). Yenidoğan yoğun bakım ünitesinde gelişimsel destek. *Şişli Etfal Hastanesi Tıp Bülteni The Medical Bulletin of Sisli Hospital*, (3), 97–103. <https://doi.org/10.5350/semb2013470301>.
- 11 Gözen, D., Aykanat Girgin, B. (2017). Preterm bebeklerde oral beslenmeyi destekleyici kanıtla dayalı girişimler. *Clinical and Experimental Health Sciences*, 7(4), 171–174. <https://doi.org/10.5152/clinexphealthsci.2017.327>.
- 12 Holsti, L., Grunau, R. E., Whifield, M. F., Oberlander, T. F.,Lindh, V. (2006). Behavioral responses to pain are heightened after clustered care in preterm infants born between 30 and 32 weeks gestational age. *Clinical Journal of Pain*, 22(9), 757–764. <https://doi.org/10.1097/01.ajp.0000210921.10912.47>.
- 13 Holsti, L., Weinberg, J., Whitfield, M. F. ve Grunau, R. E. (2007). Relationships between adrenocorticotrophic hormone and cortisol are altered during clustered nursing care in preterm infants born at extremely low gestational age. *Early Human Development*, 83(5), 341–348. <https://doi.org/10.1016/j.earlhumdev.2006.08.005>.
- 14 Karabulut, A. A. (2011). Yenidoğanda deri fizyolojisi ve topikal ilaç kullanımı. *Turkderm Deri Hastalıkları ve Frengi Arsivi*, 45(SUPPL. 2), 60–67. <https://doi.org/10.4274/turkderm.45>.
- 15 Kardeş Özdemir, Funda; Güdücü Tüfekçi, F. (2012). Bireyselleştirilmiş gelişimsel bakım uygulamalarının prematürelere fizyolojik belirtiler büyüme ve hastanede kalış sürelerine etkisi.Doktora tezi.Atatürk Üniversitesi. Erzurum.

- 16 Küçük Alemdar, D., Güdücü Tüfekci, F. (2015). Prematüre bebek konfor ölçeği'nin türkçe geçerlilik ve güvenilirliği. *Hemşirelikte Eğitim ve Araştırma Dergisi*, 12(2), 142–148. <https://doi.org/10.5222/head.2015.142>.
- 17 Küçük, S. (2015). Yenidoğan yoğun bakım ünitelerinde kaliteli uyku. *Dokuz Eylül Üniversitesi Hemşirelik Fakültesi Elektronik Dergisi* 8(3), 214–217.
- 18 Leonard, J. (2008). Exploring neonatal touch. *Wesley J Psychol*, 3, 39–47.
- 19 Pereira, F. L., de Góes, F. dos S. N., Fonseca, L. M. M., Scochi, C. G. S., Castral, T. C., Leite, A. M. (2013). Handling of preterm infants in a neonatal intensive care unit. *Revista Da Escola de Enfermagem*, 47(6), 1272–1278. <https://doi.org/10.1590/S0080-623420130000600003>.
- 20 Salihoğlu, Ö., Akkuş, C. H., Hatipoğlu, S. (2011). Yenidoğan yoğun bakım ünitesi standartları. *Medical Journal of Bakirkoy*, 7(2), 45–51. <https://doi.org/10.5350/BTDMJB201107201>
- 21 Sarı, H. Y., Çiğdem, Z. (2013). Gestasyon haftalarına göre bebeğin gelişimsel bakımının planlanması. *Dokuz Eylül Üniversitesi Hemşirelik Fakültesi Elektronik Dergisi*, 6(1), 40–48.
- 22 Turan, T., Erdoğan, Ç.(2018). Yenidoğan yoğun bakım ünitesindeki prematüre bebeğin gelişiminin desteklenmesi. *JAREN*, 2018;4(2):127-132.
- 23 Tutar Güven, Ş., İşler Dalgıç, A. (2017). An individualized supportive developmental care program developed for premature newborns. *International Refereed Journal of Gynaecological Diseases and Maternal and Child Health*, 9(0), 41–61. <https://doi.org/10.17367/jacsd.2017.1.004>.
- 24 Valizadeh, L., Avazeh, M., Bagher Hosseini, M. ve Asghari Jafarabad, M. (2014). Comparison of clustered care with three and four procedures on physiological responses of preterm infants: randomized crossover clinical trial. *Journal of Caring Sciences*, 3(1), 1–10. <https://doi.org/10.5681/jcs.2014.001>.
- 25 Westrup B, Kleberg A, Von Eichwald K, Stjernqvist K, Lagercrantz H. (2000). A randomized, controlled trial to evaluate the effects of the newborn individualized developmental care and assessment program in a swedish setting. *Pediatrics*.105(1).
World Health Organization (WHO). Preterm Birth. Erişim adresi: <http://www.who.int/mediacentre/factsheets/fs363/en/> (Erişim tarihi: 10.10.2019).