Journal of Family Centered Health Care
Volume 1 / Issue 1/ 2022 pages 7-14

ORIGINAL ARTICLE

Received: 2022-02-05
Accepted: 2022-04-17

Comparison of Mother Attachment Behaviors to Premature Neonate between primiparous and multiparous Women in the Neonatal Intensive Care Unit

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Abstract

Introduction: preterm infants after birth Needs care and hospitalization and separation the mother of the infant Causes attachment disorder between them. The present study was done with the aim of evaluating the difference of maternal attachment behaviors in preterm infants in primiparous and multiparous women in neonatal intensive care unit in selected hospitals affiliated to Isfahan University of Medical Sciences in 2019.

Method: In this descriptive comparative study, 100 mother with Hospitalized premature infants were studied in two equal groups of primiparous and multiparous women. The data collection tool included the standard Avant checklist and demographic information form. Attachment behaviors in two groups during communication of mother with preterm infant were evaluated and compared using Avant Checklist. Data analysis was done by SPSS version 22 software**.**

Results: The findings of this study showed in the primiparous and multiparous women, the highest average attachment was in emotional domain and the lowest average was in attachment domain. The mean attachment score was not significantly different between the two groups, but the mean attachment score in the two groups was lower than the mean of the Avant Checklist.

Conclusion: The results showed that the mean of Mother to infant attachment in two groups was not significant, but in both groups, the mean attachment was lower than the mean checklist of Avant and Necessary measures should be considered to promote attachment in both groups.

Keywords: attachment behaviors, mother, preterm infant, primyparity, multyparity

Introduction

The secret of human survival lies in a safe and healthy birth (1). Every year, 140 million babies are born in the world, of which 15 million are premature, and among these premature babies, about 1 million and 119 thousand babies are unable to survive. Research has shown that the rate of premature birth in Iran is about 10 percent, and the rate of infant mortality due to prematurity is estimated at 12 per thousand live births (2).

Prematurity means that the baby was born before the end of the 37th week of pregnancy, regardless of weight (3) and due to the incomplete development of its body systems, it needs support and care (1), and Most of the times hospitalization of the premature

DOI: 10.30486/FCH.2022.693485

baby is unavoidable and the mother does not get the opportunity to contact and hug the baby immediately after birth. (4) And this baby is hugged less than the babies who have gone through the stages of transformation well. They are touched or spoken to less kindly (5) and by disrupting the attachment process between mother and baby, the premature baby is exposed to many risks such as hospital infections, delayed weight gain, and increased length of hospitalization (6). Therefore; premature birth is a risk for the mother-child relationship (7) because part of the natural development of the baby depends on the interaction between the mother and the baby, which connects them through psychological and physiological reactions. These emotional reactions of the mother and the baby tell about a complex process called attachment (8). The attachment has been described as an emotional and stable bond between the baby and the caregiver (9). The process of attachment starts from the beginning of the pregnancy and is strengthened during the events of pregnancy, and its maximum amount is in the third month of pregnancy, and it reaches its peak with the contact between mother and baby during the postpartum period (10), but the attachment disorder is the result of separation from mother or the lack of care and interaction with the mother that will cause other complications including growth failure, psychosocial dwarfism, anxiety disorder, avoidant personality disorder, delinquency, academic problems or borderline IQ for the child (11).

Considering that every year a large number of babies are admitted to the intensive care unit due to prematurity, the separation of mother and baby from each other causes a disturbance in the process of creating attachment between them and affects the quality of their future life, the researcher conducted a study with the aim of determining and comparing mother-premature infant attachment behaviors in primiparous and multiparous women in the neonatal intensive care unit in selected hospitals affiliated to Isfahan University of Medical Sciences in 2019.

Materials and methods

The current research is a descriptive-comparative quantitative study and descriptive research is a description of a situation or field of conditions. Its purpose is to describe the conditions or phenomena under study. Descriptive research includes collecting information to answer questions related to the current situation under investigation. Descriptive information is usually collected through questionnaires, interviews, and observations (12). The statistical population in this study consisted of all primiparous and multiparous women who had a premature baby with a birth age of fewer than 37 weeks and whose baby was hospitalized in the neonatal intensive care unit of Amin and Al-Zahra hospitals in Isfahan. The sample size for conducting a two-sided test was a significant level of 5%, with a test power of 80%, and to detect a difference of 60% of the value of the standard deviation, 44 people in each experimental group were calculated and considering 10% as sample dropout, 50 people were selected in each experimental group. The sampling method in this research was available mode. The entry criteria of mothers include the ability to speak and understand Farsi, not using tobacco and drugs, the mother not suffering from mood and emotional disorders that hinder effective communication, being a biological mother in such a way that the baby is not born from surrogacy. Pregnancy was desired, and the criteria for the inclusion of infants included fetal age less than 37 weeks, absence of 3rd and 4th degree intraventricular hemorrhage at the time of the study, absence of congenital abnormalities and any acute problems in the infant, and the passage of at least 1 week from the time of birth. The information in this research was organized into two parts. In the first part, the demographic information form was used, and in the second part, Avant's standard checklist was used to evaluate mother-infant

attachment behaviors. The Avant checklist was invented by Robert and Noro and was used in 1989 and 1991 (4). Then, in the research of Tilukskolchai in 2002, it was measured and confirmed again in terms of validity and reliability (13). After that, in Iran, Vakilian and colleagues translated this tool into their study and approved the validity of the translated text by making changes to it using the opinions of the academic staff of the Iran School of Nursing and Midwifery. The reliability of this tool was also tested by simultaneous observation by two people. Thus, with a correlation rate of 0.98, its reliability was also confirmed (14). In addition, this checklist has been repeatedly evaluated in other researchers conducted in Iran for its validity and reliability. In this research, the data collection tools were provided to 10 faculty members of the Faculty of Nursing and Midwifery, Azad University of Isfahan (Khorasgan), and their opinions were taken into consideration. This checklist includes three groups of mother and baby attachment behaviors , which includes emotional behaviors (looking, caressing, kissing, talking, smiling and rocking the cradle), closeness behaviors (hugging without touching the mother's body, hugging when the baby's body is in contact with the mother, and hugging the form of wrapping the arms around the baby) and care behaviors (patting the baby on the back to expel the stomach air, changing diapers and arranging the baby's clothes) and for each dimension of emotional behavior, closeness and care, minimum zero and maximum in emotional behavior(90), Proximity (45) and caring (45) were considered and the maximum score of attachment behaviors was (180). It should be mentioned that this checklist was evaluated only in one stage and at least one week after delivery. After approving the proposal and obtaining the ethics code from the Ethics Committee of the Research Vice-Chancellor of Isfahan Islamic Azad University (Khorasgan), the researcher referred to selected hospitals affiliated with Isfahan University of Medical Sciences with a written introduction letter from the university to participate in the research environment. With the permission of the hospital officials, she attended the research environment and introduced herself to the supervisor and nurses of the ward, and convinced them to cooperate by providing the necessary explanations. Then the researcher went daily to the restroom of mothers who had premature babies in the neonatal intensive care unit of Amin and Al-Zahra Hospitals in Isfahan and gave the necessary explanations about the research, and then the mothers who had the desire and criteria to enter the research, their babies The criteria for inclusion in the study were considered and if the conditions for inclusion in the study were met, the mother and baby were included in the study and the mother completed the informed consent form. Then the demographic questionnaire was completed by interviewing the mother and with the help of the premature baby's medical record. It should be mentioned that the mothers were not informed of a specific time to conduct the research so that the knowledge of the research time does not change the behavior of the mother with the baby. Therefore, the mothers were observed regarding the number of hours they spent with their babies during the day in order to investigate the attachment behaviors of the mother to the premature baby based on the Avant checklist. In this way, in every minute, the first 30 seconds were dedicated to observing the behavior and the next 30 seconds to recording. The total number of behaviors recorded during 15 minutes was considered. Thus, the maximum behavior observed for 15 minutes was 15 times. To observe and record the behaviors, the researcher used a stopwatch and after collecting the data, the analysis was done on two descriptive and inferential levels. At the descriptive level, frequency distribution tables and mean and standard deviation indices were used to describe the sample situation in each of the groups and at the inferential level from Mann-Whitney tests, independent t, chi-square test, analysis of covariance test and Fisher's exact test,

correlation coefficient Spearman and Pearson's correlation coefficient were used. Analyzes were performed at a five percent error level using SPSS software version 22.

Results

The average age of primiparous mothers was 29.65±4.94 and in multiparous mothers was 32.69±5.19 years. The average fetal age of the newborn in primiparous mothers was 31.46±2.89 and in multiparous mothers was 32.07±2.89 weeks. The birth weight of the baby in primiparous mothers was 1637.50±734.88 and in multiparous mothers was 1779.81±826.06 grams. The duration of hospitalization of the newborn in primiparous mothers was 14.10±6.65 and in multiparous mothers was 14.28±7.93 days and the results using independent t test showed that the average age of mothers in the multiparous group was significantly higher than The first group (P<0.05), but there was no significant difference between the two groups in the average fetal age, birth weight and duration of hospitalization between the two groups (P>0.05). (Table No. 1)

Table (1): Comparison of the average age of mothers, fetal age of the baby, and birth weight of the baby and length of hospitalization between the two groups

Variable	primiparous group		multiparous group		independent t-test	
	Mean	Standard Deviation	Mean	Standard Deviation	t	P
Mother's age (years)	29.65	4.94	32.69	5.19	3.02	0.003
Fetal age of the baby (weeks)	31.46	2.89	32.07	2.89	0.56	0.28
Baby's birth weight (grams)	1637.50	734.88	1779.81	826.06	0.91	0.36
Duration of hospitalization of the baby (days)	14.10	6.65	14.28	7.93	0.12	0.91

In the first group, emotional behaviors had an average of 24.7±8.30, proximity behaviors had an average of 4.40±0.8, and caring behaviors had an average of 2.52±0.4, which resulted in the highest average of attachment in the emotional field and the lowest average was related to the caring field. In the polygynous group, emotional behaviors had an average of 26.33±8.03, proximity behaviors had an average of 5.70±0.7, and caring behaviors had an average of 2±0.3, which resulted in the highest average of attachment in the emotional field and the lowest average was in the caring area. In the primiparous group, the average attachment score was 31.19 ± 7.51, and in the multiparous group, the average attachment score was 34.04 ± 8.83, which indicates that the average attachment score in the multiparous group was slightly higher than the primiparous group but considering a number of variables between the two groups, including mother's age, was significantly different from each other, and this difference might have an effect on the results of attachment. By using the covariance analysis, the unequal variables in the two groups were adjusted and considered equal so this difference does not affect attachment, thus these results showed that attachment and its dimensions were not significantly different between the two groups of primiparous and multiparous (P>0.05) (Table 2).

Pearson's correlation coefficient showed that attachment in the primiparous group had a direct relationship with mothers' age (P < 0.05), but there was no significant relationship with fetal age and length of hospitalization (P > 0.05). Sperman's correlation coefficient showed that there was no significant relationship between attachment in the first birth group and the number of pregnancies and

the education level of mothers (P>0.05). Pearson's correlation coefficient showed that attachment in the multiparous group had no significant relationship with mothers' age, fetal age, and length of hospitalization (P>0.05). Spearman's correlation coefficient showed that attachment in the multiparous group had no significant relationship with the number of pregnancies and the education level of the mothers (P>0.05). (Table 3).

Table (2): Comparison of the mean total score of attachment behaviors and its dimensions between two groups

Dimensions of attachment behaviors	primiparous group		multiparous group		Covariance analysis test	
	Mean	Standard Deviation	Mean	Standard Deviation	P	F
total score	31.19	7.51	34.04	8.83	2.11	0.15
Emotional behaviors	24.27	8.30	26.33	8.03	1.43	0.23
Proximity behaviors	4.40	0.8	5.70	0.7	0.02	0.88
Caring behaviors	2.52	0.4	2	0.3	0.22	0.64

Table (3): Correlation coefficients between the total score of attachment behaviors with mother's age, number of pregnancies, fetal age, duration of hospitalization, and level of education in each of the two groups

Variable	The total score of the attachment behaviors of the primiparous group		The total score of the attachment behaviors of the multiparous group	
	R	P	r	P
Age	0.287	0.048	-0.043	0.76
fetal age	0.116	0.43	-0.059	0.67
Length of hospitalization	-0.100	0.50	-0.100	0.47
Number of pregnancies	0.216	0.14	-0.132	0.34
Level of education	-0.261	0.06	0.265	0.055

Discussion

The findings of the research showed that in primiparous and multiparous women, the highest level of attachment was in the emotional field and the lowest level of attachment was in the care field. In this regard, the results of the study by Tilukskolchai et al. (2002), entitled "Attachment behaviors in mothers with premature babies" showed that all mothers most of the attachment behaviors are in the emotional field such as staring, facial expressions, touching, talking and eye contact, except hugging during the first meeting, but they spent less time taking care of their baby (13). Therefore, it can be concluded that in both primiparous and multiple parous groups, the birth of a premature baby has little effect on a decrease in the level of attachment of mothers in the emotional field but a decrease in the level of attachment in the field of care can be due to the mother's fear of harming the premature baby due to its weak and incapable physical condition during care, which requires more training and support of mothers, through the treatment staff to increase their participation in the care of premature babies. Also, the findings of the research showed that the attachment in the multiparous group was slightly higher than the primiparous group, but the covariance analysis test with adjustment of the non-identical variable in the two groups showed that the attachment and its dimensions did not differ significantly between the primiparous and polyparous groups. The results of the study by

Mijsen et al. (2011), entitled "Mother's attachment after the birth of a very premature baby and the effect of early intervention" showed that no difference was found in the attachment and relationship between mother and baby in both the control and intervention groups (15) and the same with the current research. Therefore, it can be concluded that the number of births of the mother does not make a difference in the amount of attachment to the baby and it is the same in all mothers, but considering that the attachment score of the two groups was lower than the Avant checklist attachment score, it can be concluded that the attachment level of the mother with a premature baby is less than a full-term baby, and in confirmation of this, the results of Ruez et al.'s (2018) study, entitled "Parent-child attachment in premature and full-term children" showed that the parents of full-term babies have a stronger attachment than premature babies (16) and is in line with the results of the present study. As a result, the mothers of the two groups need educational, supportive and family-oriented interventions through the therapy staff to increase the mother's attachment to her baby, and in confirmation of this, the results of the study by Tusi et al. entitled “Anxiety and attachment of the mother to the baby in the first pregnancy" showed that the amount of attachment of the mother to the baby in the test group was significantly higher than that of the control group (14), which can indicate that teaching attachment behaviors to the family increases attachment. Between mother and baby. Regarding the relationship of some variables with attachment, the results of the research showed that attachment in the primiparous group had a direct relationship with the age of mothers, but there was no significant difference with fetal age, length of hospitalization, number of pregnancies and education level of the mothers, and in the multiparous group, There was no significant difference between the attachment and the age of mothers, fetal age, length of hospitalization, number of pregnancies, and education level of mothers. The results of Dezvarii et al.'s study (2014), entitled "The degree of maternal attachment and factors related to it in mothers of hospitalized premature infants" showed that there is no significant difference between the attachment to the infant with the age of the mother, the number of pregnancies, the age of the fetus, the duration of hospitalization, and the occupation of the mother, but there is a significant difference with the preferred gender of the baby, the sex of the baby and the desire to get pregnant (2). The results of Dadipour et al.'s study (2013) titled "Investigation of mother's attachment level with infant in mothers referring to Bandar Abbas hospitals" showed that attachment has a significant difference with mother's age and mother's education level(17). The results of the above studies can indicate that some demographic variables are effective factors on the amount of attachment to the baby, and some controllable variables that are effective on the amount of attachment should be modified or strengthened so that the uncontrollable factors that have an adverse effect on the amount of attachment can be reduced.

Conclusion

In general, this research showed that the level of mother-infant attachment in the first and multiple birth groups did not differ from each other, and in both groups, the average attachment behaviors were the same and low. Therefore, the same attachment in the two groups shows that the number of births of the mother does not make a difference in the amount of attachment to the baby, and the low attachment in the two groups can be due to the decrease in physical contact between the mother and the hospitalized premature baby. Therefore, all the people who are involved in the treatment and care of premature babies can empower mothers in the care of premature babies by carrying out educational, supportive and family-oriented interventions in order

to improve attachment behaviors between mothers and premature babies. This play a significant role in reducing the complications of premature birth and the death of premature babies, and the occurrence of physical and behavioral disorders of babies in the coming years can be prevented.

Acknowledgments

This article is taken from a student's thesis in the master's course of pediatric nursing with the number 23810401971008 and code of ethics with the identifier IR.IAU.KHUISF.REC.1397.141. We would like to express our gratitude to the Research Vice-Chancellor of Isfahan Islamic Azad University (Khorasgan) for providing the context for this research and also to all the people who cooperated in this research.

Conflicts of interest

The authors declared that there is no conflict of interest.

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