

Research Article

The effect of training attachment behaviors on mother-child bonding after birth

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ABSTRACT

Background and Goal: early mother-child bonding plays an important role in the child's psychological development and various factors affect the promotion of this relationship. The present study aimed at investigating the effect of attachment behaviors' training on mother-child bonding after birth among primiparous women.

Items and Methods: In this randomized clinical trial study, 90 primiparous pregnant women referring to health centers of Zahedan city in 2015 to receive prenatal care, who had the inclusion criteria, were selected by convenience sampling and randomly assigned to two experimental (n = 45) and control (n = 45) groups. Data collection tools included a questionnaire on demographic information and the Postpartum Bonding Questionnaire. The experimental group members individually underwent attachment behaviors' training in four sessions, two sessions per week, for 90 minutes and the control group only received prenatal care. All statistical analyses were performed using the using SPSS version 20 and Chi-square and independent t-test at the significant level of $p < .05$.

Findings: The mean score of the postpartum mother-child bond in general and the components of general bonding difficulties, rejection and pathological anger, and incipient abuse was not significantly different in two experimental and control groups, but the mean score of infant-focused anxiety in the experimental group was significantly lower than the control group after intervention ($p < .05$).

Conclusion: According to the results, it seems that training attachment behaviors during pregnancy can reduce anxiety of nulliparous mothers' care as an easy, low-cost and effective way. It is recommended to teach these behaviors to health workers, especially nurses and midwives so as to take a major step toward improving parents-child relations in order to reduce mothers' anxiety and thus, ensure their children's mental health.

Keywords: attachment behavior, mother-child bond, primiparous women

INTRODUCTION

Establishing emotional bond between mother and child is an extremely sensitive process in the postpartum period. Mother-child bond refers to initial communications between mother and infant, an important characteristic of which is

emotional response to the infant in the first year after giving birth (1). Mother-child bond is mother's feeling of intimacy, calmness, protection, and concerns about the health of the child and is characterized by mother's actions

including looking, smiling, touching and talking to the baby (2). Mother-to-child emotional attachment is indicative of the quality of emotional feelings and behaviors of mother toward her child and emerges as behaviors that represent the mother-to-child care (3). Mothers' with higher attachment to their babies are often more sensitive to their needs. Sensitivity to respond to the needs of the child has a positive effect on psychosocial performance of the child and affects many aspects of next emerging personalities such as curiosity, socialization abilities, self-confidence, independence, cooperation and honesty (4). The failure to form attachment during the first months of life can have negative effects on childhood and adult behavior and create stable behavioral problems in the child (5). Attachment disorder as a result of separation from mother or lack of care or interaction with the mother can lead to serious complications such as failure to thrive, separation anxiety disorder, psychosocial underdevelopment, avoidant personality disorder, crime, lack of intimate personal relationships with others, educational problems or borderline IQ (6).

Many factors affect increase of mother-to-child attachment after birth. Studies have shown that teaching and learning attachment behaviors can increase attachment and mental health of the mother (7 & 8). Training attachment behaviors include talking to the fetus, touching the fetus from the abdomen, paying attention to fetal movement, and etc., all of which promote maternal attachment to the child and significantly increase child care (9). Mother-to-fetus attachment is a unique bond and relationship between the pregnant woman and the fetus that begins during pregnancy and continues after birth (10). In other words, behaviors of mothers with babies are the result of attachment during pregnancy (8). Maternal-fetal attachment behaviors lead to stable and pleasant intimacy and passion in mothers, in which mental health of the pregnant mother is of utmost importance.

Maternal-fetal attachment occurs from the beginning of pregnancy and gradually increases so that reaches its peak in the third quarter and continues until the end of pregnancy and even after childbirth, which plays an important role in successful compliance of the mother with pregnancy (11).

Evidence shows that maternal-fetal attachment can predict the how of postpartum maternal feedback and performance, infant interaction and attachment styles after birth. Mothers who were more attached to their babies during pregnancy, have better interaction with their infants. This is what, in turn, can have a great impact on child's emotional, cognitive and social development. This connection creates a secure attachment styles in baby (12).

Hoseininasab et al. conducted a study and showed that training and performing attachment behavior increases maternal fetal attachment (13). The results of Buitelaar et al. showed that the attachment between mother and fetus can predict how the mother interacts with the baby in the postpartum period as well as the attitude and behavior in relation to the infant (14). However, Parsa et al. quoted from Ronald et al. stated that attachment behaviors such as touching the fetus and massaging the belly have no significant effect on postpartum mother and child attachment (15).

Given the conflicting results of studies on the impact of attachment behavior and communicating with fetus on mother-child attachment, this study aimed at investigating the effect of attachment behaviors' training on mother-child bonding after birth among primiparous women.

MATERIALS AND METHODS

In this randomized clinical trial study, 90 primiparous pregnant women referring to health centers of Zahedan city in 2015 to receive prenatal care, who had the inclusion criteria, were selected by convenience sampling method and randomly assigned to two experimental (n = 45)

and control (n = 45) groups in the case of willingness to participate in the study.

Inclusion criteria included age of 18-35 years, having a minimum ability of reading and writing, singleton pregnancy, lack of obstetric complication such as bleeding, pregnancy blood pressure, diabetes and no history of preterm delivery, planned pregnancy, normal ultrasound tests and fetal screening during pregnancy, pregnancy age of 22-28 weeks. Exclusion criteria included underlying diseases such as diabetes, high blood pressure, occurrence of recent stressful events for participants such as serious illness of the mother or spouse, death of a first-degree relative, previous existence of diagnosed mental illnesses such as schizophrenia, depression and hospitalization, referring to a psychiatrist, history of infertility, drug addiction and lack of accurate and complete intervention (recording attachment behaviors less than three or four days a week after intervention by participants during the 12-16 weeks of the end of pregnancy), the incidence of obstetric complications such as premature delivery and pregnancy complications.

Considering the 95% confidence level and statistical power of 90% and using the formula for statistical comparison of the mean of the groups and based on the results of the study of Toosi et al. (7), sample size was 45 subjects in each group.

Data collection tools included a questionnaire on demographic information including mother's age, mother and spouse's education level, mother and spouse's employment status, housing status, fetus' gender, type of delivery, and gestational age and the Postpartum Bonding Questionnaire (PBQ). The PBQ was developed by Brockington et al. to detect initial mother-and-child relationship. The PBQ has 25 items and four scales of general bonding difficulties (12 questions), rejection and pathological anger (7 items), infant-focused anxiety (4 items), incipient abuse (2 items). Items are based on a 6-point Likert scale being scored from never = 0 to

always = 5. The minimum score is zero and the maximum score is 125 in this questionnaire. A higher score indicates a problem in mother and child bonding (16). In the study of Aflakseir & Jamali (17), the content validity of this questionnaire was confirmed. Its reliability was .52 for general bonding difficulties, .67 for rejection and pathological anger, .70 for infant-focused anxiety, and .74 for incipient abuse using Cronbach's alpha coefficient. In the study of Galeshi et al. (18), the whole reliability was .87 and .53, .75, .71, and .70 for general bonding difficulties, rejection and pathological anger, infant-focused anxiety, and incipient abuse, respectively.

Those who met the inclusion criteria were selected and then participated in the study after explaining the objectives of the study. Both experimental and control groups' members completed the questionnaire on demographic information. In addition to receiving routine prenatal care, the experimental group members individually underwent attachment behaviors' training in four sessions, two sessions per week, for 90 minutes. Attachment behavior training CD along with a checklist of daily records of attachment behaviors (in about 12-16 week of the end of pregnancy) were given to experimental group members and telephone follow-up was done three weeks a week by the researcher to perform attachment behaviors and complete the checklist. The control group only received routine prenatal care. After completing the training sessions and in intervals of 15 to 30 days after delivery, postpartum mother-child bond questionnaire was completed by the mothers in both groups.

After reading related books and articles to determine the content of attachment behaviors' training, the basic structure was developed with the help of professors and advisors and the expert opinions of specialists and faculty members (psychologists, counselors, midwives, and gynecologists) were used to confirm and complete the content. For more effective use of

the educational content, correct and safe palpation of the abdomen and counting exercises, diverse ways of teaching and learning were filmed and presented as part of the training.

All statistical analyses were conducted using the Statistical Package SPSS for Windows v. 20 (SPSS Inc., Chicago, IL, USA), Chi-square and independent t-test. A p-value of < 0.05 was considered to represent statistical significant.

Findings

Of the 90 subjects under study, 45 patients were in the experimental group and 45 patients were in the control groups. The mean age of the experimental group was 24.62 ± 3.92 years and the mean age of the control group was 23.55 ± 3.41 years ($p > .17$). Mean gestational age of

pregnant women in the intervention group was 26.00 ± 2.16 weeks and in the control group was 26.53 ± 2.33 weeks ($p > .27$). The two experimental and control groups' members were not significantly different in terms of education, occupation, spouse job, delivery type and living area ($p > .05$). (Table 1)

The results of independent t-test showed that the mean score of the postpartum mother-child bond in general and the components of general bonding difficulties, rejection and pathological anger, and incipient abuse was not significantly different in two experimental and control groups ($p > .05$), but the mean score of infant-focused anxiety in the experimental group was significantly lower than the control group after intervention ($p = .002$). (Table 2)

Table 1: comparison of the frequency distribution of demographic characteristics of mothers of two experimental and control groups

Variable		Experimental	Control	P-value of chi-square test
		No. (%)	No. (%)	
Education level	Lower than diploma	4 (8.9)	12 (26.7)	.07
	Diploma	11 (24.4)	11 (24.4)	
	Higher than diploma	30 (66.7)	22 (48.9)	
Occupation	Household	38 (84.4)	36 (80)	.50
	Employed	7 (15.6)	9 (20)	
Spouse's job	Employed	18 (40)	17 (37.8)	.83
	Freelance	27 (60)	28 (62.2)	
Delivery type	Vaginal	26 (57.8)	32 (71.1)	.18
	Cesarean	19 (42.2)	13 (28.9)	
Living area	Personal	12 (26.7)	11 (24.4)	.80
	Leased	33 (73.3)	34 (57.6)	

Table 2: comparison of mean score of mother-child bond in general and its components after intervention

Variable	Experimental	Control	P-value of independent t-test
	SD±Mean	SD±Mean	
general bonding difficulties	6.15±6.44	6.82±4.56	.57
rejection and pathological anger	2.28±2.80	3.00±2.57	.21
infant-focused anxiety	2.48±1.96	3.91±2.15	.002
incipient abuse	.28±.89	.24±.82	.80
Mother-child bond in general	11.22±10.03	13.97±8.34	.16

DISCUSSION

The results of this study showed that the mean score of the postpartum mother-child bond in

general and the components of general bonding difficulties, rejection and pathological anger, and incipient abuse was not significantly different in two experimental and control groups, but the mean score of infant-focused anxiety in the experimental group was significantly lower than the control group after intervention.

Akbarzadeh et al. (2011) investigated the effect of learning attachment behaviors on anxiety and maternal fetal attachment in first pregnant women and showed that the mean score of maternal fetal attachment of the experimental group had significantly increased after intervention and the mean score of anxiety had significantly decreased ($p < .05$) (19). Toosi et al. (2011) studied the effect of attachment training on anxiety and attachment behaviors of first-time mothers and showed that maternal fetal attachment of the experimental group was significantly greater than control group, which can be due to the contents of training, powerful visualization and more interaction with fetus. Mothers in the experimental group became familiar with the necessity of communication and doing things like touching and recording fetal movement, all of which increased mothers' visualization of the fetus and thus increased mother-to-child attachment. The results also showed that training attachment behaviors decreased the anxiety level of mothers in experimental group (7).

Abbasi et al (2010) showed that learning and performing attachment behaviors increase maternal attachment and reduce anxiety and thus, improve the mental health of mothers (20). The results of the study by Bellieni et al. showed that training attachment behavior has a significant impact on increasing the attachment and reducing maternal anxiety (21). The results of these studies on the impact of attachment behaviors on the increase in mother-infant attachment are not in line with the results of this study, but are consistent with the results of this study in terms

of the impact of training attachment behaviors on reducing anxiety.

The results of the study by Kim et al. (2004) showed that training maternal fetal attachment behavior such as talking and touching the fetus from the mother's abdomen has a significant impact on increasing maternal attachment (9), which is not consistent with the results of the present study and that this difference could be as a result of differences in counseling, education, location, duration or time of starting training during pregnancy (10). These studies have provide group counseling, which leads to taking advantage of each other's experiences. However, the present study has provided individual training, which may be a reason of inconsistency of results.

Kelly (2001) showed that learning attachment behavior such as talking, touching, and focusing on fetus leads to improvement of mental health and reduction of anxiety in mothers (22), which is consistent with the results of this study.

With regard to the impact of training attachment behaviors on reducing infant-focused anxiety, it can be stated that in order to reduce maternal stress, focus of her attention should be changed toward daily activities and problems. Thinking about embryonic and performing fetal attachment behaviors such as talking and touching can provide such conditions for mother to repose. Daily repetition of such behaviors suppresses unwanted thoughts and decreases activity of the sympathetic nervous system and anxiety (23).

Training mothers during pregnancy causes a positive attitude toward pregnancy and thus reduces their anxiety (24). On the other hand, mothers who experience educational interventions of attachment during pregnancy, perform more motherly behaviors that can affect mental health and reduce maternal anxiety (20). Learning attachment behaviors increases interaction with fetus such as eating well, stopping alcohol, having a positive image of the fetus, talking to the fetus, paying attention to fetal

movements and other interactive behaviors, all of which lead to anxiety reduction and health promotion in mother and baby (25).

One of the limitations of the present study may be due to the fact that in all training sessions, mothers established attachment relationship with their babies through various methods. Perhaps with the use of three-dimensional ultrasound of the fetus and seeing the fetus by the mother, a stronger attachment relationship could be established, which was not applicable due to financial constraints. However, great events and stressors in the lives of women were under investigation during the study, but the little stresses of everyday life was uncontrollable, which is also one of the limitations of this study.

CONCLUSION

According to the results, it seems that training attachment behaviors during pregnancy can reduce anxiety of nulliparous mothers' care as an easy, low-cost and effective way. It is recommended to teach these behaviors to health workers, especially nurses and midwives so as to take a major step toward improving parents-child relations in order to reduce mothers' anxiety and thus, ensure their children's mental health.

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