

การศึกษาความเป็นไปได้ของกิจกรรมความไวในการตอบสนอง ของบิดามารดาต่อสัมพันธภาพและความสามารถตนเองของมารดา และบิดาของทารกเกิดก่อนกำหนด

A Feasibility Study of the Parental Sensitivity Intervention on Attachment and Self-Efficacy of Mothers and Fathers of Preterm Infants

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บทคัดย่อ

การวิจัยแบบก่อนการทดลองวัดผลก่อน หลัง และระยะติดตามนี้มีวัตถุประสงค์เพื่อศึกษาความเป็นไปได้ของกิจกรรมความไวในการตอบสนองของบิดามารดาต่อสัมพันธภาพและความสามารถตนเองในการดูแลทารกเกิดก่อนกำหนดของมารดาและบิดา ผู้เข้าร่วมวิจัยคัดเลือกแบบเจาะจง คือบิดา มารดา และทารกเกิดก่อนกำหนดจำนวน 4 ชุด ทารกเข้ารับการรักษาในหอผู้ป่วยทารกแรกเกิดป่วยในโรงพยาบาลแห่งหนึ่งในประเทศไทย กลุ่มตัวอย่างได้รับกิจกรรมความไวในการตอบสนองทั้งหมดมี 4 ขั้นตอน ขั้นตอนละ 60-90 นาที เครื่องมือที่เก็บรวบรวมข้อมูลประกอบด้วยแบบสอบถามความผูกพันหลังคลอด และแบบสอบถามความเชื่อมั่นของมารดา/บิดา มีค่าความเชื่อมั่นเท่ากับ 0.73 และ 0.75 ตามลำดับ วัดผล 3 ครั้งคือก่อนให้การทดลอง หลังเสร็จสิ้นการทดลอง และระยะติดตามวิเคราะห์ข้อมูลโดยใช้สถิติเชิงพรรณนา และการทดสอบพรีดีแมน

ผลการวิจัยพบว่าภายหลังเสร็จสิ้นการทดลองและระยะติดตาม สัมพันธภาพระหว่างมารดากับทารก ความสามารถของตนเองของมารดา สัมพันธภาพระหว่างบิดากับทารก และความสามารถของตนเองของบิดา มีคะแนนดีกว่าก่อนการทดลอง ($p < .05$). ผลการวิจัยนี้แสดงให้เห็นว่ากิจกรรมความไวในการตอบสนองของบิดามารดาเหมาะสมและมีความเป็นไปได้สำหรับนำไปปฏิบัติในอนาคต

คำสำคัญ: สัมพันธภาพ, ความเป็นไปได้, ความไวในการตอบสนองของบิดามารดา, ทารกเกิดก่อนกำหนด, การรับรู้ความสามารถของตนเอง

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Abstract

This pre-experimental design with pretest-posttest and follow-up measures aimed to determine the feasibility of the parental sensitivity intervention by comparing mother-infant attachment, maternal self-efficacy, father-infant attachment and paternal self-efficacy among mothers and fathers in the care of preterm infants. A pre-experimental design with pretest, posttest and follow-up measures was employed. The participants were recruited through a purposive sampling method with four triads of mother, father and preterm infants who were admitted to a sick newborn ward at a hospital in Thailand. The research instruments for data collection included the Postpartum Bonding Questionnaire and the Maternal/Paternal Confidence Questionnaire with Cronbach's alpha reliability of 0.73 and 0.75, respectively. The parental sensitivity intervention contained four sessions with 60-90 minutes per session. Descriptive statistics and Friedman test were used to analyze the data.

The results found that a significant difference over the three time measures of the outcome variables. Mother-infant attachment, mother's self-efficacy, father-infant attachment and father's self-efficacy at posttest and follow-up periods were better than those at pretest ($p < .05$). These findings indicate that the parental sensitivity intervention would be appropriate and feasible for further implementation.

Keywords: attachment, feasibility, parental sensitivity, preterm infants, self-efficacy

Introduction

The medical advancements of the modern world have tremendously increased chances of survival in low birth weight and premature babies. Although the Neonatal Intensive Care Unit (NICU) and Sick Newborn (SNB) for hospitalization are necessary for survival, the aforementioned situation could have a negative impact on the attachment between mothers, fathers and preterm infants due to immediate separation after the baby's birth.^{1,2} Moreover, nursing staff do not often have sufficient time to facilitate or promote a relationship between parents and infants.³ Restrictions and policies concerning parent visiting in the NICU or SNB can also limit closeness between parents and newborn babies.⁴ Moreover, these infants have a long hospital stay from birth until discharge, which affects the quality of mother-infant interactions.^{5,6}

Attachment is a mutual relationship in which the emotional aspect outweighs physical development in terms of importance.⁷ Parent infant

attachment is the primary relationship between primary child caregivers and infants after birth.⁸ The parental attachment is a gradual process that occurs over weeks and months. Usually, mother is a primary care giver to an infant. In addition, family members and nurses would support for mother's role also.^{9,10}

However, most fathers express their feelings of pride and satisfaction as they begin to develop a strong attraction toward their children.¹¹ In general, fathers in Thailand tend to be less alert to provide direct child care than mothers. Nevertheless, fathers nowadays are becoming more active in child caring activities.^{12, 13} Therefore, the paternal role in parenting has increased. Sensitivity is one of the major influencing factors in the interaction between parents and infants. Thus, effective mother-infant and father-infant relationships need to be promoted and parents should develop sensitivity in appropriately responding to their infants' cues, which will help foster a strong parent-infant attachment.¹⁴

Self-efficacy of parents in giving care to infant is defined as parents' beliefs and expectations about the ability to be a successful parent and competence within the realm of parenting in positively influencing the development and behavior of their child.^{15, 16} At the same time, maternal self-confidence is defined as the mother's perception of her own ability to take care of the infant and understand his/her needs.¹⁷ If a mother lacks self-efficacy or self-confidence in the care for her infant in the early postpartum period, it may affect the bonding between the mother and the baby after birth. Furthermore, mothers' feelings of confidence in their ability to care for their infants are necessary for a healthy adaptation to parenthood and a positive mother-infant relationship.

Previously, there were several experimental interventions to promote parent-infant attachment namely massage therapy, kangaroo care, multi-modality sensory stimulation, and providing knowledge.¹⁸⁻²² While most of those interventions have been successful in promoting attachment they were often thwarted when infants had complex medical conditions. It is interesting that the previous interventions for promoting attachment and self-efficacy were mostly focused on maternal side while there were just a few on paternal.^{19, 23-27} As such by intervening with both parents to enhance attachment and self-efficacy is necessary. Therefore, this feasibility study was designed to provide knowledge and skill to father and mother. The aim of this pilot study is to promote the attachment between mother and infant, father an infant, and mother's and father's self-efficacy in the care of preterm infants.

Purposes of the Study

This study aimed to determine the feasibility of the parental sensitivity intervention by comparing mother-infant attachment, maternal self-efficacy, father-infant attachment and paternal self-efficacy among mothers and fathers in the care of preterm infants.

Conceptual Framework for the Study

The conceptual framework of this study based on Bowlby's attachment theory.⁷ Infants develop affectional ties with parents or primary caregivers and respond to their presence and absence in their quiet or alert states by seeing or gazing directly at the parents.⁷ In addition, the major influencing factors for an effective mother-infant interaction that promote a secure mother-infant attachment are application responses on sensitivity.¹⁴ However, to construct an effective mother-infant attachment, mothers must be able to read and understand the infant's cues accurately, interpret infant wants precisely and respond promptly and appropriately to the infant's needs.²⁷ Moreover, self-efficacy affects a person's behavior because a person's knowledge and capabilities cannot induce a successful performance, unless the person is confident in applying knowledge and capabilities to practice. Therefore, the parental sensitivity intervention applied the idea of self-efficacy for increased confidence of parents to interaction with their infants in which the parents and infants contribute to father-infant and mother-infant attachment.

Methods

A pre-experimental design with pretest-posttest and follow-up measures was used to determine the parental sensitivity intervention on mother-infant attachment and mother's self-efficacy, as well as father-infant attachment and father's self-efficacy in the care of preterm infants.

The target population in this study was four triads of mothers, fathers and preterm infants who were admitted to a sick newborn ward at a hospital in Thailand. The inclusion criteria were parents had to be the biological mothers and fathers of preterm infants, live together, be able to communicate in Thai and reside in a municipality, and preterm infants had

to have gestational ages of less than 37 weeks, be born as a singleton and have stable vital signs with no requirement for respiratory support. The exclusion criteria included infants that required ventilator or respirator support during the implementation.

Ethical Considerations

This study was approved by the Faculty Ethics Committee of the Faculty of Nursing, Burapha University, Thailand (No.07-04-2561) on June 12, 2018, and the hospital (No.74/61/O/h3) on September 4, 2018. The participants were informed about the study objectives and processes, confidentiality, risks, benefits and their rights. They were able to ask questions and withdraw from the study at any time. Consent and agreements were obtained from parents on behalf of their babies.

Research Instruments

1. A demographic questionnaire was used to measure the participants' characteristics, including, age of mother and father, having a preterm baby before, family income as well as infant age, gender, gestational age at birth, and type of delivery.

2. The Postpartum Bonding Questionnaire (PBQ) developed by Brockington et al.²⁸ The PI was granted permission by the instrument developer to have the instrument translated into Thai and

administered to the participants in the study. The PBQ was used to measure mother-infant and father-infant attachment with 25 statements. The total score ranged from 0-125 points. The higher scores reflected a problematic mother-infant or father-infant attachment. In this study, Cronbach's alpha reliability was 0.73.

3. The Maternal Confidence Questionnaire (MCQ) developed by Parker & Zahr²⁹ was used to measure maternal and paternal self-efficacy in interacting and caring for preterm infants. The PI was granted permission to use and translate this questionnaire by the owner of the instrument. The questionnaire has been used to investigate the efficacy of intervention in the neonatal intensive care unit in mothers and infants. The scale consists of 14 items. Each item is rated on a 5-point rating scale. The total score was within a range of 14-70 points. The higher scores indicate high self-efficacy. In this study, Cronbach's alpha reliability was 0.75.

4. The parental sensitivity intervention was developed by the PI based on the theory of attachment which advocates the importance of a reciprocal infant-mother relationship for healthy child development as well as a state-modulation (SM) intervention.²⁷ It consisted of four sessions. Each session took approximately 40-60 minutes. Details were shown in Table 1.

Table 1 The parental sensitivity intervention

Day 1	Session 1: knowledge about characteristics of preterm infant	The PI provided knowledge about preterm infant characteristics, infant cues and behavior, and parents' appropriate responsiveness to the participants by using a Power Point presentation and a handbook, both of which can be accessed at: http://www.premiebabies101.com/ , https://www.hopkinsmedicine.org/howard_county_general_hospital/services/mothers_and_babies/taking_baby_home.html
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Session 2: Responding to
infant's cues

The PI educated the participants on how to observe, understand and respond to infant cues properly by showing video clips (each clip took approximately 5-6 minutes). The video used in this session can be accessed at: <https://www.youtube.com/watch?v=ve7yXXRaYT8> and https://www.youtube.com/watch?v=upQ1_jLt54M. After watching the video, the parents offered feedback on the video for encouragement. In addition, the PI discussed the video content with the parents.

Day 2 **Session 3:** Demonstration
and practice

This session allowed the fathers and mothers to be involved in their infants' routine activities in real situations. The PI assessed the participants' reading and responding to the infants' cues by observing the interactions of fathers and mothers with their babies, discussed reciprocal behaviors between parents and their babies with the participants and provided suggestions and recommendations on how to read and respond appropriately.

Day 3 **Session 4:** Conclusions

This session reviewed all of the contents provided from the beginning. In addition, the PI answered all questions and explained until the participants were satisfied and clearly understood.

Data Collection Procedures

The PI met with the supervisor and the head nurses of the SNBs and explained about the research objectives, the data collection procedures, risks and benefits of the study. After agreement to participate had been obtained and informed consent forms had been signed, the participants were asked to complete the demographic data questionnaire, the PBQ and the MCQ (Pre-test, Day 0, T 1) before commencing with the study. After Session 4, the parents in the experimental group were asked to complete the PBQ and the MCQ again (Day 3, T2). The parents were also asked to complete the PBQ and the MCQ for a third time (Day 7, T3). However, if a baby was allowed to be discharged from the hospital, a telephone interview was employed for data collection at this time. The PI

evaluated the outcomes for the control group at the same time as the experimental group.

Data Analysis: Descriptive statistics were used to describe the characteristics of the sample. The Friedman test for repeated measures compared the differences in effects pre- and post-intervention across three-time measures. The Dunn-Bonferroni post hoc test examined for differences in treatment between paired time periods.

Results

The participants were 4 triads of mother, father and their preterm infant. The mean age of the mothers was 32.25 years (SD + 5.50), and the mean age of the fathers was 34.75 years (SD + 3.40). All parents had not had a preterm baby before and their

family incomes were more than 20,000 Thai baht per month. All preterm infants were boys and born with normal delivery. The preterm infants had their mean post conceptual age of 35.75 weeks (SD + 1.90), and mean age of 6.25 days (SD + 2.22).

The Friedman tests were performed to compare all outcome variables (mother-infant

attachment, mother’s self-efficacy, father-infant attachment and father’s self-efficacy) among 3-time measures. The results found that there were significantly different ($p < .05$) (Table 2). Subsequently, Dunn-Bonferroni post hoc tests were carried out to follow-up the significant differences among 3-time measures for each outcome.

Table 2 Comparisons of outcome variables at three-time measures by using Friedman test (n = 4).

Variable	Time	M (SD)	χ^2	df	Sig
Mother-infant attachment	1	33.50a (11.09)	6.533	2	.038*
	2	19.75 (7.18)			
	3	17.50b (5.97)			
Mother’s self-efficacy	1	33.00a (5.72)	6.615	2	.037*
	2	53.25 (8.50)			
	3	57.50b (1.92)			
Father-infant attachment	1	32.75a (8.46)	7.429	2	.024*
	2	19.25b (4.27)			
	3	20.75 (2.87)			
Father’s self-efficacy	1	31.50a (8.02)	6.533	2	.038*
	2	52.75 (6.13)			
	3	52.50b (8.43)			

* $p < .05$, the pairs with different characteristics (a, b) were significant different

Dunn-Bonferroni post hoc tests were carried out to follow-up the significant differences among 3-time measures for each outcome. For mother, the mean score of mother-infant attachment on Day 7 (T3) was significantly lower (better) than that on Day 1 (T1) ($t = 1.625$, $p < .05$) while between T3 vs. T2 and T2 vs. T1 were not different. The mean score of mother’s self-efficacy on Day 7 (T3) was also significantly higher than that on Day 1 (T1) ($t = -1.625$, $p < .05$), while between T3 vs. T2 and T2 vs. T1 were not different. These could be interpreted that mother-infant attachment and mother’s self-efficacy in caring for their preterm infants after receiving the parental sensitivity intervention are better than before.

For fathers, Dunn-Bonferroni post hoc tests were also carried out to follow-up. The mean score of father-infant attachment on Day 3 (T2) was significantly lower (better) than that on Day 1 (T1) ($t = 1.750$, $p < .05$) while between T3 vs. T2 and T3 vs. T1 were not different. The mean score of father’s self-efficacy on Day 7 (T3) was also significantly higher than that on Day 1 (T1) ($t = -1.625$, $p < .05$), while between T3 vs. T2 and T2 vs. T1 were not different. These could be interpreted that father-infant attachment and father’s self-efficacy in caring for their preterm infants after receiving the parental sensitivity intervention are greater than before.

Discussion

Mother-infant attachment was found to be significantly different between the times. There were significant differences between Day 0 (T1) and Day 7 (T3). Moreover, the mean scores for mother-infant attachment on Day 0 (T1) were higher than those on Day 3 (T2), and Day 7 (T3). Day 3 (T2) was higher than the scores on Day 7 (T3). The mother-infant attachment scores might have resulted from the effectiveness of the parental sensitivity intervention in improving mother-infant attachment over time. After mothers received teaching and demonstration for preterm infant care, they had greater mother-infant attachment. The findings were congruent when parental education related to understanding of infant cues and infant behavior were provided.³⁰⁻³²

Maternal self-efficacy was found to be significantly different between the times. Moreover, there were significant differences between Day 0 (T1) and Day 7 (T3) which could be explained by the fact that the mothers who received the intervention about teaching and demonstration for preterm infant care had more confidence. At the same time, the mean scores for maternal self-efficacy on Day 7 (T3) were higher than those on Day 0 (T1), and Day 3 (T2). Day 3 (T2) was higher than the same scores on Day 0 (T1). This finding is congruent with a study which reported that formal support or teaching improved maternal self-confidence.²⁶

Father-infant attachment was found to be significantly different between the times.

There were significant difference between Day 0 (T1) and Day 3 (T2). Moreover, the mean scores for father-infant attachment on Day 0 (T1) were higher than those on Day 3 (T2), and Day 7 (T3). The finding can be explained in that the knowledge and skills fathers received made them increase their sensitivity to their infants' cues. This study corresponded with previous studies reporting that

demonstration, teaching about infant care and using video feedback could improve early father-infant interaction and increase understanding of infants' thoughts and feelings.^{23, 33}

Paternal self-efficacy was found to be significantly different between the times. There were significant differences between Day 0 (T1) and Day 7 (T3). Moreover, there were approaching to significant differences between Day 0 (T1) and Day 3 (T2). The findings can be explained in that the knowledge about preterm infant care and practice in real situations that fathers received made them increase their skills. The findings of this study also corresponded with a previous study that using a parent educational program could help fathers increase knowledge about infant behavior and understand their infant better.³⁴ Furthermore, the knowledge and experiences the fathers received could increase paternal self-efficacy and confidence in interactions with infants.³²

Conclusion and Implications

Findings from this feasibility study suggest that this intervention could be an effective approach to enhance mother-infant attachment and mother's self-efficacy, as well as father-infant attachment and father's self-efficacy in the care of preterm infants. Thus, further implementation utilizing the parental sensitivity intervention with a larger sample would be appropriate and feasible.

References

1. Forcada-Guex, M., Pierrehumbert, B., Borghini, A., Moessinger, A., & Muller-Nix, C. Early dyadic patterns of mother-infant interactions and outcomes of prematurity at 18 months. *Pediatrics*. 2006; 118(1): 107-114.

2. Muller-Nix, C., Forcada-Guex, M., Pierrehumbert, B., Jaunin, L., Borghini, A., & Ansermet, F. Prematurity, maternal stress and mother-child interactions. *Early human development*. 2004; 79(2): 145-158.
3. Grant, K. A., McMahon, C., & Austin, M. P. Maternal anxiety during the transition to parenthood: a prospective study. *Journal of affective disorders*. 2008; 108(1): 101-111.
4. Greisen, G., Mirante, N., Haumont, D., Pierrat, V., Pallas-Alonso, C. R., Warren, I., & Cuttini, M. Parents, siblings and grandparents in the Neonatal Intensive Care Unit A survey of policies in eight European countries. *Acta paediatrica*. 2009; 98(11): 1744-1750.
5. Honda, M., Som, R., Seang, S., Tung, R., & Iwamoto, A. One year outcome of high-risk newborn infants discharged from the neonatal care unit of the National Maternal and Child Health Center in Cambodia. *Heliyon*, 2019; 5(4): e01446.
6. McInnes, R. J., & Chambers, J. Infants admitted to neonatal units-interventions to improve breastfeeding outcomes: a systematic review 1990-2007. *Maternal & child nutrition*. 2008; 4(4): 235-263.
7. Bowlby, J. *Attachment*. New York: Basic book; 1969.
8. Klaus, M. H., & Kennell, J. H. *Parent-infant bonding*. CV Mosby; 1982.
9. Kleebpan, S., Phahuwatanakorn, W., Yusamran, C., & Putdivarnichapong, W. Factors Influencing Parental Competence in First-Time Postpartum Mothers. *Journal of The Royal Thai Army Nurses*. 2019; 20(2): 140-149. (in Thai)
10. Yakasem, P., Chaimongkol, N., & Pongjaturawit, Y. Experience of becoming a Thai early adolescent mother. *Journal of The Royal Thai Army Nurses*. 2018; 19(3): 89-96. (in Thai)
11. Littleton, L. Y., & Engebretson, J. C. *Maternal, Neonatal and women's Health Nursing*. Delmar, Thomson Learning; 2002.
12. Satipan, C. *Marital Relationship, Father-infant Attachment and Father Involvement in Postpartum Period [Thesis]*: Chiangmai University; 2014. (in Thai)
13. Tapanya, S. *Attributions and attitudes of mothers and fathers in Thailand*. *Parenting*. 2011; 11 (2-3): 190-198. (in Thai)
14. Shin, H., Park, Y-J., & Kim, M. J. Predictors of maternal sensitivity during the early postpartum period. *Journal of Advanced Nursing*. 2006; 55(4): 425-434.
15. Sevigny, P. R., & Loutzenhiser, L. Predictors of parenting self-efficacy in mothers and fathers of toddlers. *Child: Care, Health and Development*. 2010; 36: 179-189.
16. Coleman, P. K., & Karraker, K. H. Maternal self-efficacy beliefs, competence in parenting, and toddlers' behavior and developmental status. *Infant Mental Health Journal: Official Publication of the World Association for Infant Mental Health*. 2003; 24(2): 126-148.
17. Badr, L. K. Further psychometric testing and use of the Maternal Confidence Questionnaire. *Issues in Comprehensive Pediatric Nursing*. 2005; 28(3): 163-174.
18. Ahn, H. Y., Lee, J., & Shin, H. J. Kangaroo care on premature infant growth and maternal attachment and post-partum depression in South Korea. *Journal of tropical pediatrics*. 2010; 56(5): 342-344.
19. Chen, E. M., Gau, M. L., Liu, C. Y., & Lee, T. Y. Effects of Father-Neonate Skin-to-Skin Contact on Attachment: A Randomized Controlled Trial. *Nursing research and practice*. 2017.

20. Holditch-Davis, D., White-Traut, R. C., Levy, J. A., O'Shea, T. M., Geraldo, V., & David, R. J. Maternally administered interventions for preterm infants in the NICU: Effects on maternal psychological distress and mother-infant relationship. *Infant Behavior and Development*. 2014; 37(4): 695-710.
21. Moore, E. R., Anderson, G. C., Bergman, N., & Dowswell, T. Early skin-to-skin contact for mothers and their healthy newborn infants. *Cochrane Database Syst Rev*. 2012; 5(5).
22. Sunanta, S., Yusamran, C., & Phahuwatanakorn, W. Effect of Providing Knowledge and Support Primiparous Adolescent Mother and Grandmother on Maternal Role Attainment. *Journal of The Royal Thai Army Nurses*. 2016; 17(2): 125-134. (in Thai)
23. Promneramit P. The effects of the paternal role promotion program on paternal-infant attachment and paternal role adaptation for first-time fathers. [Thesis]: Mahidol University; 2005. (in Thai)
24. Shorey, S., He, H. G., & Morelius, E. Skin-to-skin contact by fathers and the impact on infant and paternal outcomes: an integrative review. *Midwifery*. 2016; 40: 207-217.
25. Varela, N., Dclinsky, P. M., Tessier, R., & Charpak, N. Indian Fathers and Their Premature Baby- An Early Beginning: A Pilot Study of Skin-to-Skin Contact, Culture and Fatherhood. *Fathering*. 2014; 12(2): 211.
26. Yang, H. L., Chen, Y. C., Mao, H. C., Gau, B. S., & Wang, J. K. Effect of a systematic discharge nursing plan on mothers' knowledge and confidence in caring for infants with congenital heart disease at home. 2004; 103(1): 47-52.
27. Kusanagi, M., Hirose, T., Mikuni, K., & Okamitsu, M. Effect of early intervention using state modulation and cue reading on mother-infant interactions in preterm infants and their mothers in Japan. *Journal of medical and dental sciences* 2011; 58(3): 89-96.
28. Brockington, I. F., Oates, J., George, S., Turner, D., Vostanis, P., Sullivan, M & Murdoch, C. A screening questionnaire for mother-infant bonding disorders. *Archives of Women's Mental Health*. 2001; 3(4): 133-140.
29. Parker, S., & Zahr, L. K. The maternal confidence questionnaire. Boston, MA: Boston City Hospital; 1985.
30. Bostanabad, M. A., Areshtanab, H. N., Balila, M., Jafarabadi, M. A., & Ravanbakhsh, K. Effect of a Supportive-Training Intervention on Mother-Infant Attachment. *Iranian Journal of Pediatrics*. 2017; 27(6).
31. Chung, F. F., Wan, G. H., Kuo, S. C., Lin, K. C., & Liu, H. E. Mother-infant interaction quality and sense of parenting competence at six months postpartum for first-time mothers in Taiwan: a multiple time series design. *BMC pregnancy and childbirth*. 2018; 18(1): 365.
32. Newnham, C. A., Milgrom, J., & Skouteris, H. Effectiveness of a modified mother-infant transaction program on outcomes for preterm infants from 3 to 24 months of age. *Infant behavior and development*. 2009; 32(1): 17-26.
33. Lawrence, P. J., Davies, B., & Ramchandani, P. G. Using video feedback to improve early father-infant interaction: A pilot study. *Clinical child psychology and psychiatry*. 2013; 18(1): 61-71.
34. Kadivar, M., & Mozafarinia, S. M. Supporting fathers in a NICU: Effects of the HUG Your Baby program on fathers' understanding of preterm infant behavior. *The Journal of perinatal education*. 2013; 22(2): 113.