The comparison of mother-infant attachment, mother attachment styles and marital satisfaction among mothers with preterm infants and mothers with full-term infants

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ABSTRACT

Background: Preterm Birth, birth before 37th week of pregnancy, is a very important concern for public health. Objective: The aim of this study was to compare mother-infant attachment, mother’s attachment styles and marital satisfaction between mothers of preterm infants with mothers of full-term infants. 100 mothers of preterm infants and 100 mothers of full-term infants were selected from Obstetrics and Gynecology or Neonatal Intensive Care Units of Milad and Shahid Akbarabadi hospitals. All of the mothers completed two questionnaires: Adult attachment styles (AAS) & Enrich Marital satisfaction scale-short form. Then, while breastfeeding their infants, all of the mothers were observed by the researcher for 15 minutes & Avant observation form were completed. Data analysis revealed that there was no significant difference between the two groups regarding mother-infant attachment (p>0.05). Result: There were also no significant differences between the two groups regarding to three categories of attachment styles. The mothers of preterm infants and full-term infants did not have a significant difference in their marital satisfaction (p>0.05). Conclusion: The results of this study have been compared with previous literature & recommendations for future studies have been provided.

INTRODUCTION

The premature birth is subjected to the birth of an infant whose birth happened 37 weeks early in the pregnancy period; it is of course considered as an important challenge for the public health. The premature birth has some problems at infant period making serious issues such as high mortality in this case [16]. The related process of premature birth not only has some serious problems among infants after birth but also it can make long term and drastically consequences in the field of growth process [8]. These serious and catastrophic cases can be subjected to the infants’ frequent diseases, lack of attention, rejection of parents particularly mother, extra-activation, low scores in intelligent tests, lack of motor and learning cohesion at educational level. It is probably these infants cannot grow in the middle of their childhood; they will have some problems at their adulthoods when they want to afford their life [7]. The premature children are susceptible to more sustainable diseases in the whole growing fields [29]. About 10 to 15% of these serious diseases are subjected to the cerebral palsy, sensory disorders and brain retard) and more than 50% of these diseases show most sophisticated issues requiring more expertise affairs.(For example, the lack of movement and motor skills, special learning weaknesses, extra-activation and lack of attention) [11]. The birth of premature infants can make them and their mothers into serious problems along with different interactions making them to dangerous pitfalls in this regard. There have been many different factors influencing on the complex relationship of mothers and infants; for example, the premature children look after themselves little; they respond to any stimulants with high smiles and playing [5, 13, 19]. The appearance and behavior of these premature children make parents to take care them with high attention; these infants can get easily hugged in compare to normal infants when they had a normal pregnancy period. This makes parents not to have suitable behavior with their children. The premature children cannot tolerate and manage their perceived stimulation in compare to natural and normal ones because they are unable to control their attention getting more panic and motivated when they receive a stimulant case [30]. In the other hand, the birth of a premature infant is coming from the separation or taking bed the child. Taking bed

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of the premature infant in intensive care unit can lead parents to feel and experience the bereavement destroying the emotional relationship of mother with her infant after the birth. Indeed, parents tolerate high emotional tensions and pressures [6]. The family members should make an adaptive relationship with this premature child caring the whole process [21]. The premature infant mothers have high stresses due to their postpartum feeling the bereavement and sin in this regard [1]. One of the most important factors making a warm relationship between mothers and infants is subjected to the process of Mother-Infant Attachment, observation, touch and recognition of infants’ reactions in this case. The researches regarding to the mother attachment to infants have shown that the separation of every infant can change the motherhood behavior during the birth time. The premature birth is one of the factors that can separate mother from the infant destroying their dependency and attachments in this pavement [2]. The reduction of mothers’ response to their infants may also happen in this case [2]. Another factor influencing on the relationship between mothers and infants is subjected to the attachment styles. The attachment is a sustainable emotional bond clinically that its feature is related to the seeking and preserving of a person particularly in stressful period [4]. Mikulinker and Florian (1998) have defined the attachment as an internal resource assisting people to evaluate the stressful experiences more positive and trying to overcome the stressful settings; it also recovers and heals the social welfare and adaptation. People with providing attachment style are more pessimistic towards their own relations and others [11]. And people with anxiety-double sided style have negative attitudes towards themselves [9]. Since an evolutionary piece of an infant depends on the emotional natural reactions between mother and himself, these reactions make physiological and mental relationships between them; hence, the birth of a premature infant can destroy the natural relationship between their processes. Some studies have direct significant correlation between safe attachment style and mother attachment to infant [15]. In the other hand, the relationship between mother and infants can be boosted and optimized by the mate’s emotional support and the whole family members. This relationship plays a key role in mothers’ ability to make their kind and care processes. The quality of a common life among the couples can be affected by the birth of a child because the struggles get increased and parents try to make their best affords to meet and provide their children future as well. Thus, cooperation, attention and high support of the couple should be highly paid attention due to the wives problems at this period [3]. Therefore, another factor being affected during the birth time is subjected to the degree of motherhood marital satisfaction. The marital satisfaction is a process that can be appeared during the couples’ life time. The marital satisfaction includes four fields of attraction (sexual-physical), mutual understanding, consideration mood and investment. The life satisfaction influences on parents and children relations. This relationship is very effective in personal health and children psychiatric affairs, couples and family health, too. Couples with suitable quality of relationship have better health in this case [18]. The lack of attention to emotional and psychiatric stresses of parents can lead to the lack of enough attachment to their infants exposing them to high risky issues [30]. According to what stated, it can be stated that the birth of a premature infant not only makes various economical and psychiatric problems but also it wastes the humanistic and financial investments in this pavement; this issues is increasing due to the high mortality and morbidity rates among the developing and industrial countries; any researches for determining the related factors, prevention and treatment can be very effective and influential in this case [23]. Hence, the present study is aimed at the review and compares the motherhood attachment to infant, motherhood attachment styles and marital satisfaction among mothers with premature infants and normal ones.

Methods:
Type of study:
This research is a comparative-causative type of study comparing two groups along with three variables.

Community, sample and sampling method:
The community of the present study is consisted of the whole mothers with preterm infants and mothers with full-term infants referred to the obstetrics and gynecology and neonatal intensive care units of Milad and Shahid Akbarabadi hospitals established in Tehran Megacity.
Among these women 200 ones (100 mothers with preterm infants and 100 mothers with full-term infants) ranging from 18-40 year old were taken up as available during 2012-2013.

Instruments: Avant observatory list:
Avant observatory list has been applied to measure the degree of mothers’ attachment to infant. This check list was firstly applied by Avant and its reliability and validity were also calculated in this regard [28]. Vakilian et al (2007) also translated this instrument in their study and confirmed the translated text reliability by some amendments using the comments of nursing and midwifery scientific board members of Iranian medical college. The validity of this instrument is observed by Vakilian et al in the same study; hence, about 98% correlation, the validity of the instrument has been confirmed [29]. In a study led by Berimmezhad et al (2011) its validity is observed 0.98 and confirmed in this regard. This instrument includes four behavior groups of mothers with
infant including rekindling behaviors (glaring, patting, kissing, speaking, laughing and moving the baby box), preserving behaviors (bugging keenly, touching herself to infant, mothers body touch to the infant), caring behaviors (putting on the back of baby to exit the air stream out of stomach, changing baby cloths) and mother attention to the baby.

The related behaviors are observed for 15 min. Researcher takes the first 30s to observe the behaviors and the second 30s is devoted to register these observations. Every observed behavior is registered only one time. Hence, the maximum of every observed behavior in 15min will be 15 times. Since 11 behaviors are observed for 15min, the maximum obtained score will be 165 for every unit of the related research being evaluated as quantity based scale and calculating the mean and deviation of the behaviors in this case [28].

Adulst's attachment scale (AAS):
The related scale has been used for measuring the motherhoods attachment styles [14]. This scale is a self-report scale that has been designed based on Ainsworth three attachment styles. This scale is consisted of three descriptive of personal feelings about interpersonal relations pointing to every attachment styles. This scale has got two sections; in the first section, the subject responds to every three descriptive statements based on 9 degree domain of LIKERT from “I completely disagree (1) to I completely agree (9)”. In the second section, the subject selects one of the statements as a suitable description about their own feelings. The reliability of the questionnaire is a contextual based one; that is, the context of the options is coincident with the concepts of the correlation structure theory and their expand with adults’ relations. The validity coefficient of the questionnaire is 73% and 72%, respectively [4]. The reliability features of this questionnaire and the power of its prediction have been reported by Fini and Noller [11].

Questionnaire of marital satisfaction (ENRICH):
This questionnaire has been applied to measure the marital satisfaction; this has been designed by Fournier, Olson and Druckman (1992); it is aimed at measuring the power and enriching the marital relations. This test has got two forms including 115 and 125 questions that are consisted of 12 sub-scales in this regard. The sub-scales of the test are including the idealism misunderstanding, satisfaction, personal issues, relationship, solving objections, financial management, leisure activities, sexual relations, children and children nurturing, family and friends, equality seeking roles and religious orientation. Soleimanian (1997) prepared a short form of this questionnaire including 47 questions and it has been applied in this present study. Soleimanian reported the validity of the questionnaire through calculating Cronbach alpha coefficient 0.90 in this case. Vadesbay [24] in relation to the validity and reliability has carried out vast researches so that the degree of the validity of the test is obtained between 0.65 and 0.94 and its distinct power is reported 0.90. Olson et al (1992) measured the validity of this questionnaire ranging from 0.48 to 0.90. The reliability of the re-test of this questionnaire is calculated between 0.77 and 0.92for four weeks with 0.86 averages. The validity of the questionnaire as re-test method is 0.94 for male and 0.94 for females and total sample is obtained 0.94 and for the other sub-scales ranging from 0.50 to 0.87 in this regard [17]. The carried out studies by the help of this scale has been confirmed on the happy couples and divorced people. The process of scoring regarding to the related scale has been considered as a five choices (as LIKERT based scale) that every choice is given 1 to 5 scores. The positive statements are considered “I completely agree” getting reduced to 1 “I completely disagree. The grade little than 30 represent the severe disagreement of the couples from the marital relations. The scores between 30 and 40 represent the lack of satisfaction of couples’ marital relations. The scores 40 to 60 show a partial and moderate satisfaction among the couples. And the scores 60 to 70 represent high agreement of the couples and the score higher than 70 represents the extra satisfaction of the couples’ marital relations.

Implementation approach:
The implementation method has been done as individually in the study; a skilled and trained person recruited to control the impacts of the personal differences. The researcher introduced firstly himself to the mother and then gave a short brief in relation to the mother about the implementation of the research. After taking the mother’s permission in order to participate in the study, the questionnaires were given to the same mother and then the mother got under the observation during the lactation period. The way of completing the questionnaires by mother was that these mothers completed the questionnaires in a special mothers’ room completing the mothers’ attachment list in NICU A and NICU B during lactation period in this regard. Also, the questionnaires of mothers with normal infants were given in after-postpartum units (natural and cesarean delivery) and beds and they were completed by the researcher in the mothers’ attachment lists during lactating period. Also, mothers with premature infants and normal ones were convergent in terms of demographical traits.

Results:
In the present study, the age of mothers 28.86 (SD = 4.534) and the mean marriage time 7.34 (SD = 4.638) were obtained. The lowest degree of mothers’ education was related to illiterate group and PhD equals to 0.5% and the highest one was related to Diploma (54%). The lowest group of mothers was workers and manager equals to 0.5% and the highest one was subjected to housewives (85.5%). Table 1 shows the mean and deviation of mothers’ attachment, mothers’ attachment styles and marital satisfaction in both groups of mothers with premature and normal infants.

The first aim of the present study was to evaluate the difference between mothers’ attachment in both related groups. T independent test was used to evaluate the hypothesis and the mothers’ attachment of both groups was compared together. According to table 2 the results of the test represent the fact that the degree of T test ($t = 1.488$) is smaller 5% than its critical degree in alpha level. Along with 95% confidence level, it can be concluded that there is no significant difference between premature infant mothers and normal ones. The other aim of the present study was to evaluate the differences of mother’s attachment styles among both groups of mothers. According to table 3, it is observed that there is no significance difference between attachment styles of both groups. Also, in this research we were seeking to evaluate the differences between two groups in terms of their marital satisfaction. According to table 4, the findings of the present study represented that the degree of t test ($t = -0.690$) is 5% smaller than its critical level. Along with 95% confidence level, it can be concluded that there is no observed significant difference between both groups of mothers.

### Table 1: Summary of measured indices of variables by groups’ separation.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Full-Term</th>
<th>Mean</th>
<th>Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother attachment to infant</td>
<td>67.38</td>
<td>24.163</td>
<td></td>
</tr>
<tr>
<td>secure</td>
<td>6.35</td>
<td>2.611</td>
<td></td>
</tr>
<tr>
<td>Avoidant</td>
<td>3.39</td>
<td>2.781</td>
<td></td>
</tr>
<tr>
<td>Ambivalent- Anxious</td>
<td>2.80</td>
<td>2.756</td>
<td></td>
</tr>
<tr>
<td>Marital satisfaction</td>
<td>13.38</td>
<td>16.195</td>
<td></td>
</tr>
<tr>
<td>Preterm</td>
<td>62.04</td>
<td>26.528</td>
<td></td>
</tr>
<tr>
<td>secure</td>
<td>6.43</td>
<td>2.583</td>
<td></td>
</tr>
<tr>
<td>Avoidant</td>
<td>3.22</td>
<td>2.608</td>
<td></td>
</tr>
<tr>
<td>Ambivalent- Anxious</td>
<td>2.98</td>
<td>2.693</td>
<td></td>
</tr>
<tr>
<td>Marital satisfaction</td>
<td>139.98</td>
<td>16.613</td>
<td></td>
</tr>
</tbody>
</table>

### Table 2: Summary of t test calculations of mothers’ attachment styles.

<table>
<thead>
<tr>
<th>Group</th>
<th>Indices</th>
<th>Number</th>
<th>Mean</th>
<th>Std deviation</th>
<th>Degree of T</th>
<th>DF</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mothers of preterm infants</td>
<td>100</td>
<td>62.04</td>
<td>26.53</td>
<td></td>
<td>1.488</td>
<td>198</td>
<td>$p&gt;0.05$</td>
</tr>
<tr>
<td>Mothers of term infants</td>
<td>100</td>
<td>67.38</td>
<td>24.16</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 3: Results of t test impacts between variance analysis groups of mothers with full-term and preterm infants.

<table>
<thead>
<tr>
<th>Change resource</th>
<th>Dependent variables</th>
<th>Total squares</th>
<th>DF</th>
<th>Mean squares</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preterm/term</td>
<td>Secure</td>
<td>0.320</td>
<td>1</td>
<td>0.320</td>
<td>0.047</td>
<td>$p&gt;0.05$</td>
</tr>
<tr>
<td></td>
<td>Avoidant</td>
<td>1.445</td>
<td>1</td>
<td>1.445</td>
<td>0.199</td>
<td>$p&gt;0.05$</td>
</tr>
<tr>
<td></td>
<td>Ambivalent/Ambivalent</td>
<td>1.620</td>
<td>1</td>
<td>1.620</td>
<td>0.218</td>
<td>$p&gt;0.05$</td>
</tr>
</tbody>
</table>

### Table 4: Summary of t test calculations of marital satisfaction in mothers with preterm and full-term infants.

<table>
<thead>
<tr>
<th>Group</th>
<th>Indices</th>
<th>Number</th>
<th>Mean</th>
<th>Std deviation</th>
<th>Degree of T</th>
<th>DF</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mothers of preterm infants</td>
<td>100</td>
<td>139.98</td>
<td>16.613</td>
<td></td>
<td>-0.690</td>
<td>198</td>
<td>$p&gt;0.05$</td>
</tr>
<tr>
<td>Mothers of full-term infants</td>
<td>100</td>
<td>138.38</td>
<td>16.195</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Discussion:**

The results of the present study represent that there is no observed significant difference between both groups of mothers and the hypothesis of the research is rejected in this regard. There have been little studies carried out in relation to the mothers’ attachment at both groups. For example, Borghini et al (2006) carried out their studies about the impacts of the premature infants’ birth. In this study about 50 families had premature infants and 30 families had normal ones. About 20% of premature infants’ mothers at 6 months and 30% were in 18th months had safe attachment. However, the obtained results of the present study had a little difference in terms of research literature. According to the early research findings, premature infants’ mothers were exposed to the problems of attachment and reduction of response to their infants [2]. They had also the symptoms of psychological issues [10]. Korja et al (2012) also studied the representation of attachment in mothers with premature infants at 12th month’s age of the infants. They also studied the relationship between the processes of attachment representation and depression after postpartum in 6 months of the infants. In this study 38 mothers with premature infants and 45 normal mothers were evaluated. The results indicated that there is no observed difference between both groups in terms of their distribution of three processes of balance, indiffERENCE and distortion; however, there was observed quantity differences between both groups. In addition, mothers’
depressive symptoms had a relationship with distorted representation process. According to Korja theory, in
de spite of the quantity based differences, it is possible that the mothers with premature infants make a balanced
attachment with their infants. In another research, the relationship between the unsolved mourning of a mother
in relation to the birth of a premature infant and the safe attachment of mother-infant were also assessed in this
case [23]. They evaluated 74 premature infants and their mother accordance to a cross-sectional study. Their
findings showed that when the mothers could not be able to solve their mourning in relation to their infant birth,
the probability of forming an unsecure attachment appears easily in this case. Korja et al in a study reviewed
the regular early relations of mother in the premature infant populations. Based on their study, the results
represented the fact that there is a significant difference between the mothers’ interactive relations and normal
infants of 6 months birth time. However, five studies of 18 studies showed that the quality of mother-infant
interaction in groups of premature infants is equal in compare to normal populations. The studies of mother and
infant attachment showed that premature infants and their mothers were not susceptible to many dangerous
unsecure attachment issues. They concluded that the relationship between mother-infant is very complex and
some communicative connections can increase the psychological risks. These findings can be represented that in
our society the birth of a premature infant cannot have a relationship on parents’ emotional affairs because the
next generation and motherhood is a kind of congenital issues in many mothers in this regard. One of the aims
of the present study is to evaluate the differences of mothers’ attachment styles at both groups of mothers. The
results of the present study showed that there is no found significant difference between the mothers’ attachment
styles at both groups of mothers in this pavement. According to the fact that the prematurity is a biological
problem and the mothers’ attachment has psychological background, type of mothers’ attachment cannot have a
relationship with the birth of a premature infant. Also, in this study the difference of marital satisfaction among
the mothers with premature infants and normal ones had been evaluated as well. In most researches the
relationship between the premature birth and other variables has been carried out in this regard. For example,
Gaertner, Eisenberg, Mehial and Spinrad also carried out the relationship between the morality and moods of
these infants and the parents’ marital satisfaction. The results of the study showed that when these infants have
got balanced behavior, their parents will have also better satisfaction in this case. The premature infants have
some biological problems such as neuron-cognitive issues that this may destroy their organizing abilities in
response to the physiological behaviors and environmental affairs to be reduced in this regard. The unsuitable
behaviors of the premature infants can destroy their parents’ responses potentially. The balance theory of
Samerooff A and Chandler suggests that the balancing non-optimized patterns can worse the infants’ behaviors
gradually. Hence, according to the researches of Mehial et al it is expected that the premature infants have
negative impacts on their parents due to their unorganized behaviors. However, according to the findings of the
present study there is no found significant difference between the marital satisfaction and premature infants’
mothers and normal ones. Because, they have been appeared in early times of the infants; According to the
complexity of the mothers and infants relationship together, it is suggested that these mothers’ traits should be
carried out in next future researches as well. It can be assumed that the both groups of the mothers in hospital
and before returning to the life had little relationship with marital satisfaction process. Therefore, it is suggested
to consider the whole mothers’ traits including their age, education level, social and economical status to be able
to measure their relationship with infants.

Also, it is recommended to apply revised programs in relation to caring planning during pregnancy periods
psychologically. Also, it should be emphasized on the effective family supports and their consultations
particularly their mates as protective role in this regard.

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