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HOW DO ATTACHMENT, BREASTFEEDING AND BONDING RELATE?

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HOW DO ATTACHMENT, BREASTFEEDING AND BONDING RELATE?

BAĞLANMA, EMZİRME VE ANNE-BEBEK BAĞI NASIL İLİŞKİLİDİR?

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ABSTRACT

Breastfeeding is not only beneficial for infants' health and immune system but is also crucial for bonding, communication and brain development. Previous research suggests that, parents' early experiences with their own attachment figures and their internal working models of attachment affect their parental sensitivity and the interactions they engage in with their own children (Bowlby, 1988; Bretherton, 1985; Crittenden, 1992; Main, Kaplan, Cassidy & Cicchetti, 1991; Main, Kaplan & Cassidy, 1985; Sroufe & Fleeson, 1986). Breastfeeding can be considered as one of the first interactions between the mother and the baby. This study aims to support mother and baby mental health by drawing attention to the importance of past relationship patterns on breastfeeding intentions and bonding quality with baby. The study has aimed to find a significant relationship between mother's attachment security and intentions in breastfeeding; as well as mother's attachment security and bonding quality with baby. This study has also aimed to find a significant relationship between mother's bonding quality with baby and breastfeeding intentions. The participants to the study were 1203 mothers that had a baby between ages 0-3. Mother's attachment security was assessed with AAS-R (Revised Adult Attachment Scale). MAI (Maternal Attachment Inventory) was used to measure mother's bonding quality with baby, and information about breastfeeding intentions were gathered through a breastfeeding questionnaire. The results of this study was consistent with the attachment theory and has shown that it is important to look at mother's past relationship patterns and their representations to understand breastfeeding intentions and mother to baby attachment. A significant relationship was found between mother's attachment security and intention in breastfeeding; as well as bonding quality with baby.

Keywords: attachment, breastfeeding, intentions, bonding, breastfeeding termination

ÖZET

Emzirme, sadece bebeklerin sađlıđı ve bađıřıklıđı ađısından deđil, anne-bebek bađlanması, iliřkisellik ve beyin geliřimi ađısından da ok nemlidir. Daha nceki yapılan alıřmalar, ebeveynlerin kendi ebeveynleriyle kurdukları bađlanma řekilleri ve isel alıřma modellerinin, kendi ocuklarıyla kurdukları etkileřimlerde etkili olduđunu ortaya koymuřtur (Bowlby, 1988; Bretherton, 1985; Crittenden, 1992; Main, Kaplan, Cassidy & Cicchetti, 1991; Main, Kaplan & Cassidy, 1985; Sroufe & Fleeson, 1986). Emzirme, anne ve bebek arasındaki ilk etkileřimlerden biridir. Bu arařtırma, gemiř iliřkilerdeki paternlerin emzirme niyetlerine ve bebek ile kurulan bađa etkisine dikkat ekerek, anne ve bebek ruh sađlıđı alanına destek olmayı amalar. Arařtırmada, annelerin bađlanma řekilleri ve emzirme niyetleri arasında anlamlı bir sonu bulunması beklenmiřtir. Aynı zamanda, annelerin bađlanma řekilleri ve anne-ocuk bađlanma kalitesi arasında da anlamlı bir sonu bulunması beklenmiřtir. Bu arařtırmaya 0-3 yař arası bebeđi olan 1203 anne katılmıřtır. Annelerin bađlanma řekli AAS-R (Revised Adult Attachment Scale) ile llmüřtür. Anne-bebek bađlanma kalitesi MAI (Maternal Attachment Inventory) ile saptanmıřtır. Emzirme niyetleri ilgili bilgiler de emzirme envanteri aracılıđıyla belirlenmiřtir. Bu arařtırmanın sonuları, bađlanma teorisiyle tutarlı olarak, emzirme niyetlerini ve anne-bebek bađlanmasını anlamak iin annenin gemiřteki iliřki paternlerine bakmanın nemli olduđunu ortaya koymuřtur. Annelerin bađlanma řekilleri ile emzirme niyetleri arasında anlamlı pozitif bir iliřki bulunmuřtur. Annelerin bađlanma řekilleri ile anne-bebek bađlanma kalitesi arasında anlamlı bir iliřki bulunmuřtur.

Anahtar kelimeler: bađlanma, emzirme, niyet, anne-bebek bađı, emzirme bitiři,

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TABLE OF CONTENTS

Title Page	i
Approval	ii
Abstract	iii
Tez Özeti	iv
Acknowledgments	v
Chapter 1: Introduction	1
1.1 Attachment Theory	3
1.1.1 Adult Attachment	4
1.2 Mother's Attachment History and Interactions with Baby	6
1.2.1 Maternal Sensitivity	8
1.2.2 Reflective Functioning	10
1.3 Caregiving and Attachment	11
1.4 Breastfeeding and Bonding	15
1.5 Depression, Breastfeeding and Attachment	19
1.6 Present Study	21
Chapter 2: Method	26
2.1 Participants	26
2.2 Measures	28
2.2.1 Breastfeeding Information Form	28
2.2.2 Demographic Form	28
2.2.3 Revised Adult Attachment Scale (AAS-R)	28
2.2.4 Maternal Attachment Inventory (MAI)	29
2.2.5 Edinburgh Postnatal Depression Scale (EPDS)	29
2.2.6 Percieved Support	29
2.2.7 Percieved Stress	30

2.3 Procedure.....	30
2.4 Data Analysis Plan	30
Chapter 3: Results.....	31
3.1 Descriptive Results	31
3.1.1 Pregnancy and Delivery	31
3.1.2 Breastfeeding Experiences with Older Children	31
3.1.3 Expectations About Baby.....	31
3.1.4 Health, Support and Stress	32
3.1.5 Breastfeeding Intentions.....	32
3.1.6 Mother’s Own Breastfeeding History	33
3.2 Hypotheses Tested	33
3.2.1 Mother’s Attachment Security (H1, H2, H3).....	33
3.2.1.1 Determinants of Feeding Method and Breastfeeding Termination	34
3.2.2 Bonding with Baby	37
3.2.3 Additional Analyses	38
3.2.3.1 Breastfeeding Experiences	38
3.2.3.2 Depressive Symptoms	38
3.2.3.3 Miscarriages	38
3.2.3.4 Bonding and Other Factors	39
Chapter 4: Discussion	40
4.1 Mother’s Attachment and Breastfeeding	40
4.2 Mother’s Attachment and Bonding with Baby	43
4.3 Attachment Security and Depression	45
4.4 Bonding and Breastfeeding	46
4.5 Limitations and Future Research	48
4.6 Conclusion and Clinical Implications	50
References	52
Appendix	67

LIST OF TABLES

1. Demographic Information of Participants.....	27
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LIST OF FIGURES

1. Factors influential in choosing feeding method 36
2. Factors influential in breastfeeding termination 37

LIST OF APPENDIX

Appendix A. Revised Adult Attachment Scale (AAS-R).....	68
Appendix B. Maternal Attachment Inventory (MAI).....	69
Appendix C. Edinburgh Postnatal Depression Scale.....	73
Appendix D. Breastfeeding Information Form.....	77
Appendix E. Demographic Form.....	82

Chapter 1: Introduction

Every single baby is born with the 'reflex' of sucking. Finding their way towards the nipple guided by the areolas, they have internally been coded to eat, bond and survive. Through breastfeeding, the baby is introduced to the outer world and starts making a sense of what s/he, and the world is about. During this time, the mother and the infant are considered to be in a symbiosis (Mahler, 1974), where they engage in a close and long-term biological and psychological interaction. Within this symbiosis, is born a bond between the mother and the infant where the infant learns to relate to the mother, and actually starts connecting herself with the real world. The connection with the world primarily occurs towards and through out the mother. This connection with the mother is based on an emotional bond. This emotional bond, by time becomes the basis of social, emotional, and cognitive development. The mother-infant relationship is based on two elements: mother's bond to her infant, in other words the maternal bond, and the infant attachment, which is the attachment of the infant towards the mother. (Bowlby, 1969; Bowlby,1982; Klaus & Kennell, Ballard 1982; Kumar, 1997). Mother to infant attachment is considered to be a unique, continuous love that develops between the mother and the child, which is a result of fulfilling, pleasurable interactions between the mother and the baby in the course of the child's first year of life. This bond is an important adaptation of the maternal role. (Muller, 1994; Mercer & Ferketich, 1994). The bond between the infant and the mother emerges from a behavioral system and fosters mother-infant proximity (Bowlby, 1969; Bowlby,1982). This proximity or in other words, the attachment is considered a primal need and is a basic component of human nature (Bowlby, 1998; Bowlby, 1988).

The aim of this study is to exhibit the impact of mother's attachment patterns on both intentions in breastfeeding and bonding quality with baby. There are many studies that have examined the relationship between mother's attachment patterns and

her breastfeeding outcomes (Cinar, Kose & Altinkaynak, 2015; Feldman, Weller, Leckman, Kuint & Eidelman, 1999; Newton, Peeler & Rawlins, 1986; Widström, Wahlberg, Matthiesen, Eneroth, Uvnäs-Moberg, Werner & Winberg, 1990; Feldman & Eidelman, 2007). However the literature is short on empirical studies that examine the relationship between mother's attachment patterns and her breastfeeding intentions. The studies focusing on breastfeeding intentions have put forth that is very important for future research to understand what influences mothers' intentions about breastfeeding, since they are considered important predictors of breastfeeding practices post delivery (DiGirolamo, Thompson, Martorell, Fein & Grummer-Strawn, 2005). Also, the evidence on previous studies examining the relationship of mother's attachment style and bonding quality with her baby were found to be limited (Jansen, de Weerth & Riksen-Walraven, 2008).

The literature review section will begin with the summary of attachment theory; adult attachment; the relationship of mother's attachment history and interactions with baby, and maternal sensitivity. Later on, the caregiving system will be explained and its relation to the attachment security will be discussed. The importance of breastfeeding, and where breastfeeding falls in terms of mother-baby bonding will be summarized afterwards. Following, information about depression and its effects on breastfeeding and mother-baby bonding will be given. Lastly, the relationship of mother's attachment security will be discussed in terms of breastfeeding intentions and mother-baby bonding related to the present research.

1.1 Attachment Theory

Attachment is considered a deep and lasting emotional bond that connects one to another (Ainsworth, 1973; Bowlby, 1969). Attachment concerns the nature of early experiences of children and the impact of these experiences on aspects of later functioning (Collins & Read, 1990; Fonagy, 1999). Children are born seeking relationships and therefore in terms of survival, they will do whatever it takes to keep their attachment figure around (such as crying, smiling and engaging in eye contact).

So the main goal of the attachment relationship is to be regulated and to engage in proximity and contact with the attachment figure (Bretherton, 1985). Although, what underlies this motivation of proximity and regulation is the desire of feeling secure (Bischof, 1975). This is why, one's attachment behavior becomes prominent when one is scared, tired, or is in need of safety or soothing (Bretherton, 1985). Bowlby has stated that, the stable image of an available and responsive attachment figure brings along feelings of security and continuity (Bowlby, 1982).

The infant by time internalizes the interactions and relationship patterns between him and the mother during his first years, and then constructs representations of these interactions. These representations are called, 'internal working models'. If the infant's needs are met, and s/he is comforted in distress and has a sense of security then the child concludes that s/he is valuable and the mother is reliable or consistent. As a result, these children can start discovering the external world by using their mother as a safe haven (Bowlby, 1988). On the other hand, if the infant's needs are not met, and s/he does not form a sense of security and protection but a sense of rejection instead, then the infant concludes that s/he is unworthy. These children, fail to internalize their attachment figure as secure base and therefore cannot discover the outer world, since the outer world seems anxiety provoking, and through the mother, they have not learned to develop the capacity to over-come this fearful situation. So,

the child generates an understanding of whether the mother will be available to his needs and be responsive to him, based on mother's mental organization (Main, Kaplan & Cassidy, 1985). Mother's emotional availability and responsiveness to her child's needs becomes the most important determinant of the attachment relationship and its quality (Bowlby, 1973). Depending upon, the way these relationship patterns are constructed, children form different attachment styles. (Bowlby, 1969; Ainsworth, 1969). And these patterns of attachment shape and determine one's future relationships (Ainsworth, 1969).

1.1.2 Adult Attachment

Even though, the attachment behavior is constructed and mostly observable during early childhood, it is also apparent in later life, particularly in stress-provoking cases.

Adult attachment requires two components in attachment representations: content and process. In content, representational models are constructed regarding the degree to which the 'self' is an acceptable and worthy person; the 'other' is accepting and can be depended when providing care; and the 'relationship' is providing security (Bretherton, 1985; Bowlby, 1973, 1979; Main et al., 1985; Sroufe, 1988; Sroufe & Fleeson, 1986). Individual differences in 'self', 'other' and 'relationship' are linked to differences in attachment security (Bretherton, 1985; Sroufe & Fleeson, 1986). In process, individual differences in mental representations of attachment have been linked to differences in information processing, including processes of defensive exclusion of information and emotion (Main et al., 1985). Adult romantic relationships, similar to infant-caregiver relationships, are considered the property of the attachment system. And these relationships lead to motivations such as caregiving and sexuality (Hazan & Shaver, 1994). Adult attachment requires reciprocity where both parties in a relationship provide and receive care and security, whereas in infancy, the mother is the only provider of security and care. The bond and

attachment of an adult becomes internal, representational at a thought-level, whereas a child seeks observable, physical (Sroufe & Waters, 1977) attachment such as being held, nursed and cared for (Main, Kaplan & Cassidy, 1985).

George, Kaplan, and Main (1984) have laid the foundations of the adult attachment by proposing the Adult Attachment Interview (AAI). Their aim was to examine adults' past relationship patterns. The way people expressed themselves and the way they depicted their past memories were critical in defining their attachment relationship. Quality, quantity, relevance and the manner of the discourse were evaluated to come up with one of three types of attachment styles: Secure-autonomous, dismissing and preoccupied.

Hazan and Shaver (1987) suggested that the adult attachment system, as well as the child attachment system has the same goal: ensuring a sense of security. The researchers assigned adults into three categories namely, secure, avoidant and anxious-resistant. They proposed that secure adults were characterized by being comfortable with intimacy and depending on others, without having thoughts of being abandoned; avoidant adults were characterized by not being comfortable with intimacy and being dependent on others, and anxious-resistant adults were characterized by seeking continuous proximity with others that may be seen as overwhelming. According to researchers, anxious-resistant adults were also found to be preoccupied with thoughts of rejection (Hazan & Shaver, 1987).

Later on, Bartholomew and Horowitz (1991) came up with a four- category model to explain the adult attachment system. This model included two components: a model of self and model of other. According to these models, they assigned adults to different attachment styles. Secure attachment, is defined by the integration of a positive self-model and a positive model of others. Individuals with secure attachment, have an internalized sense of self-worth and are comfortable with intimacy in their close relationships. Insecure attachment includes the categories: preoccupied, dismissing, and fearful. Preoccupied attachment is defined by the

combination of a negative self-model and a positive model of others. Preoccupied individuals strive for acceptance and validation from others, in order to ensure safety and security. Fearful attachment is defined by the integration of a negative self and other models. Fearful individuals, tend to be mostly dependent on others' acceptance and affirmation. Their negative expectancies on the other hand, cause them to avoid intimacy in close relationships, in order to eliminate the pain of losing or being rejected. Dismissing attachment is defined by a positive self-model and a negative model of others. Dismissing individuals avoid closeness in close relationships because of their negative expectations. But they tend to maintain a sense of self-worth by defensively denying the value of close relationships. (Bartholomew, 1990; Bartholomew & Horowitz, 1991).

1.2 Mothers' Attachment History and Interactions with Baby

Parents' early experiences with their own attachment figures and the internal working models of their attachment, affect parental sensitivity, reaction to infant attachment signals and interactions with their own children, such as being available to them, being supportive, and having mutual satisfaction and enjoyment in the relationship (Bowlby, 1988; Bretherton, 1985; Crittenden, 1992; Lynch & Cicchetti, 1991; Main, Kaplan & Cassidy, 1985; Sroufe & Fleeson, 1986; Van Ijzendoorn, 1995).

Mothers' attachment security was found to influence mothers' awareness, interpretation, responsiveness, attunement and caregiving behaviors towards her infant (Beebe & Steele, 2013; Feldman, Weller, Leckman, Kuint & Eidelman, 1999). In a research conducted by Haft and Slade (1989), mothers with secure attachment were found to be more attuned to their babies when compared with mothers with insecure attachment. Another important outcome of the study showed that securely attached mothers tend to attune to a broader range of infant's affective state, when insecurely attached mothers only attune to specific affective states.

Previous research has also suggested that mother's attachment security affects the attachment security of her newborn (Anisfeld, Casper, Nozyce & Cunningham, 1990). The declared effect of one's attachment security on her baby, supports the idea that warm, intimate and continuous interactions are crucial for infants to grow up being mentally and physically healthy (Bowlby, 1951; Hofer, 1994). The mother-baby interactions regulate the infant's behavior and physiology, by acting as a homeostasis for the baby (Hofer, 1994). These interactions derive from memories and expectations from one's own attachment history, and they influence and help evaluate one's contact with others (Bretherton & Munholland, 1999). In other words, the mother assimilates the experience of her baby to her representations of the past (Solomon & George, 1996; p.190). These attachment representations although have a base in mother's history, reflect mother's present state of mind and how she interprets the new relationship with her baby. As Fraiberg, Adelson and Shapiro put it together, in every nursery there are ghosts. They are the visitors from the unremembered past of the parents (Fraiberg, Adelson & Shapiro, 1975, p.387), which means when a baby is born and is with her mother; it is not just the two of them anymore: there are many dynamics present with them, in their dyadic interaction. Memories, emotions, thoughts, wishes, regrets all derive from mother's past relationship patterns, and they shape her future behavior, thus interactions with baby. When an individual (in this case, the mother) encounters a familiar scenario, representations of past relationship patterns and emotional experiences are consciously connected to the person (Shuren & Grafman, 2002).

To further explain how mother's past relationship patterns, influence the new relationship with baby, Main, Kaplan and Cassidy (1985) have stated that mothers of future disorganized children bring their own difficult attachment history to their interactions with their infants. These mothers potentially experience loss, abuse and/or trauma. Main, Kaplan and Cassidy defended that their own difficulties are mostly to interfere with responses and interactions with their infants. Additional to

this, Beebe, Jaffe, Markese, Buck, Chen, Cohen, Bahrnick, Andrews and Feldstein (2010) have conducted a '4 month mother-infant face-to-face communication' to examine the foundations of communication which predicted 12-month insecure attachment outcomes. They found that, these mothers with disorganized attachment fail to follow the direction of their baby's behavior. These mothers do not attune their emotional state to their infant's: they do not become more positive as their baby does, and fail to level down their concern when their baby becomes anxious. As a result, the baby cannot predict his/her mother's actions or emotions. This leads to a disrupted sense of agency since s/he feels like s/he does not have an impact on the mother.

Thus every time a mother reacts to, or interacts with her baby she is in the influence of her early parent-child relationships and projects these on to her parenting behavior (Bowlby, 1988; Bretherton, 1985).

1.2.1 Maternal Sensitivity

Maternal sensitivity is considered as one of the most important constructs of the mother-infant attachment; and is constituted of four factors: mothers' awareness of infant signals, accurate interpretation, appropriate response, and prompt response (Beebe & Steele, 2013; Wolff & IJzendoorn, 1997; Ainsworth, 1969). The four important factors of maternal sensitivity that lead to stronger mother-infant attachment are explained subsequently.

For a mother to be able to be aware of her infant's cues, she has to be accessible to the infant's cues in the first place. This means, she should not be ignoring or neglecting of baby's needs, but yet has to be 'there' to be able to receive her baby's cues. Also, it is important for mothers to be sensitive to even the minimal cues or signals of the infant, as in a state of alertness. Although, their interpretations of the cues may not be valid at all times, this alertness and awareness brings along, the understanding of being accessible by the baby.

For a mother to be able to interpret her infant's cues appropriately, other than awareness, she has to maintain freedom from distortion and empathy towards the baby. Although awareness is a very important component of the mother's sensitivity towards her child, not every mother who is aware of her baby's signals, is able to interpret the cues correctly. The baby might be crying due to hunger, but the mother can interpret that the baby is crying due to need of sleep. In order to interpret baby's signals accurately, mother's perception should be free from projections, denials and other defensive behavior. If the mother's perception is distorted, then she might carry her own wishes, needs or thoughts to the baby. For example, if a baby is crying at night due to a physiological need such as toileting, hunger or pain, and if the mother herself has difficulty with separation, she might conclude that her baby is crying because s/he wants to be close to herself. Yet, mothers who have less distorted perceptions will be able to evaluate their baby's signals accurately, due to the insight that they have.

It is also very important in terms of sensitivity, for a mother to have empathy towards her baby. If the mother can notice and understand baby's behavior or feelings, she then can act with empathy, which leads to positive interactions with the baby. Although, if the mother cannot understand or interpret baby's needs or thoughts, she will not be able to replace her self with the baby and understand what s/he is feeling. This situation on the other hand, may result in detachment between the mother and the baby, due to baby's understanding that s/he is not understood and contained.

One of the most crucial elements of sensitivity is mother's prompt responsiveness. It is very important for the mother to respond to her baby in a way that is appropriate to baby's interactions and the situation. In order to be prompt in responsiveness, the mother should be tracking her child's behavior. For example, she will hold her baby when crying, act accordingly by knowing how her baby is usually soothed: either by rocking the baby or singing a song to her/him. Or engaging in

playfulness when the baby is smiling and playful (Ainsworth, 1969).

1.2.2 Reflective Functioning

Reflective functioning is considered to be a mental function that serves the organization of the mental state constructs of people's behaviors. Reflective functioning is an expression of self-representation and contains the understanding of one's feelings, desires, ideas, behaviors, relationships and experiences (Fonagy, Target, Steele & Steele, 1998) This function leads to the capacity of differentiating between inner and external reality; symbolic and actual functioning; and also mental and emotional processes (Fonagy, Target, Steele & Steele, 1998). The development of the reflective functioning capacity occurs through the repetitive experience of a child's mental states being reflected on by a parent (or a caregiver). As the parent responds to child's distress with soothing purposes, and as a result reflects on his/her behavior, the child starts developing a sense of reflective functioning. The reflection and soothing bring intimacy and sameness, also provide the child with a coping behavior by laying emphasis on child's autonomy and separate-self by implying that the child's and parent's mind are same and different at the same time, from the child's mind (Fonagy, Target, Steele & Steele, 1998). Hence, the mother's capacity of understanding and interpreting the nature and purpose of the mental states (both of herself and her child), results in a psychological and a physical contentment and security in the child (Slade, Grienenberger, Bernbach, Levy & Locker, 2005). And maternal reflective functioning capacity, where mother serves as a holding environment for baby's mental states, is crucially important in terms of intergenerational transmission of attachment and thus, the mother-baby attachment (Fonagy et al., 2002, 1995; Slade, Grienenberger, Bernbach, Levy & Locker, 2005).

1.3 Caregiving and Attachment

Mother's responses to her baby develop within a behavioral system called 'The Caregiving System' (Bowlby, 1988). The caregiving system is developmentally and behaviorally connected to and has emerged in parallel to the attachment system. It involves infant's attachment, intergenerational transmission (where attachment experiences of past generations are transmitted) and cultural differences.

This caregiving behavior can be described as providing the adequate protection and care needed by the infant (George & Solomon, 1996); where care and protection are defined as being regulated by mother's prompt and convenient response to her infant's cues in the first year of life (Ainsworth, Blehar, Waters & Wall, 1978; Belsky & Isabella, 1988). Caregiving was found to be associated with attachment security. And is considered as mother's commitment to combine her own role and her own attachment needs with those of her child's, by finding an equilibrium between them. (George & Solomon, 1996). There has been found important connections between mothers' representations of primary relationship patterns with their own parental figures and mothers' maternal caregiving behavior. Mother's caregiving relies on conscious and unconscious evaluation of her child's signals; her own perception of danger or threat; her evaluation of the context; and her past representations of attachment (George, Solomon, 2008). Once one becomes a mother, she no longer maintains the role of a child, which is being protected. The mother's role shifts from being protected to providing protection to her own infant. The child on the other hand, evaluates his/her experiences with the mother and develops a sense of caregiving according to the quality of these experiences. (Sroufe & Fleeson, 1986; Bretherton, 1985). The child evaluates mother's caregiving behaviors within the context of proximity; physical and psychological contact; mother's responsiveness and satisfaction (Solomon & George, 1996). The baby seeks physical and psychological contact to ensure proximity with the mother. The

proximity and responsiveness results in satisfaction for both the mother and the baby. Baby's evaluation of the proximity and conclusion in satisfaction depends on certain variables.

A crucial element in mother's caregiving behavior that results in mother-infant attachment is reciprocity. Reciprocity is an important component of the mother-infant interaction and develops in the first weeks postpartum (Meltzoff & Moore, 1997). It requires the close attention of both the mother and the infant to each other's signals and expression. The mother and baby are expected to match each others gestures, such as smiling when the other smiles or imitate each others vocal and facial expressions by taking turn as if engaging in an actual conversation. Brazelton (1975) puts this together by resembling this situation to a 'dance' between the mother and the infant.

Synchrony is also considered to be an essential element of the mother-baby caregiving relationship. It is built around reciprocal behaviors that result in satisfaction between the mother and the infant. Synchrony requires the mirroring of feelings and behavior (Meltzoff and Moore, 1977). Isabella and Belsky define asynchronous mother-infant interactions as the following: "those considered to reflect one-sided, unresponsive, or intrusive behavioral exchanges" (Isabella & Belsky, 1991, p. 376). When the mother and the baby interact in a synchronized way, they can act by responding one another. Feldman (2007) has described this experience as "temporal coordination of micro level social behavior". This synchrony between the mother and the infant is known to result in self-regulation, symbolization and empathy. It was found that found that newborns synchronize leg movements with adult speech (Condon and Sander, 1974), and Brazelton, Koslowski, and Main (1974), during a face to face interaction, have observed that the mother and the baby adapt themselves to the others rhythm with repetitive rhythmic organizations. Synchrony between the mother baby during the first months postpartum was also found to be associated with good-enough attachment behavior between the mother

and the child (Feldman, 2007). This good-enough attachment behavior develops around mother's positive intentions of love, care and support and repairing capacity. The child picks up on these intentions and then a good-enough attachment between the mother and the infant starts forming. And the synchrony between the mother and the infant contributes to this relationship (Feldman, 2007).

Isabella and Belsky (1991) have conducted a research to assess how secure mother-infant pairs and insecure mother-infant differ in their interactions. They hypothesized that securely attached mother-baby pairs' relationship will show characteristics of synchrony, where as insecure mother-baby' pairs ' interactions will show characteristics of asynchrony. The results of their study showed that unresponsiveness to baby's cues, intrusiveness and being less involved, inconsistency were determinants of an insecure relationship. They concluded that mother-baby pairs with avoidant attachment maternal intrusiveness and overstimulation, while resistant pairs were poorly coordinated, under-involved and inconsistent. The researchers with this study have put forth the importance of how attachment security affects interactions with baby.

Evidence has associated mothers' attachment styles with mothers' feelings of closeness and behaviors toward their children (Rholes, Simpson & Blakely, 1995). Mothers with secure attachment were found to be feeling more close to their children compared to mothers with avoidant attachment and mothers with anxious-ambivalent attachment reported having feelings of less-closeness towards their children (Rholes, Simpson & Blakely, 1995). Researchers have also found that mothers with avoidant attachment patterns were less supportive with their children during a laboratory teaching task (Rholes, Simpson & Blakely, 1995). Another study was conducted by Edelstein, Alexander, Shaver, Schaaf, Quas, Lovas and Goodman (2004), to examine the relationship of parent's attachment style and their responsiveness towards their children during a stressful event. The stressful event in this case was a medical situation: application of injection. Children were videotaped to assess the degree of

reactions and also parental responsiveness. The results of this study have showed that children of parents with higher avoidant attachment patterns were more distressed compared to children of parents with lower avoidant attachment patterns. Also, parents with higher avoidant scores were observed to be less responsive towards their children compared to parents with less avoidant scores.

Mothers who remembered their own parents as being warm and responsive were found to be more comfortable with closeness and intimacy (Collins & Read, 1990). Securely attached adults are better able to respond adequately to their infant's attachment signals compared to dismissing or preoccupied adults. (Van Ijzendoorn, 1995). A secure attachment anticipates the ability and willingness to invest in caregiving. And insecure attachment intervenes with mothers' ability and willingness to invest in her offspring (Belsky, 1997; Chisholm, 1996; Van Ijzendoorn, 1995).

Mothers with secure attachment style are warmer, more sensitive and more involved as parents compared to mothers with insecure attachment style (Cowan, Cohn, Cowan & Pearson, 1996; Crowell & Feldman, 1989; Feeney, 2002). Mothers with secure attachment style are better in fostering secure child-parent attachment due to their engaging and responsive parenting behaviors (such as engaging in warm and accepting behaviors to respond to their children's needs and signals; by observing, interpreting and acting accordingly with child's cues, actions and language) compared to mothers with insecure attachment style (Rholes, Simpson & Blakely, 1995). And mothers with secure attachment styles have more responsive and positive caregiving behaviors (Van Ijzendoorn, 1995). Secure parents may not be prone to maintain an insecure mind, therefore they do not restrict or distort the perceptions of their baby's cues (Van Ijzendoorn, 1995). Previous research also put forth that, parents' attachment insecurity, negatively affects the parent-child relationship and child's socio-emotional adaptation to the world (Cowan, Cohn, Cowan & Pearson, 1996; Crowell & Feldman, 1988; Fonagy, Steele & Steele, 1991; Van Ijzendoorn, 1995).

It is proposed that dismissing parents rebuff their child's attachment behavior

in stressful situations, since the expression of such behaviors can act as a stimulus for unwanted attachment related memories. It is also suggested that dismissing parents tend to reject their child's request for attachment and create an insecure avoidant response (Van IJzendoorn, 1995). Preoccupied parents tend to focus on their own attachment experiences and therefore are unable to attend to their child's attachment cues (Van IJzendoorn, 1995).

Parents who are dismissing of attachment related memories and feelings have children with avoidant attachment patterns; parents who are anxiously preoccupied with attachment related issues have their infants with anxious attachment patterns; parents who are free and autonomous, have their infants with secure attachment patterns; parents who are unresolved, considering losses and traumas in their attachment history, have their infants classified as disorganized. (Ijzendoorn, 1995; Bartholomew & Shaver, 1998).

Mothers of securely attached children tend to evaluate caregiving based on situation, child's personality, needs, goals, and their own needs. Mothers of avoidant children evaluate their self and their child as being unwilling and unworthy by emphasizing the negative aspects of the mother-child interactions. These mothers are found to dismiss and devalue their child's attachment needs. Mothers of avoidant children are inclined to protect their child from a distance, engaging in mild rejection. Mothers of ambivalent children have the tendency of keeping their child close by encouraging dependency. They are also found to be insensitive to their child's cues. (Solomon & George, 1996).

1.4 Breastfeeding and Bonding

Breastfeeding is known to prevent a great amount of health and emotional problems for babies, children and mothers (Liu, Leung & Yang, 2013; Lawrence & Lawrence, 2010; Leung & Sauve, 2005). Morrow-Tlucak, Haude, Ernhart (1988), have suggested that breastfeeding is linked to cognitive development in children.

They have conducted a research and concluded that, those children who were breastfed for more than four months scored higher in a cognitive-developmental assessment, compared with children who were breastfed for less than four months.

Besides from its effects on cognitive development and health, breastfeeding is also crucial in emotional development. It is proposed that breastfeeding practices feed the development of the mother-infant bond (Klaus, Kennell & Klaus, 1995).

Another study by Klaus and Kennel (1976), showed that those mothers who breastfed their babies for the first three hours postpartum, and spend fifteen hours with them for the following three days, presented higher levels of emotional attraction towards their babies compared with those mothers who engaged in little postpartum contact. Past research also proposed that the skin-to-skin contact during breastfeeding increases a mother's desire to be with her baby (Meyer & Anderson, 1999) as well as her sensitivity to her infant (Feldman, Eidelman, Sirota & Weller, 2002). Feldman and Eidelman (2003) have declared that breastfeeding symbolizes certain maternal behaviors that strengthen the mother-infant emotional bonding due to physical contact, shared affects and interactions (Feldman & Eidelman, 2003). These maternal behaviors that lead to a stronger bond between the mother and the infant are formed during the early postpartum. Studies have also shown that mothers who breastfeed their babies compared to mothers who bottle-feed their babies, tend to show more interactive behaviors towards them. These interactive behaviors are considered as touching, gazing, and responsiveness during feeding practices (Lavelli & Poli, 1998; Kuzela, Stifter, & Worobey, 1990) Also, mutual touch, tactile stimulation and mother's gaze to baby were among factors that were became more prominent among breastfeeding mothers (Lavelli & Poli, 1998).

Besides the effects of breastfeeding practices on mother's sensitivity and attunement, research suggests that breastfeeding practices provide maternal satisfaction as well (Kavanaugh, Meier, Zimmermann, & Mead, 1997).

Examining the relationship of breastfeeding and attunement, past research has

revealed that direct feedback through nipple stimulation promotes mother-baby attunement during feeding interactions. The sensory communication between the mother and the infant during the close interaction of breastfeeding, provides mother with the information of what and how her baby is doing. Therefore, mother attunes to her baby's signals, communications and needs regarding baby's sensory feedbacks. This attunement between the mother and the infant is considered to play an important role in attachment security (Britton, Britton & Gronwaldt, 2006; Jaffe, Beebe, Feldstein, Crown, Jasnow, Rochat & Stern, 2001; Schore, 2000; Siegel, 2001). Additionally, mother's sensitive attunement towards her baby has been declared as one of the main determinants of positive parenting. Maternal attunement is also known to promote physiological, cognitive, and socio-emotional growth in children (Feldman & Eidelman, 2004; Feldman, 2007).

Maternal attachment, breast-feeding self-sufficiency and familial support are positively correlated with each other (Cinar, Kose & Altinkaynak, 2015) and self-efficacy is described as being the most important determinant of breastfeeding practices and duration (O'Campo, Faden, Gielen, Wang, 1992). Mothers with attachment approach orientations, where security of attachment is defined as having higher attachment approach orientation and lower avoidant approach orientation, are more likely to engage in breastfeeding practices. These mothers with attachment approach orientations also tend to breastfeed their children for longer, and they do continue breastfeeding their babies when they encounter breastfeeding related problems (Scharfe, 2012).

The attachment between an infant and his mother requires more than the fulfillment of the physiological needs. It also involves initial emotional security (Harlow, 1958). This emotional security is provided with the bond formed between the mother and the baby. Bonding is considered as the act of developing the core relationship between mother and child (Spinner, 1978). For a good-enough bond to develop, physical contact between the mother and infant must be happening in the

early postpartum period (Klaus, Jerauld, Kreger, McAlpine, Steffa & Kennell, 1972). Skin-to-skin contact during breastfeeding increases mother's care giving behavior and leads to healthy attachment of mother and baby. (Feldman, Weller, Leckman, Kuint & Eidelman, 1999; Newton, Peeler & Rawlins, 1968; Widström, Wahlberg, Matthiesen, Eneroth, Uvnäs-Moberg, Werner & Winberg, 1990). Research suggests that breastfeeding women seek greater proximity to their babies (Newton, Peeler & Rawlins, 1968; Widström, Wahlberg, Matthiesen, Eneroth, Uvnäs-Moberg, Werner & Winberg, 1990). And it is observed that the longer babies and mothers are kept together physically, the mothers show and engage in greater responsive caregiving behaviors (Feldman, Weller, Leckman, Kuint & Eidelman, 1999) and security of attachment in the child (Anisfeld, Casper, Nozyce & Cunningham, 1990). Since, breastfeeding requires physical holding of the infant and skin to skin contact, it may be inferred that the holding experience during breastfeeding practices lead to responsive caregiving behaviors in mothers and security of attachment in the child.

Hormones that serve milk production and milk ejection are known to affect maternal caregiving behaviors and pair bonding. Oxytocin affects the maternal bond by activating the behaviors that are beneficial for the infant's survival and by suppressing behaviors that may harm the infant (Kendrick, 2000). Exclusive breastfeeding is one of the important factors that affects the bonding quality between the mother and the infant. A research conducted by Cernadas, Noceda, Barrera and Garsd showed that, although the frequency of exclusive breastfeeding had decreased within 6 months period postpartum, one of the factors correlated with the longer duration of exclusive breastfeeding was found to be good mother-infant bonding (Cernadas, Noceda, Barrera, Martinez & Garsd, 2003).

Furthermore, it is suggested that the 'non-nutritive' features of the mother-infant interaction during breastfeeding such as attunement and sensory feedback may enhance infant attachment and bonding (Jansen, de Weerth & Riksen-Walraven, 2008). The interactions between the parent and the infant, such as

synchrony; symmetry; contingency; entrainment; play and autonomy; and flexibility lead to the construction of primary attachment patterns between them (Brazelton & Cramer, 1991).

Mothers' reports reveal that they prefer breastfeeding more compared to bottle-feeding in order to strengthen the mother-infant relationship (Arora, McJunkin, Wehrer & Kuhn, 2000; Gijsbers, Mesters, Knottnerus, Legtenberg & Van Schayck, 2005).

Studies have revealed that breastfeeding intention can be affected by both a woman's own breastfeeding attitude and also by the influence of people in her social network; considering others' perception of breastfeeding attitudes, support and the subjective norms. (Baranowski, Bee, Rassin, Richardson, Brown, Guenther & Nader, 1983; DiGirolamo, Grummer-Strawn & Fein, 2003; Freed, Jones & Schanler, 1992; Littman, VanderBrug Medendorp & Goldfarb, 1994; Scott, Landers, Hughes & Binns, 2001; DiGirolamo, Thompson, Martorell, Fein & Grummer-Strawn, 2005; Swanson & Power, 2005; Scott, Shaker & Reid, 2004).

Mothers who choose to bottle-feed declare the following factors as influencing their decisions: mother's perception of father's attitude; uncertainty regarding the quantity of breast milk, and return to work (Arora, McJunkin, Wehrer & Kuhn, 2000). Mothers have also reported that their partner's, mother's and midwife/nurse's thoughts were very important in terms of their decisions for both initiation and continuation of feeding practices (Swanson & Power, 2005; Freed, Fraley & Schanler, 1993; Shepherd, Power & Carter, 2000). Changing societal norms; increasing social support, empowering mothers with confidence and social approval is suggested to increase long-term breastfeeding practices (Rempel, 2004).

1.5 Depression, Breastfeeding and Attachment

It was found that almost 13 % of women experience postpartum depression after giving birth (O'Hara, & Swain 1996). It is known that postpartum depression

affects breastfeeding duration in a negative way, (Henderson, Evans, Straton, Priest & Hagan 2003) and that longer breastfeeding durations are correlated with lower postpartum depression symptoms (Hatton, Harrison-Hohner, Coste, Dorato, Curet, & McCarron, 2005; Mezzacappa, & Katkin, 2002; Ystrom, 2012). Research suggests that exclusive breastfeeding may help to reduce symptoms of depression from childbirth to 3 months postpartum (Figueiredo, Canario & Field, 2014). Depressive symptoms in mothers are linked with lower quality of mother- infant/child bonding. Evidence shows that, even mild symptoms of depression can affect mother-infant bonding in the first four months postpartum (Moehler, Brunner, Wiebel, Reck, & Resch, 2006). In a study conducted by Borra, Iacovou and Sevilla (2015), Breastfeeding intentions were found to be a mediator for maternal depression, where lowest risk of postpartum depression was found among mothers reported intention of breastfeeding their infants prior giving birth and who were actually able to breastfeed them after birth. And highest risk of postpartum depression was found among those mothers who again reported intention of breastfeeding their infants prior giving birth, but who were not actually able to breastfeed them after birth.

Pettem, West, Mahoney & Keller (1993) have conducted a study to understand the relationship of attachment patterns and depression. The participants of the study were given self-report questionnaires on both, attachment and depression. The researchers consistent with Bowlby (1973) have concluded that, people who have depressive symptoms maintain the characteristics of anxious-attachment style (Cole, Kobak; Pettem, West, Mahoney & Keller, 1993). These people were found to have a low sense of security, great desire for proximity and again a great fear of losing the other (Carnelley, Pietromonaco & Jaffe, 1994; Pettem, West, Mahoney & Keller, 1993). Researchers also noticed that, compulsive care seeking and angry withdrawal were also characteristics of people who showed higher levels of depressive symptomology. Researchers have explained these terms in the following manner: compulsive care-seeking people are highly dependent on the other; whereas in angry

withdrawal the person, aggressively withdraws from the other when his/her needs of security are not met (Pettem, West, Mahoney & Keller, 1993).

Previous research has put forth that one's attachment patterns are linked to their affective distress, as well as depression (Kobak & Sceery, 1988; Kobak, Sudler, & Gamble, 1991). Consistent with these findings, one's patterns of secure attachment were found to act as a shield and protect them from stress (Hammen, Burge, Daley, Davila, Paley & Rudolph, 1995).

1.6 Present Study

Many factors influence mothers' decision to breastfeed, including social, cultural, economic and psychological factors. Breastfeeding is not only beneficial for infants' health and immune system but is also crucial for bonding, communicating and brain development. Breastfeeding prevents a great amount of health and emotional problems. (Liu, Leung & Yang, 2013; Lawrence & Lawrence, 2010; Labbok, 2006). The World Health Organization recommends continued breastfeeding up to 2 years of age or beyond. The WHO also emphasizes the importance of the initiation of breastfeeding within the first hour of life; and the importance of exclusive breastfeeding. Mother's declared intention about breastfeeding, is considered as one of the strongest predictors of breastfeeding initiation, duration and practices. (Forster, McLachlan & Lumley, 2006; DiGirolamo, Thompson, Martorell, Fein & Grummer-Strawn, 2005; Kessler, Gielen, Diener-West & Paige, 1995; Lawson & Tulloch, 1995; Manstead, Proffitt & Smart, 1983; O'Campo, Faden, Gielen & Wang, 1992). Research shows that approximately 70% of pregnant women decide on their feeding method either before being pregnant or in their early pregnancy (Bailey & Sherriff, 1992; Dix, 1991). It was found that if mothers report ambivalent thoughts and feelings about breastfeeding, the likelihood of terminating breastfeeding practices soon after their delivery increases (Hood, Faed, Silva &

Buckfield, 1978).

At this point, intentions about breastfeeding initiation and termination are crucially important, concerning the infant's and mother's physical and mental health. Previous research suggests that attachment security is linked to health decisions. It affects health promotion; sleep quality and it is also negatively associated with risky behaviors; eating disorders and drinking problems (Brennan & Shaver, 1995; Scharfe & Eldridge, 2001). Previous research also emphasizes on the fact that breastfeeding decisions are related to mother's and baby's physical and mental health. Breastfeeding affect babies' health in terms of rates of survival; physical problems; morbidity; infectious and chronic illness; growth; IQ scores and visual development; cardiac risk factors; obesity; nutrition. Breastfeeding decisions affect mothers' health in terms of, maternal stress; postpartum depression (Hamdam & Tamim, 2012); blood loss; vigorous uterine involution; post-lactational bone status; return to fertility; breast cancer and ovaries cancer (Labbok, 2006).

This research proposes that it is important to look beyond demographics to understand breastfeeding intentions and show that attachment representations are linked with health decisions (Brennan & Shaver, 1995; Scharfe & Eldridge, 2001). If attachment representations can be linked to breastfeeding intentions, there might be advancements in protecting and supporting mothers' mental health pre or post pregnancy. It is important to ensure mothers' psychological health because a mother's mental health affects the mental and physical health of her baby. The first months postpartum are very important both for the mother and the baby in terms of their relationship. This study aims to serve the development of preventive programs or support programs that aim to focus on baby and child mental health by increasing breastfeeding rates and duration. Revealing the relationship of past relationship patterns; breastfeeding intentions and bonding quality with baby, may provide mothers with specialized support when they face breastfeeding problems and/or bonding problems. Also, the awareness may encourage the professionals in leading

mothers to therapy to support their caregiving behavior by looking at problems deeper and, ensuring a complete understanding when planning treatment plans. Outcomes of this study also aim to lead professionals to consider attachment-based interventions when working on breastfeeding problems and/or mother-infant bonding.

Considering all these, studying what affects the initiation and termination process and how the mother and child are affected from these outcomes are essential for future knowledge and preventive activities in the field such as supporting mothers and health care professionals to increase breastfeeding initiation and duration, and the quality of mother-baby bonding.

Mother-infant bonding can be affected by several factors such as: physical contact; hormones; mother's mental and physical health; baby's mental and physical health and support. The content of this research focuses on the relationship of intentions in breastfeeding initiation and termination; bonding quality and mother's attachment security.

Despite the fact that reflective functioning is an innovative theory building on the attachment theory, and has significant effects and importance on infant attachment, child development, and the quality of caregiving; this study approaches the mother-child relationship within the framework of bonding instead, and focuses on the behavioral aspects of the dyadic relationship.

Although attachment is formed in early childhood and therefore is a difficult variable to change, recent studies have shown that attachment experiences are also influenced by later relationships and that it is possible to change the attachment security in later life with constructing stable, consistent relationships (such as a spouse or a friend) and/ or with therapy (Blatt & Maroudas, 1992; Magai, 2008).

Even-though the relationship of breastfeeding and bonding has been examined with previous studies, it is suggested that the empirical evidence on the relationship between breastfeeding and maternal bonding is limited (Jansen, de Weerth & Riksen-Walraven, 2008). This study focuses on mother's attachment security and it's relation

to breastfeeding, whereas Jansen et al. 's (2008) study has chosen to examine the effect of breastfeeding on child's attachment. Their study has stated some methodological problems regarding the assessment of mother-infant bonding. They have proposed that maternal bond has not been well defined in the literature, therefore negative relationships between variables are available in the literature. Also, they stated that the instruments measuring the mother-infant bond are in the form of self-report questionnaires and are not evaluated, therefore fail to provide quantification of the mother-infant relationship. Cernadas, Noceda, Barrera, Martinez & Garsd (2003) have conducted a study to examine what affects the duration of exclusive breastfeeding in the first 6 months. They have concluded that longer durations of exclusive breastfeeding practices were connected to good mother-infant bonding. Also, Britton, Britton & Gronwaldt (2006) have studied the effects of breastfeeding on infant-mother attachment, by focusing on the effects of breastfeeding practices on child's attachment style and have not found any relationship between child's attachment security and breastfeeding. Nevertheless, these studies have not been particularly focusing on mother's attachment style as a predictor of both, intentions in breastfeeding and bonding with baby.

There is a comprehensive literature focusing on the importance of breastfeeding intentions on breastfeeding practices (Forster, McLachlan & Lumley, 2006; DiGirolamo, Thompson, Martorell, Fein & Grummer-Strawn, 2005; Scott, Shaker & Reid, 2004; Ryser, 2004), and studies that examine breastfeeding practices (duration, initiation) and attachment (Cinar, Kose & Altinkaynak, 2015; Feldman, Weller, Leckman, Kuint & Eidelman, 1999; Newton, Peeler & Rawlins, 1986; Widström, Wahlberg, Matthiesen, Eneroth, Uvnäs-Moberg, Werner & Winberg, 1990; Feldman & Eidelman, 2007). Yet those studies focus on the effect of breastfeeding intentions on feeding practices. Although they acknowledge the importance of intentions on actual experiences, and how intentions in breastfeeding can predict actual breastfeeding behavior, they declare that it is very important to

understand what influences mothers' intentions about breastfeeding, since they are considered important predictors of breastfeeding practices post delivery (DiGirolamo, Thompson, Martorell, Fein & Grummer-Strawn, 2005). So what affects mother's intentions is still considered a gap in the literature.

To help fill the gap in the literature, this study aims to examine whether mother's attachment style can predict her prenatal intentions as well as bonding quality with her baby. This study differs from the previous literature by particularly studying the effect of mother's own attachment style on her breastfeeding intentions before birth by offering a new perspective for clinical treatment and prevention programs and showing in what degree mothers' past relationship patterns affect their feeding intentions, and thus the new relationship with baby.

Hypotheses:

H1. Mothers with secure attachment will report more intention in breastfeeding their baby compared to mothers with insecure attachment.

H2. Mothers with secure attachment will report an intention of a longer duration of breastfeeding their baby compared to mothers with insecure attachment.

H3. Mothers with secure attachment will have a higher bonding quality with their children compared to mothers with insecure attachment.

H4. Mothers who have a higher bonding quality with their children will report more intention in breastfeeding their baby compared to mothers who have a lower bonding quality with their children.

H5. Mothers who have a higher bonding quality with their children will report a longer duration of breastfeeding their baby compared to mothers who have a lower bonding quality with their children.

Chapter 2: Method

2.1 Participants

1900 mothers have volunteered to participate “How do attachment; breastfeeding and bonding relate?” a study aimed at better understanding how one's own attachment patterns influences the bonding and feeding experiences with the next generation. Selection criteria included mothers having a baby between the ages 0-3. An online link from survey monkey was provided to mothers through daycares, and mother-baby groups in California, USA as well as social media. Of the group who volunteered to participation, 697 mothers have answered more than four questions, thus were excluded from the study, and the total number of participants remained 1203. Informed consent was obtained from each participant according to procedures approved by the Istanbul Bilgi University Ethical Committee.

The age range of mothers differed between 18-47. 94% of the mothers were married; 4% was single; 2% was separated. 67% of the mothers described themselves as having an average annual income; whereas 24% declared they were from upper income group; and 9% mothers classified themselves as being in the lower income group. 64% of the mothers described themselves as Australian; 7% American; 6% New Zealander; 5% British; 2% Canadian; 2% European and the rest of mothers being only a few from different nationalities. The sample turned out to be a well-educated group with 44% mothers holding postgraduate degrees; 44% of them having graduated from college; 12% mothers from secondary education. 60% of mothers were currently working whereas 40% of mothers did not.

Table 1. *Demographic Information of Participants*

	Percentage
	<u>%</u>
<u>Age</u>	
18-24	2
25-34	59
35-44	38
45+	1
<u>Marital Status</u>	
Married	94
Single	4
Separated	2
<u>Annual Income</u>	
High	24
Average	67
Low	9
<u>Nationality</u>	
Australian	64
American	7
New Zealander	6
British	5
Canadian	2
European	2
Other	14
<u>Education</u>	
Primary	0
Secondary	12
College	44
Postgraduate	44
<u>Work Status</u>	
Working	60
Not working	40

2.2 Measures

2.2.1 Breastfeeding Information Form

The breastfeeding information form was designed by the researcher to get detailed information on mother's breastfeeding experiences and included twenty-five (25) questions about previous pregnancies, miscarriages, mode of delivery, feeding method, perceived support during pregnancy, health problems, expectations about the newborn, breastfeeding intention, feeding method, weaning, and mother's own breastfeeding history.

2.2.2 Demographic Form

The demographic form included six (6) questions about participant's age, level of education, occupation, yearly income, marital status and nationality. It aimed to gather statistic information on the socioeconomic characteristics of the research population.

2.2.3 Revised Adult Attachment Scale (Collins, 1996)

The AAS-R is a likert-type 18-item self-report scale. The items are scored on a 5 point likert scale to measure adult attachment styles and group them accordingly: Secure; Anxious and Avoidant. The Cronbach's alpha coefficients of AAS subscales are as the following: .69 for Close, .75 for Depend, and .72 for Anxiety. Test retest correlations for a 2-month period were .68 for Close, .71 for Depend, and .52 for Anxiety. Since this research focuses on attachment security, participants are assigned into to two categories: secure and insecure. Therefore, anxious and avoidant categories of this scale are classified under Insecure for this particular research. Participants' answers were rated according to the AAS-R (Collins, 1990) manual and were they were categorized accordingly. The Cronbach's alpa coefficient for AAS-R subscales, in the present study were found to be as the following: .80 for Close, .81

for Depend, and .87 for Anxiety.

2.2.4 Maternal Attachment Inventory (Muller, 1994)

The MAI is a self-report, 26-item instrument that measures maternal affectionate attachment. The possible range of scores is 26–104. Higher scores indicate higher maternal attachment to the infant. Cronbach's alpha coefficient for MAI is 0.85. This scale was used to measure the bonding quality of a mother towards her infant. Mothers' responses of their feelings towards their babies were analyzed and scored according to the MAI (Muller, 1994) manual. The Cronbach's alpha coefficient for MAI, in the present study was found to be 0.89.

2.2.5 The Edinburgh Postnatal Depression Scale (Cox, Holden & Sagovsky, 1987)

The EPDS as an index of severity of postnatal depression. Mothers were asked to rate a series of 10 statements describing symptoms of depression felt in the past 7 days on a 4-point scale (ex, "I have blamed myself unnecessarily when things went wrong" and "I have been so unhappy that I have had difficulty sleeping"). Scores above 12 or 13 are likely to be suffering from depression. The reliability study confirms the good internal consistency of the global scale (Cronbach's alpha: 0.76) and its good short-term test-retest reliability (0.98). Mothers' answers were scored and interpreted according to the EPDS (Cox, Holden & Sagovsky, 1987) manual. This instrument was used for control purposes in this study. The Cronbach's alpha coefficient for EPDS, in the present study was found to be 0.87.

2.2.6 Percieved Support

Percieved support was scanned with a single question in the breastfeeding questionnaire. Mothers were asked to answer whether they had enough support throughout their pregnancy or not.

2.2.7 Percieved Stress

Percieved stress was scanned with a single question in the breastfeeding questionnaire. Mothers were asked to answer whether they had gone through serious stress during their pregnancy or not.

2.3 Procedure

Data was collected by an online survey. Convenient sampling was used to collect data from mothers. The link of the survey was provided to mothers via pre-schools, mother-baby groups, breastfeeding consultation groups in California, USA and social media. The survey included 79 questions that required no more than 15 minutes for the participants to answer. Information regarding demographics, feeding methods, attachment with baby, close relationship patterns were collected.

2.4 Data Analysis Plan

Data analyses were conducted by using IBM SPSS Statistics. Since there were no restrictions to participation to the study, no preliminary analysis was conducted to exclude specific data from the study. Outliers were detected to remove from the data analysis. Mothers' who have reported their ages as being above the outer fences of the data set, were removed from the data analysis. Those participants who had not answered more than four questions were removed from the data analysis. Also, participants who had not answered all the questions in the Revised Adult Attachment Scale, Maternal Attachment Inventory or Edinburgh Postnatal Depression Scale were removed from the data analysis immediately. T-test analysis and Chi Square analysis were used to test the relationships between the variables.

Chapter 3: Results

3.1 Descriptive Results

3.1.1 Pregnancy and Delivery

In total, 42.1% of the mothers reported that this was their first pregnancy; 34.2% had two pregnancies and 23.8% of them had 3 or more pregnancies. When asked about previous miscarriage experiences, 11.4% of mothers reported one miscarriage and 3.4% of mothers reported experiencing two or more miscarriages in the past. 68.3% of the babies were delivered by vaginal delivery; and 31.7% of babies were delivered by cesarean.

3.1.2 Breastfeeding Experiences with Older Children

Of the mothers who had previous pregnancies, 86.7% of the mothers were able to breastfeed their previous children; whereas 13.3% were not. Of the mothers who were able to breastfeed their previous children, 19.8% of them breastfeed their children between 6-12 months; 5.8% of them for less than 6 months; and 74.4% of the mothers for more than 12 months. When reasons of not breastfeeding previous children were examined, it has come to light that 22.7% of the mothers described the reason as baby-related; 26.2% of them as mother-related and 51.1% mothers said both the mother and the baby was influential in not breastfeeding.

3.1.3 Expectations About Baby

When mothers were questioned on baby expectancy, 88.4% of the mothers declared their newborn was an expected baby; whereas 11.6% of them stated that

their newborn was not expected. 79.9% of mothers indicated that they had a gender preference, and 20.1% of them said they did not have a gender preference regarding their newborn. Of those mothers who had a gender preference before their baby was born, 65.5% stated that the newborn had met their preference; where as 34.4% of mothers' preference had fallen short on expectancy.

3.1.4 Health, Support and Stress

30% of mothers reported that either their baby or themselves had gone through health problems during pregnancy. 89.2 % of the mothers had declared that they had enough support throughout their pregnancy, and 10.8% mothers stated that they did not receive any support. 32.4% of the mothers indicated that they went through serious stress during their pregnancy.

3.1.5 Breastfeeding Intentions

When mothers' feeding intentions (before giving birth) were examined, it was found that 89.8% of mothers had the intention of exclusively breastfeeding their baby; 0.8% of them intended to bottle-feed; whereas, 6.6% of mothers' feeding intention was mixed-methods, and 2.8% of them reported that they had not thought about their feeding intentions. It was also found that 15.1% of these intentions changed after giving birth; but 84.9% of mothers were consistent with their decisions. 98.2% of mothers reported that they were able to breastfeed their infants (regardless of duration). Mothers were also questioned on their preferred breastfeeding termination time. 82.8% of the mothers responded that they wanted to breastfeed for more than 12 months; 14.7% of mothers preferred to breastfeed their babies for 6-12 months and 2.5% of mothers preferred to breastfeed their children for less than 6 months. 88.6% of the mothers had decided on their termination time after giving birth; whereas 11.4% of mothers had made their minds before giving birth to their babies.

3.1.6 Mother's Own Breastfeeding History

Mothers' own breastfeeding history was also addressed: 81.8% of the participant mothers had been breastfed when they were young, whereas 18.3% of them were not. Of these breastfed mothers; 31.9% of them were breastfed for 12 months or more; 38.5% for 6-12 months, and 29.6% for less than 6 months. Of those mothers who were not breastfed when young; 5.1% reported they were not breastfed due to baby-related factors; 65.2% reported mother-related factors and 29.7% stated that it included both parties and their reasons of not being breastfed were both baby and mother related.

3.2 Hypotheses Tests

3.2.1 Mothers' Attachment Security (H1, H2, H3)

31.9% of the participant mothers were classified as insecure and 68.1% of mothers were classified as secure with respect to attachment. When insecure attachment was divided into subgroups, 152 mothers were categorized as having a dismissing attachment; 138 of them as having fearful attachment; 93 of them as preoccupied attachment and 817 of them as having secure attachment. A chi-square test of independence was performed to examine the relation mother's attachment security (secure vs. insecure) and her intention in breastfeeding. Fearful, Preoccupied and Dismissing categories were grouped under insecure attachment to be tested. H1 was confirmed and the relation between these two variables was found to be significant, $X^2(1, N = 1203) = 6.762, p = .009$. So, secure mothers were more likely to intend to breastfeed their babies compared to insecure mothers. The odds ratio of this analysis was found to be, OR= 1.65, which indicates that those mothers with secure attachment were 1.65 times more likely to intend to breastfeed compared to insecure mothers. Mothers' bonding levels with their babies were analyzed in terms of their attachment security. H3 was confirmed and it was found that there was a significant

difference between secure mothers ($M=97.50$, $SD=5.865$), and insecure mothers ($M=95.80$, $SD=6.512$) in terms of bonding levels, $t(683.400)=4.354$, $p =.001$. Secure and insecure mothers were compared for their intention of breastfeeding duration, but H2 was not confirmed $X^2(1, N =1203) = 0.90$, $p =.764$; chi square results showed no significant difference between secure mothers and insecure mothers for the above mentioned analysis.

3.2.1.1 Determinant Factors of Feeding Method and Breastfeeding Termination

The percentages of mother's choices for each group (secure mothers vs. insecure mothers) were calculated to reveal which factors were preferred commonly as determinants of feeding method and breastfeeding termination.

The most common factors influential in choosing feeding method for secure mothers were reported as the following: baby's health, personal beliefs, mother baby bonding, and education. Insecure mothers mostly reported the following factors affective for feeding method: baby's health, mother's mental health, mother's physical health, personal beliefs, mother-baby bonding (see Figure 1).

The most common factors influential in deciding on breastfeeding termination for secure mothers were as follows: work/school return, mother's pregnancy or plan for next pregnancy and self-weaning (infant's biting, losing interest, being old enough to be weaned). Insecure mothers in large part reported fatigue, mother's pregnancy or plan for next pregnancy and self-weaning (infant's biting, losing interest, being old enough to be weaned) as factors effective on termination decision (see Figure 2).

It was concluded that although the most common factors effective for choosing feeding method and duration were similar among mothers with secure attachment and insecure attachment, there are particular differences that affect secure mothers and insecure mothers differently.

When examining factors effective for feeding decisions, a distinguishing

factor between secure mothers and insecure mothers was spotted: Besides the common factors, secure mothers relied on breastfeeding education when insecure mothers did not report education as often as secure mothers, and insecure mothers relied on mother's mental health, when secure mothers did not specify it as important as insecure mothers.

When a closer look is taken towards factors effective for breastfeeding termination, once again it is noticeable that although secure mothers and insecure mothers had given importance to common factors, there was found differences among them as well. Secure mothers drew apart from insecure mothers by declaring work/school return as an important factor effecting their breastfeeding termination decision. Where as, insecure mothers reported fatigue, aside from the common factors they shared with secure mothers.

What was more important to secure mothers was commonly found to be important for insecure mothers with considerable variance, in terms of feeding method and termination decisions.

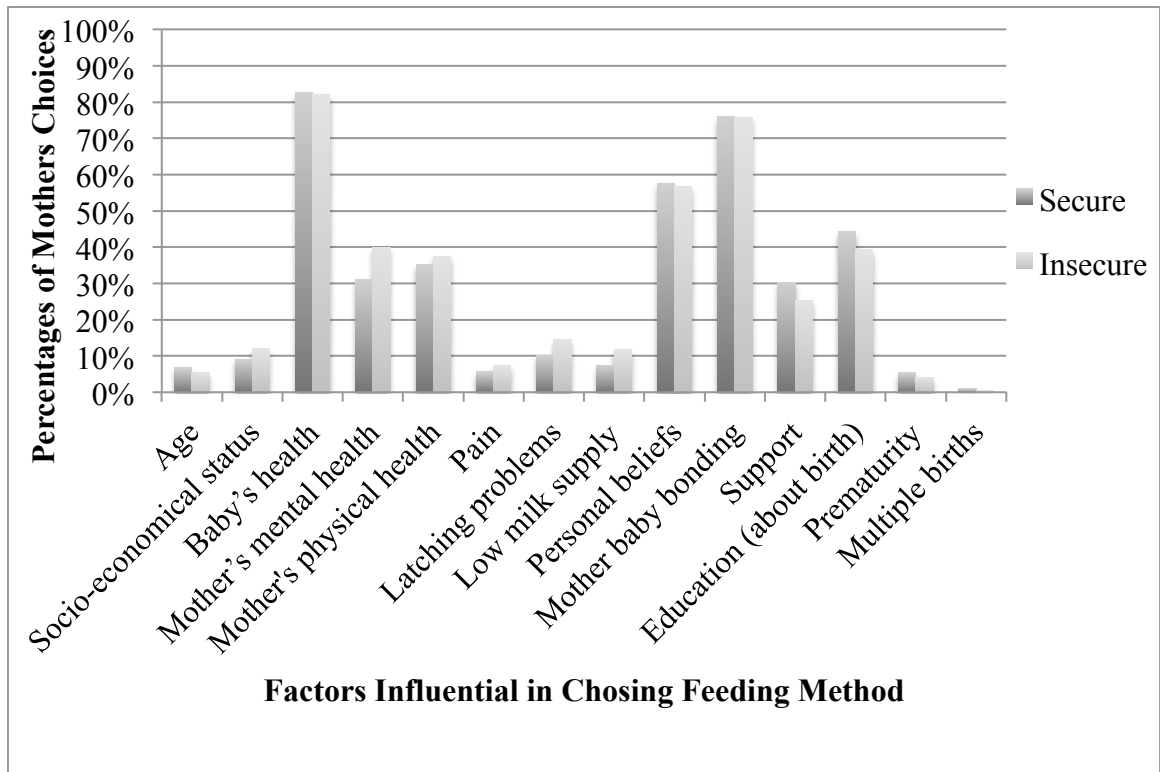


Figure 1. Factors influential in choosing feeding method. This figure illustrates the factors that affect secure and insecure mothers' decisions about feeding methods.

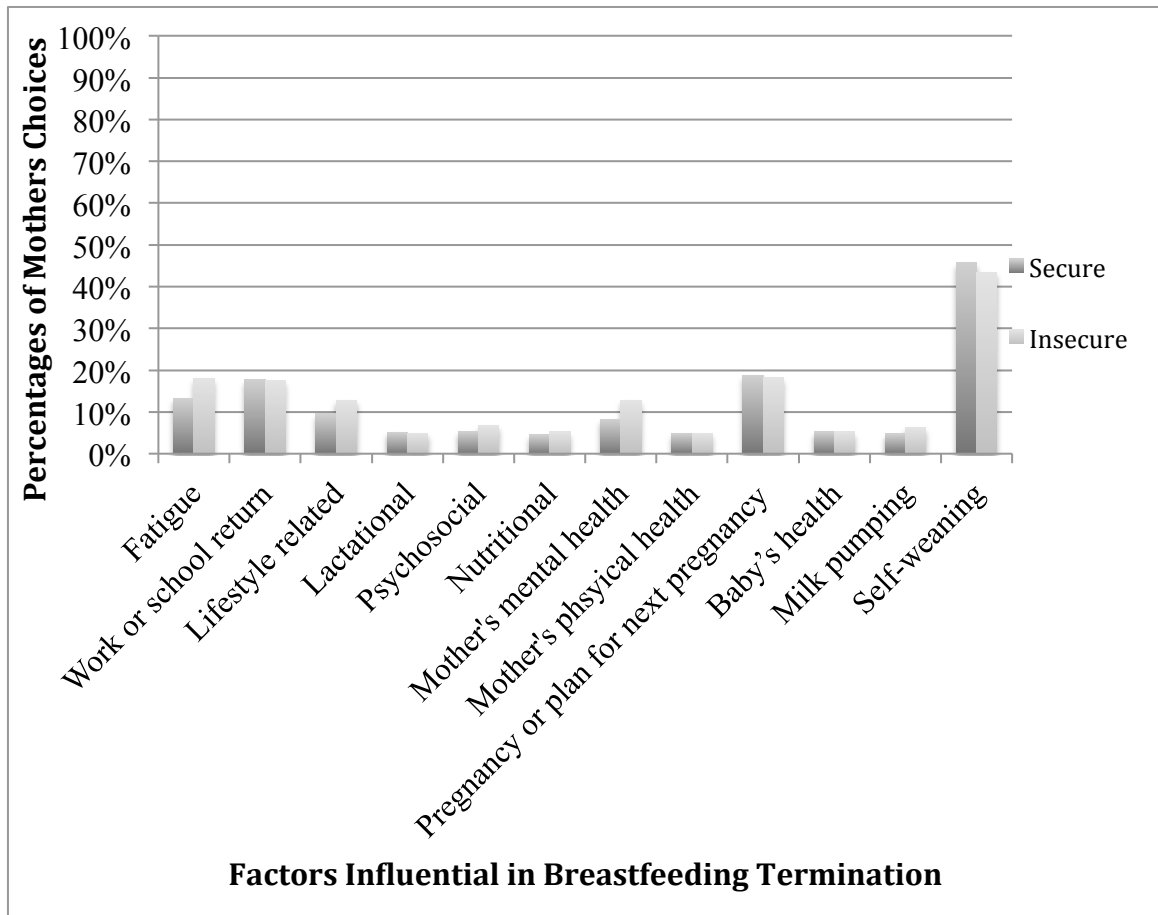


Figure 2. Factors influential in breastfeeding termination. This figure illustrates the factors that affect secure and insecure mothers' decisions about breastfeeding termination.

3.2.2 Bonding with Baby (H4, H5)

The mean score of bonding was 96.95 (SD = 6.128). The quartiles of the bonding scores were as the following: 94.00; 98.00; 102.00. H4 and H5 were not confirmed. There was no significant difference between mothers with higher bonding levels and lower bonding levels in terms of intentions in exclusive breastfeeding and intentions in breastfeeding duration (more than six months vs. less than six months).

3.2.3 Additional Exploratory Analyses

3.2.3.1 Breastfeeding Experiences

Mother's own history of breastfeeding (whether she was breastfed or not), was not found to be related to the feeding experience with new baby (whether the mother breastfed the baby or not), $X^2(1, N = 1200) = 2.765, p = .096$. Mother's history of breastfeeding duration was also not associated with the breastfeeding duration of her newborn, $X^2(1, N = 754) = .000, p = .988$.

3.2.3.2 Depressive Symptoms

The mean score of depression was 7.68 ($SD = 4.758$). Based on EPDS, it was found that 1.1% mothers ($n=13$) scored 12 or higher, which represented the risk for clinical depression. Mother's with secure attachment ($M=6.13, SD=3.846$), and insecure attachment ($M=11.00, SD=4.826$) significantly differed in terms of depressive symptoms, $t(619.297)=-17.351, p = .000$. Mothers' attachment security was found to have a significant negative association with depressive symptoms. As mothers' attachment security increased, their depressive symptoms decreased. Mothers' stress level during pregnancy was related to the level of her depressive symptoms. Mothers who have experienced serious stress during pregnancy ($M=8.99, SD=5.100$) were significantly different from mothers who have not experienced serious stress during pregnancy ($M=7.07, SD=4.452$) when compared in terms of depressive symptoms levels, $t(679.335)=6.350, p = .000$. Perceived support during pregnancy was not found to be associated with depressive symptoms, ($M1 = 7.38, SD1 = 4.625$ and $M2 = 10.25, SD2 = 5.081$), $t(1200)=-6.607, p = .000$.

3.2.3.3 Miscarriages

Secure and insecure mothers were compared for their number of miscarriages, $X^2(1, N = 1203) = 1.417, p = .234$ Chi square results showed no significant difference between secure mothers and insecure mothers for the above mentioned analysis.

3.2.3.4 Bonding and Other Factors

Mother-baby bonding was not found to be associated with feeding methods (breastfed vs. not breastfed), $X^2(1, N = 664) = 1.078, p = .299$. Baby expectancy ($M1$ (expected baby) = 96.97, $SD1 = 6.178$ and $M2$ (non expected baby) = 96.75, $SD2 = 5.792$), $t(1195) = .404, p = .686$, $t(1198) = 2.062, p = .039$, gender preference ($M1$ (gender preference met) = 96.19, $SD1 = 6.411$ and $M2$ (gender preference not met) = 96.53, $SD2 = 5.843$), $t(408) = -.523, p = .601$, perceived support during pregnancy ($M1$ (support available) = 96.99, $SD1 = 6.120$ and $M2$ (support not available) = 96.68, $SD2 = 6.226$), $t(1200) = .536, p = .592$ and perceived stress ($M1$ (stress available) = 96.50, $SD1 = 6.190$ and $M2$ (no stress) = 97.18, $SD2 = 6.091$), $t(1200) = -1.780, p = .075$ during pregnancy were also not found to be associated with the quality of mother-baby bonding.

Chapter 4: Discussion

This study's main goal was to link mother's attachment patterns with her intentions in breastfeeding initiation and duration, as well as the bonding quality with baby. This study has aimed to add a new perspective to baby mental health programs by creating awareness in mother's mental health and its significance in baby's early life.

According to the analysis, a significant positive relationship was observed between mother's attachment security and intention in breastfeeding. Moreover, in the analysis of mother's attachment security and her history of breastfeeding, a significant association was found. Nevertheless, no significant association was observed between mothers' attachment security and intention in breastfeeding termination.

Moving towards the relationship of mothers and babies, a significant positive association was observed between mother's attachment security and bonding quality with her baby. In contrast to these findings, no significant relationship was found between breastfeeding intentions and bonding quality.

The findings of the study will be discussed within the relationship of attachment security, breastfeeding and bonding.

4.1 Mother's Attachment and Breastfeeding

This study has shown that it is very important to go beyond the demographics

and look at past relationship patterns and their representations to understand breastfeeding decisions and mother to baby attachment. The results of this study have shown that mother's attachment security is related to her intention in exclusive breastfeeding.

As past research suggests (Forster, McLachlan & Lumley, 2006; DiGirolamo, Thompson, Martorell, Fein & Grummer-Strawn, 2005; Kessler, Gielen, Diener-West & Paige, 1995; Lawson & Tulloch, 1995; Manstead, Proffitt & Smart, 1983; O'Campo, Faden, Gielen & Wang, 1992), mother's declared intention about breastfeeding, is considered to be one of the strongest predictors of breastfeeding initiation and practices. Research suggests important associations between the intentions in breastfeeding experiences (initiation and duration) and actual experience of breastfeeding. It was found that women who have intended not to breastfeed their infants or who have chosen to breastfeed their infants for a short amount of time, were less likely to continue or initiate breastfeeding practices. What determines these intentions in the prenatal period was a topic suggested by the researchers to be examined by future researches. This study has taken a closer look at the relationship of attachment security and breastfeeding intentions and have found a positive association.

The data of this research suggests that mothers who intend to breastfeeding their babies in the prenatal period may more likely to have a secure attachment. So it may be suggested that intentions can possibly give early signs of attachment security. Compared with insecure mothers, mothers with secure attachment are more likely to breastfeed their infants. These results show that, secure mothers, due to their personal organization, tend to choose breastfeeding even before the birth of their baby. The results of odds ratio also indicate that mothers with secure attachment were 1.65 times more likely to intend to breastfeed compared to insecure mothers. This information represents a positive relationship between attachment security and intentions in breastfeeding and is also relevant with the view that secure mothers'

organization and/or history affects their choices about their new baby. Examining the relationship of attachment security and breastfeeding intentions has provided the field with new information. This result has put forth the importance of how mothers' attachment security, affects their caregiving behaviors (Beebe & Steele, 2013; Feldman, Weller, Leckman, Kuint & Eidelman, 1999; Bowlby, 1988; Bretherton, 1985). Mothers' attachment style seems to influence the evaluation of the interaction between herself and her baby as well as the contact that she will establish with her baby (Bretherton & Munholland, 1999).

Mothers with secure attachment were found to be feeling more close to their children compared to mothers with avoidant attachment. And also, mother's who remembered their own parents as being warm and responsive were more comfortable with closeness and intimacy (Collins & Read,1990). Secure mothers' intentions of exclusive breastfeeding can be understood in this context, since breastfeeding can be considered as a 'close' and 'intimate' act. Secure attachment predicts the proficiency and willingness to invest in caregiving (Belsky, 1997; Chisholm, 1996; Van Ijzendoorn, 1995). Previous reserch suggests that insecure attachment intervenes with mothers' ability and willingness to invest in her newborn (Belsky, 1997; Chisholm, 1996; Van Ijzendoorn, 1995). One may argue that, since breastfeeding can be considered as a physical and emotional investment to the baby, the outcomes of this study support the idea that secure mothers are more willing to invest in their newborns, by intending to breastfeed them compared to insecure mothers. Past research suggested that mothers with attachment approach orientations are more likely to engage in breastfeeding practices, regarding duration and consistency when difficulties are faced (Scharfe, 2012). These outcomes may be evaluated in the context of attachment patterns, thus working models. Since, working models determine one's understanding and interpretation of relationships and situations, it may be proposed that it shapes one's experiences. Breastfeeding intentions in this manner can be considered as experiences predicted and shaped by

mother's own attachment history. The results of this study add to this information and suggest that mothers who have a higher attachment security also intend to engage in breastfeeding practices, compared to insecure mothers. Therefore, the results of this study support the facts the hypothesis that mother's attachment security is crucial in predicting breastfeeding practices and as a result may be very important in preventing breastfeeding problems with newborns.

Although, mother's attachment security was related to intentions in breastfeeding, no association was found between mother's attachment security and intentions in breastfeeding duration. Findings were contrary to what was expected. Although, the intention in breastfeeding duration is considered an important determinant of the actual termination process and time (DiGirolamo, Thompson, Martorell, Fein, Grummer-Strawn), it may be interpreted that one's attachment organization has no influence in prenatal termination intention. One may also infer that, intention in breastfeeding is more important than the duration it's self. So it may be crucial for mothers to engage in the first intention and decide to breastfeed but after the initial intention, the duration is not a primary concern. Although, what affects the termination intentions may be another subject to be addressed by future studies.

4.2 Mother's Attachment and Bonding with Baby

Another important outcome of this study showed that mother's attachment security affected the bonding quality between a mother and her baby. Mothers with secure attachment style scored higher in the mother to infant bonding scale compared to mothers with insecure attachment. Consistent with attachment theory and previous theories, this study has highlighted the fact that parents' early experiences with their own attachment figures affect their interactions with their own children (Bowlby, 1988; Bretherton, 1985; Crittenden, 1992; Main, Kaplan, Cassidy & Cicchetti, 1991; Main, Kaplan & Cassidy, 1985; Sroufe & Fleeson, 1986).

Babies when born are in need to feel safe and secure. Mothers try to provide their baby with a safe environment and an initial emotional security, which in the end results in mother-infant bonding. This emotional security is constructed by repetitious interactions between the mother and the baby. In every interaction, both the mother and the baby test each other according to understand each others needs, affects and behaviors and see how much they can be attuned to each other. Both the mother and the baby learn to accommodate to each other during different affective situations. The containment of baby's feelings, affective states and experiences, specially in times of distress leads to healthier mother-baby bonding. The results of this research has put forth that, these behaviors have a basis in mother's own history. The mother-infant bond builds within the caregiving experience, and the findings of this study suggest that the capacity of giving-care derives from the capacity of transferring whatever one has within. Parallel to past research, findings show that the quality of the mother-infant bond is determined as a result of mother's combination of her own attachment needs and those of her child (George & Solomon, 1996). One may argue that, secure mothers compared to insecure mothers are more aware of their babies' signals, can provide a stronger initial emotional security and a stronger sense of protection. Also, secure mothers are more comfortable with proximity and physical or/ psychological contact, which are fundamental elements of mother-infant bonding. These findings have built on past research (Rholes, Simpson & Blakely, 1995; Van Ijzendoorn, 1995), by drawing attention to the fact that secure mothers engage more in warm, responsive behaviors compared to mothers with insecure attachment. With this study, it has come to light that, mother's attachment security is significantly important in ensuring a healthy bond with her newborn.

Sroufe and Fleeson (1986) have suggested that one may seek to maintain or reestablish relationships that are compatible with their own past relationships patterns or in other words, attachment relationships. They have argued that people engage in such relationship patterns to be able to continue the congruence and stability within

themselves. One may argue that, the significant relationship between one's attachment security and bonding quality with baby can be understood in this context. Hence, secure mothers tend to continue their warm and intimate relationship patterns by forming better bonds with their infants.

The association of mother's attachment security and bonding quality with baby can also be discussed in terms of maternal sensitivity. Maternal sensitivity is one of the most important determinants of the mother-infant attachment. Consistent with previous research, (Beebe & Steele, 2013; Feldman, Weller, Leckman, Kuint & Eidelman, 1999; Haft and Slade, 1989), one may infer that the differences in quality of mother-infant relationship among secure and insecure mothers may be a result of differences in maternal sensitivity among the two groups. As previous research suggests, mothers with secure attachment due to their organization are more attuned to their babies compared to mothers with insecure attachment. Hence, the maternal sensitive behaviors such as awareness, interpretation, responsiveness and attunement of secure mothers might have led to a more sensitive relationship between the mothers and their infants, and therefore may have resulted in differences in bonding qualities.

The findings of this study are similar to the findings of previous research and they draw attention to the fact that adult attachment measures can be considered as predictors of other close relationships. (Selcuk, Günaydin, Sumer, Harma, Salman, Hazan & Ozturk, 2010).

4.3 Attachment Security and Depression

This study, consistent with previous research has also revealed that attachment security was associated with lower depressive symptoms (Bifulco, Moran, Ball, Bernazzani, 2002; Pettem, West, Mahoney & Keller, 1993; Hammen, Burge, Daley, Davila, Paley & Rudolph, 1995). The findings of this study highlight the fact that mothers with insecure attachment style due to their internal working models,

might have an understanding of the 'other' as not available, and view themselves as worthless or invaluable. They might also be feeling less comfortable with closeness and having thoughts of abandonment. These feelings and thoughts may possibly have led insecure mothers to experience depressive feelings and symptoms. Whereas, secure mothers' sense of self of being worth, and 'other' as being available (Barthomelow & Horowitz, 1991), might have been a protective factor and kept them away from experiencing depressive symptoms.

It may be concluded that attachment security is considered a preventive factor of post-partum depression and thus mothers with secure attachment are more likely to overcome the initial difficulties that arise after birth.

4.4 Bonding and Breastfeeding

As opposed to what was expected, breastfeeding intentions (initiation and duration) or outcomes (whether the mother has breastfed the baby or not) were not associated with the level of mother-baby bonding. The results of this study were inconsistent with previous research (Klaus, Kennel and Klaus, 1995; Klaus & Kennel, 1976; Lavelli & Poli, 1998; Kuzela, Stifter, & Worobey, 1990) thus, feeding method was not found to be associated with the bonding quality between a mother and an infant. Mothers who have not breastfed their infants were able to ensure a bond in a similar quality as mothers who have breastfed their infants. Although Feldman and Eidelman (2003) have argued that breastfeeding leads to the development of a stronger emotional bond, the results of this hypothesis, consistent with Harlow (1958) and Bowlby (1958) demonstrate that the mother-infant interaction in itself, apart from the feeding type define the quality of the bond between the mother and the baby. Brazelton and Cramer have proposed that the interactions between the parent and the infant, such as synchrony; symmetry; contingency; entrainment; play and autonomy; and flexibility led to the construction of primary attachment patterns between them (Brazelton & Cramer, 1991). Findings show that, these interactions between the

mother and the baby can be available in many aspects of the mother-baby relationship and thus, they are not special to the breastfeeding experience only. If the mother is available to sooth her baby in times of distress, if she can conclude with appropriate interpretations of her baby's cues, and in response communicate back to the baby in a containing manner; if the mother is able to attune herself with her baby's emotions and states, and acknowledge her as a separate mind and therefore flex according to her/his special needs; engage in physical contact, eye contact; maintain reciprocity and flow with the dynamics of their own unique relationship, then regardless of the feeding-method a good-enough mother-baby bond will be constructed.

These findings may also be discussed from a biological perspective. Kendrick (2000) had referred to the effect of oxytocin on mother-infant bond. He had proposed that oxytocin produced during milk production and ejection influences mother's bonding behavior. Although, one may argue that the oxytocin hormone is not only produced during milk ejection but also during pregnancy and birth. So looking from a biological perspective, mothers whether they breastfeed their infants or not, are prone to maintain good-enough bonds with their babies.

Jansen, Weerth, Riksen-Walraven (2008) have proposed that there were not enough empirical evidence on researches that examined the association of breastfeeding and mother-infant relationship. They have proposed that one of the reasons why existing researches may have failed to show an association between mother-infant relationship and breastfeeding might have been methodological problems of the studies. Yet, the results of this study support their findings in failing to provide associations between the two variables.

These results show that mother-baby bonding occurs beyond the breastfeeding experiences and decisions and that breastfeeding is not the only determinant of mother-baby bonding. The fact that there are many possible fulfilling and pleasurable interactions other than breastfeeding, for a good-enough bond to form between the mother and baby is highlighted with this research (Harlow, 1958; Jansen, de Weerth

& Riksen-Walraven, 2008).

Another important factor that might have led to an insignificant association between bonding and breastfeeding is the capacity of reflective functioning (Fonagy, Target, Steele & Steele, 1998). Mothers recognition of her infant, and matching her baby's mental state with hers, by acknowledging the infant's individual mind and being, leads to the development of reflective functioning in the baby and thus, these experiences result in a stronger bond and lead to the development of the attachment between the mother and the infant. Reflective functioning proposes that the determinant of the bond between the mother and the child is not the behavioral aspect of mother-infant relationship but mainly develops around how mother thinks of the child. So, the situation may be that the mother-infant bond might have been better understood in the framework of reflective functioning and yet might have been insufficiently understood with a bonding measure only.

4.5 Limitations and Future Research

One of the limitations of this study was that, a large number of participants were contacted through online surveys. The absence of the interviewer may have led to unclear instructions and to less reliable data. Also, since an identification tool was not used, the research sample was not verified to see if they qualified for the research or not. Due to online data collection, the study may have also excluded certain samples, such as the mothers who do not have access to the Internet or social media. Data was collected from mothers who had a baby between ages 0-3. Another limitation of this study might be that some mothers with older children, might have had a difficult time remembering past experiences and answering the questions accurately. The attachment measure used to interpret mother's attachment style is a 18 item self-report, which can be considered a fairly simple assessment to understand past relationship patterns. Long clinical interviews such as the Adult Attachment Interview may provide researchers with a more comprehensive understanding of past

relationship patterns.

Future research may benefit by the use of the Adult Attachment Interview (AAI), instead of a self-report attachment measure to gain a more comprehensive understanding of mother's attachment history. AAI will also provide the researchers with qualitative data. Since qualitative data concerns understanding people from their own perspective, it may be more useful to understand and interpret their own attachment patterns. Also, the existence of the interviewer in the AAI will make the results more valid due to the elimination of the identification problems.

It is suggested for future research to examine the effects of attachment patterns on breastfeeding intentions and mother-baby bonding in a clinical population. Observing another variation of breastfeeding intentions and bonding quality with baby in a clinical group, will provide researchers to make a comparison between the clinical and the non-clinical groups in order to put forward a more integrative outcome on attachment security.

Future research may also benefit from the examination of the relationship of breastfeeding and different attachment styles. This study has focused on attachment security (secure vs. insecure) but detailed attachment styles can give further information and outcomes. It is recommended for future research to investigate the relationship of mothers with anxious attachment and breastfeeding outcomes, as well as their breastfeeding termination decisions.

The intention in breastfeeding duration was measured categorically (as, before six months vs. after six months). It is proposed for future research to offer participants with a broader range of time interval, to have more specific outcomes and to be able to see the differences among different time groups.

Lastly, future research can make use of a more complex research design that includes a more comprehensive relationship between the research variables. This will result in a better understanding of the factors by determining the mediating variables that affect the relationship between attachment security and breastfeeding intentions,

and bonding quality with baby.

4.6 Conclusion and Clinical Implications

This study aimed to explore the relationships between mother's attachment security and her breastfeeding intentions; and also bonding quality with baby. The findings of the study revealed links between mother's attachment security, intention in breastfeeding practices and bonding quality with baby.

In summary, regarding the link between mothers attachment security and mother's intentions in breastfeeding, (1) significant differences in secure mothers intentions and insecure mothers intentions were found. Regarding the relationship of mother's attachment security and bonding quality with her baby, (2) mothers with secure attachment scored higher on the mother to infant bonding scale, compared with mothers with insecure attachment, while (3) Bonding quality was not found to be significantly associated to intentions in breastfeeding. When additional analyses were conducted, the results showed that (4) a significant negative relationship was found between mother's attachment security and the level of her depressive symptoms; also (5) perceived stress during pregnancy was also positively associated with higher depressive symptom levels. The results of items (4) and (5) showed consistency with previous findings. Whereas, items (1), (2) and (3) provided the field with new findings.

The findings of this study might provide information for the clinicians working with mothers and babies. Clinicians might be aware of how the prenatal period is important and effective in terms of mother's intentions of interaction with her baby. Clinicians, by examining mother's personal relationship patterns may facilitate their understanding of the representations, thoughts and decisions about new baby. The outcomes of this study has put forth that the prenatal period is critical considering mother and baby health and therefore, clinicians should be supporting women before the birth of their child. Findings demonstrated that supporting mother

in forming consistent and stable relationships, and including their history in baby's psychotherapy process might be a therapeutic goal when working in the field of baby mental health.

REFERENCES

- Ainsworth, M. D. S. (1969). Maternal sensitivity scales. *Power*, 6, 1379-1388.
- Ainsworth, M. D. S. (1969). Object relations, dependency, and attachment: A theoretical review of the infant-mother relationship. *Child Development*, 969-1025.
- Ainsworth, M. D. S., & Bell, S. M. (1970). Attachment, exploration, and separation: Illustrated by the behavior of one-year-olds in a strange situation. *Child Development*, 49-67.
- Ainsworth, M. D. S., Bell, S. M., & Stayton, D. J. (1971). Individual differences in Strange Situation behavior of one-year-olds. In H. R. Schaffer (Ed.), *The origins of human social relations* (pp. 17-57). London: Academic Press.
- Ainsworth, M. D. S., Bell, S. M., & Stayton, D. (1974). Infant-mother attachment and social development. In M. P. Richards (Ed.), *The introduction of the child into a social world* (pp. 99-135). London: Cambridge University Press.
- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Hillsdale, NJ: Erlbaum
- Ainsworth, M. S. (1979). Infant-mother attachment. *American Psychologist*, 34(10), 932.
- Ainsworth, M. S. (1989). Attachments beyond infancy. *American Psychologist*, 44(4), 709.
- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. N. (2015). *Patterns of attachment: A psychological study of the strange situation*. Psychology Press.
- Anholm, P. C. H. (1986). Breastfeeding: a preventive approach to health care in infancy. *Issues in comprehensive pediatric nursing*, 9(1), 1-10.

- Anisfeld, E., Casper, V., Nozyce, M., & Cunningham, N. (1990). Does infant carrying promote attachment? An experimental study of the effects of increased physical contact on the development of attachment. *Child Development*, *61*(5), 1617-1627.
- Arora, S., McJunkin, C., Wehrer, J., & Kuhn, P. (2000). Major factors influencing breastfeeding rates: Mother's perception of father's attitude and milk supply. *Pediatrics*, *106*(5), e67-e67.
- Bailey, V. F., & Sherriff, J. (1992). Reasons for the early cessation of breast-feeding in women from lower socio-economic groups in Perth, Western Australia. *Australian Journal of Nutrition and Dietetics*.
- Baranowski, T., Bee, D. E., Rassin, D. K., Richardson, C. J., Brown, J. P., Guenther, N., & Nader, P. R. (1983). Social support, social influence, ethnicity and the breastfeeding decision. *Social Science & Medicine*, *17*(21), 1599-1611.
- Bartholomew, K. (1990). Avoidance of intimacy: An attachment perspective. *Journal of Social and Personal relationships*, *7*(2), 147-178.
- Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: a test of a four-category model. *Journal of Personality and Social psychology*, *61*(2), 226.
- Bartholomew, K., & Shaver, P. R. (1998). Methods of assessing adult attachment. *Attachment theory and close relationships*, 25-45.
- Beebe, B., & Steele, M. (2013). How does microanalysis of mother–infant communication inform maternal sensitivity and infant attachment?. *Attachment & Human Development*, *15*(5-6), 583-602.
- Beebe, B., Jaffe, J., Markese, S., Buck, K., Chen, H., Cohen, P., Bahrik, L., Andrews, H., & Feldstein, S. (2010). The origins of 12-month attachment: A microanalysis of 4-month mother–infant interaction. *Attachment & Human Development*, *12*(1-2), 3-141.
- Belsky, J., & Isabella, R. (1988). Maternal, infant, and social-contextual determinants

- of attachment security. *Clinical implications of attachment*, 41-94.
- Belsky, J. (1997). Theory testing, effect-size evaluation, and differential susceptibility to rearing influence: The case of mothering and attachment. *Child Development*, 68(4), 598-600.
- Blatt, S. J., & Maroudas, C. (1992). Convergences among psychoanalytic and cognitive-behavioral theories of depression. *Psychoanalytic Psychology*, 9(2), 157.
- Blyth, R., Creedy, D. K., Dennis, C. L., Moyle, W., Pratt, J., & De Vries, S. M. (2002). Effect of maternal confidence on breastfeeding duration: An application of breastfeeding self-efficacy theory. *Birth*, 29(4), 278-284.
- Blyth, R. J., Creedy, D. K., Dennis, C. L., Moyle, W., Pratt, J., De Vries, S. M., & Healy, G. N. (2004). Breastfeeding duration in an Australian population: the influence of modifiable antenatal factors. *Journal of Human Lactation*, 20(1), 30-38.
- Borra, C., Iacovou, M., & Sevilla, A. (2015). New evidence on breastfeeding and postpartum depression: the importance of understanding women's intentions. *Maternal and Child Health Journal*, 19(4), 897-907.
- Bowlby, J. (1958). The nature of the child's tie to his mother. *The International Journal of Psychoanalysis*, 39, 350.
- Bowlby, J. (1959). Separation anxiety. *International Journal of Psychoanalysis*, XLI, 1-25.
- Bowlby, J. (1960). Grief and mourning in infancy and early childhood. *The Psychoanalytic Study of the Child*, VX, 3-39.
- Bowlby, J. (1976). *Separation: Anxiety and anger* (Vol. 2). Basic Books.
- Bowlby, J. (1980). *Attachment and loss* (Vol. 3). Basic books.
- Bowlby, J. (2005). *A secure base: Clinical applications of attachment theory* (Vol. 393). Taylor & Francis.

- Bowlby, J. (2008). *A secure base: Parent-child attachment and healthy human development*. Basic books.
- Brazelton, T. B., & Cramer, B. G. (1991). *The earliest relationship: parents, infants and the drama of early attachment*. Karnac books.
- Brazelton, T. B., Koslowski, B., & Main, M. (1974). The origins of reciprocity: The early mother-infant interaction.
- Brennan, K. A., & Shaver, P. R. (1995). Dimensions of adult attachment, affect regulation, and romantic relationship functioning. *Personality and Social Psychology Bulletin*, 21(3), 267-283.
- Bretherton, I. (1985). Attachment theory: Retrospect and prospect. *Monographs Of The Society for Research In Child Development*, 3-35.
- Bretherton, I. (1992). The origins of attachment theory: John Bowlby and Mary Ainsworth. *Developmental psychology*, 28(5), 759.
- Bretherton, I., & Munholland, K. A. (1999). Internal working models in attachment relationships: A construct revisited.
- Britton, J. R., Britton, H. L., & Gronwaldt, V. (2006). Breastfeeding, sensitivity, and attachment. *Pediatrics*, 118(5), e1436-e1443.
- Cernadas, J. M. C., Noceda, G., Barrera, L., Martinez, A. M., & Garsd, A. (2003). Maternal and perinatal factors influencing the duration of exclusive breastfeeding during the first 6 months of life. *Journal of Human Lactation*, 19(2), 136-144.
- Cinar, N., Köse, D., & Altinkaynak, S. (2015). The relationship between maternal attachment, perceived social support and breast-feeding sufficiency. *Journal of the College of Physicians and Surgeons Pakistan*, 25(4), 271-275.
- Chisholm, J. S. (1996). The evolutionary ecology of attachment organization. *Hu Nat*, 7(1), 1-37.

- Collins, N. L., & Read, S. J. (1990). Adult attachment, working models, and relationship quality in dating couples. *Journal of Personality and Social Psychology, 58*(4), 644.
- Condon, W. S., & Sander, L. W. (1974). Neonate movement is synchronized with adult speech: Interactional participation and language acquisition. *Science, 183*(4120), 99-101.
- Condon, W. S., & Sander, L. W. (1974). Synchrony demonstrated between movements of the neonate and adult speech. *Child Development, 45*, 456-462.
- Cowan, P. A., Cohn, D. A., Cowan, C. P., & Pearson, J. L. (1996). Parents' attachment histories and children's externalizing and internalizing behaviors: Exploring family systems models of linkage. *Journal of Consulting and Clinical Psychology, 64*(1), 53.
- Crittenden, P. M. (1992). Quality of attachment in the preschool years. *Development and Psychopathology, 4*(2), 209-241.
- Crowell, J. A., & Feldman, S. S. (1988). Mothers' internal models of relationships and children's behavioral and developmental status: A study of mother-child interaction. *Child Development, 59*, 1273-1285.
- Crowell, J. A., Feldman, S. S., & Ginsberg, N. (1988). Assessment of mother-child interaction in preschoolers with behavior problems. *Journal of the American Academy of Child & Adolescent Psychiatry, 27*(3), 303-311.
- Crowell, J. A., & Feldman, S. S. (1989). Assessment of mothers' working models of relationships: Some clinical implications. *Infant Mental Health Journal, 10*(3), 173-184.
- DiGirolamo, A. M., Grummer-Strawn, L. M., & Fein, S. B. (2003). Do perceived attitudes of physicians and hospital staff affect breastfeeding decisions?. *Birth, 30*(2), 94-100.

- DiGirolamo, A., Thompson, N., Martorell, R., Fein, S., & Grummer-Strawn, L. (2005). Intention or experience? Predictors of continued breastfeeding. *Health Education & Behavior, 32*(2), 208-226.
- Edelstein, R. S., Alexander, K. W., Shaver, P. R., Schaaf, J. M., Quas, J. A., Lovas, G. S., & Goodman, G. S. (2004). Adult attachment style and parental responsiveness during a stressful event. *Attachment & Human Development, 6*(1), 31-52.
- Feeney, J. A. (2002). Attachment, marital interaction, and relationship satisfaction: A diary study. *Personal Relationships, 9*(1), 39-55.
- Feldman, R., Weller, A., Leckman, J. F., Kuint, J., & Eidelman, A. I. (1999). The nature of the mother's tie to her infant: Maternal bonding under conditions of proximity, separation, and potential loss. *The Journal of Child Psychology and Psychiatry and Allied Disciplines, 40*(6), 929-939.
- Feldman, R. (2007). Parent–infant synchrony and the construction of shared timing; physiological precursors, developmental outcomes, and risk conditions. *Journal of Child psychology and Psychiatry, 48*(3-4), 329-354.
- Feldman, R., Weller, A., Zagoory-Sharon, O., & Levine, A. (2007). Evidence for a neuroendocrinological foundation of human affiliation: plasma oxytocin levels across pregnancy and the postpartum period predict mother-infant bonding. *Psychological Science, 18*(11), 965-970.
- Feldman, R., Eidelman, A. I., Sirota, L., & Weller, A. (2002). Comparison of skin-to-skin (kangaroo) and traditional care: parenting outcomes and preterm infant development. *Pediatrics, 110*(1), 16-26.
- Feldman, R., & Eidelman, A.I. (2003). Direct and indirect effects of breast milk on the neurobehavioral and cognitive development of premature infants. *Developmental Psychobiology, 4*, 109–119.
- Feldman, R., & Eidelman, A.I. (2004). Parent–infant synchrony and the social-emotional development of triplets. *Developmental Psychology, 40*, 1133–1147.

- Feldman, R. (2007). Parent–infant synchrony: Biological foundations and developmental outcomes. *Current directions in psychological science*, 16(6), 340-345.
- Feldman, R., & Eidelman, A.I. (2007). Maternal postpartum behavior and the emergence of infant-mother and infant-father synchrony in preterm and full-term infants: The role of neonatal vagal tone. *Developmental Psychobiology*, 49(3), 290-302.
- Figueiredo, B., Canário, C., & Field, T. (2014). Breastfeeding is negatively affected by prenatal depression and reduces postpartum depression. *Psychological Medicine*, 44(5), 927-936.
- Fonagy, P., Steele, H., & Steele, M. (1991). Maternal representations of attachment during pregnancy predict the organization of infant-mother attachment at one year of age. *Child Development*, 62(5), 891-905.
- Fonagy, P. (2002). *Affect Regulation, Mentalization, and the Development of the Self*. New York (Other Press) 2002.
- Fonagy, P. (1999). Attachment, the development of the self, and its pathology in personality disorders. *Treatment of personality disorders*, 53-68.
- Fonagy, P., Target, M., Steele, H., & Steele, M. (1998). *Reflective-functioning manual, version 5.0, for application to adult attachment interviews*. London: University College London, 161-62.
- Forster, D. A., McLachlan, H. L., & Lumley, J. (2006). Factors associated with breastfeeding at six months postpartum in a group of Australian women. *International Breastfeeding Journal*, 1(1), 18.
- Fraiberg, S., Adelson, E., & Shapiro, V. (1975). Ghosts in the nursery: A psychoanalytic approach to the problems of impaired infant-mother relationships. *Journal of the American Academy of Child Psychiatry*, 14(3), 387-421.

- Freed, G. L., Jones, T. M., & Schanler, R. J. (1992). Prenatal determination of demographic and attitudinal factors regarding feeding practice in an indigent population. *American journal of perinatology*, 9(05/06), 420-424.
- Haft, W. L., & Slade, A. (1989). Affect attunement and maternal attachment: A pilot study. *Infant Mental Health Journal*, 10(3), 157-172.
- Harlow, H. F. (1958). The nature of love. *American psychologist*, 13(12), 673.
- Hofer, M. A. (1994). Hidden regulators in attachment, separation, and loss. *Monographs Of The Society for Research in Child Development*, 59(2-3), 192-207.
- George, C., & Solomon, J. (2008). The caregiving system: A behavioral systems approach to parenting. *Handbook of attachment: Theory, research, and clinical applications*, 2, 833-856.
- George, C., & Solomon, J. (1996). Representational models of relationships: Links between caregiving and attachment. *Infant Mental Health Journal*, 17(3), 198-216.
- Gijsbers, B., Mesters, I., Knottnerus, J. A., Legtenberg, A. H., & van Schayck, C. P. (2005). Factors influencing breastfeeding practices and postponement of solid food to prevent allergic disease in high-risk children: results from an explorative study. *Patient Education and Counseling*, 57(1), 15-21.
- Haft, W. L., & Slade, A. (1989). Affect attunement and maternal attachment: A pilot study. *Infant Mental Health Journal*, 10(3), 157-172.
- Hamdan, A., & Tamim, H. (2012). The relationship between postpartum depression and breastfeeding. *The International Journal of Psychiatry in Medicine*, 43(3), 243-259.
- Hammen, C. L., Burge, D., Daley, S. E., Davila, J., Paley, B., & Rudolph, K. D. (1995). Interpersonal attachment cognitions and prediction of symptomatic responses to interpersonal stress. *Journal of Abnormal Psychology*, 104(3), 436.
- Hatton, D. C., Harrison-Hohner, J., Coste, S., Dorato, V., Curet, L. B., & McCarron, D.

- A. (2005). Symptoms of postpartum depression and breastfeeding. *Journal of Human Lactation*, 21(4), 444-449.
- Hazan, C., & Shaver, P. R. (1994). Attachment as an organizational framework for research on close relationships. *Psychological Inquiry*, 5(1), 1-22.
- Henderson, J. J., Evans, S. F., Straton, J. A., Priest, S. R., & Hagan, R. (2003). Impact of postnatal depression on breastfeeding duration. *Birth*, 30(3), 175-180.
- Hood, L. J., Faed, J. A., Silva, P. A., & Buckfield, P. M. (1978). Breast feeding and some reasons for electing to wean the infant: a report from the Dunedin Multidisciplinary Child Development Study. *The New Zealand Medical Journal*, 88(621), 273-276.
- Isabella, R. A., & Belsky, J. (1991). Interactional synchrony and the origins of infant-mother attachment: A replication study. *Child Development*, 62(2), 373-384.
- Jaffe, J., Beebe, B., Feldstein, S., Crown, C. L., Jasnow, M. D., Rochat, P., & Jansen, J., de Weerth, C., & Riksen-Walraven, J. M. (2008). Breastfeeding and the mother-infant relationship—a review. *Developmental Review*, 28(4), 503-521
- Jaffe, J., Beebe, B., Feldstein, S., Crown, C. L., Jasnow, M. D., Rochat, P., & Stern, D. N. (2001). Rhythms of dialogue in infancy: Coordinated timing in development. *Monographs of The Society for Research In Child Development*, i-149.
- Kavanaugh, K., Meier, P., Zimmermann, B., & Mead, L. (1997). The rewards outweigh the efforts: breastfeeding outcomes for mothers of preterm infants. *Journal of Human Lactation*, 13(1), 15-21.
- Kendrick, K. (2000). Oxytocin, motherhood and bonding. *Experimental Physiology*, 85(s1).
- Kessler, L. A., Gielen, A. C., Diener-West, M., & Paige, D. M. (1995). The effect of a woman's significant other on her breastfeeding decision. *Journal of Human Lactation*, 11(2), 103-109.

- Kim, P., Feldman, R., Mayes, L. C., Eicher, V., Thompson, N., Leckman, J. F., & Swain, J. E. (2011). Breastfeeding, brain activation to own infant cry, and maternal sensitivity. *Journal of Child Psychology and Psychiatry*, 52(8), 907-915.
- Klaus, M. H., Jerauld, R., Kreger, N. C., McAlpine, W., Steffa, M., & Kennell, J. H. (1972). Maternal attachment: Importance of the first post-partum days. *New England Journal of Medicine*, 286(9), 460-463.
- Klaus, M., & Kennell, J. (1976). Parent-to-infant attachment. *Recent Advances in Pediatrics*. New York, NY: Churchill Livingstone, 129-152.
- Klaus, M. H., Kennell, J. H., & Ballard, R. A. (1982). *Parent-infant bonding* (pp. 228-230). St. Louis: Mosby.
- Klaus, M. H., Kennell, J. H., & Klaus, P. H. (1995). *Bonding: Building the foundations of secure attachment and independence*. Reading, MA: Addison-Wesley Publishing Company.
- Kumar, R. C. (1997). "Anybody's child": severe disorders of mother-to-infant bonding. *The British Journal of Psychiatry*, 171(2), 175-181.
- Kuzela, A. L., Stifter, C. A., & Worobey, J. (1990). Breastfeeding and mother-infant interactions. *Journal of Reproductive and Infant Psychology*, 8(3), 185-194.
- Labbok, M. H. (2006). Breastfeeding: A woman's reproductive right. *International Journal of Gynecology & Obstetrics*, 94(3), 277-286.
- Labbok, M. H., Wardlaw, T., Blanc, A., Clark, D., & Terreri, N. (2006). Trends in exclusive breastfeeding: findings from the 1990s. *Journal of Human Lactation*, 22(3), 272-276.
- Lavelli, M., & Poli, M. (1998). Early mother-infant interaction during breast-and bottle-feeding. *Infant Behavior and Development*, 21(4), 667-683.
- Lawrence, R. A., & Lawrence, R. M. (2010). *Breastfeeding E-Book: A Guide for the Medical Professional*. Elsevier Health Sciences.
- Lawson, K., & Tulloch, M. I. (1995). Breastfeeding duration: prenatal intentions and

- postnatal practices. *Journal of Advanced Nursing*, 22(5), 841-849.
- Leung, A. K., & Sauve, R. S. (2005). Breast is best for babies. *Journal of the National Medical Association*, 97(7), 1010.
- Littman, H., VanderBrug Medendorp, S., & Goldfarb, J. (1994). The decision to breastfeed: the importance of fathers' approval. *Clinical Pediatrics*, 33(4), 214-219.
- Liu, J., Leung, P., & Yang, A. (2013). Breastfeeding and active bonding protects against children's internalizing behavior problems. *Nutrients*, 6(1), 76-89.
- Lynch, M., & Cicchetti, D. (1991). Patterns of relatedness in maltreated and nonmaltreated children: Connections among multiple representational models. *Development and Psychopathology*, 3(2), 207-226.
- Magai, C. (2008). Attachment in middle and later life. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 532-551). New York, NY, US: Guilford Press.
- Mahler, M. S. (1974). Symbiosis and individuation: the psychological birth of the human infant. *The psychoanalytic study of the child*, 29(1), 89-106.
- Main, M., Kaplan, N., & Cassidy, J. (1985). Security in infancy, childhood, and adulthood: A move to the level of representation. *Monographs Of The Society for Research In Child Development*, 50(1), 66-104.
- Manstead, A. S., Proffitt, C., & Smart, J. L. (1983). Predicting and understanding mothers' infant-feeding intentions and behavior: testing the theory of reasoned action. *Journal of Personality and Social Psychology*, 44(4), 657.
- Matthiesen, A. S., Ransjö-Arvidson, A. B., Nissen, E., & Uvnäs-Moberg, K. (2001). Postpartum maternal oxytocin release by newborns: effects of infant hand massage and sucking. *Birth*, 28(1), 13-19.
- Meltzoff, A. N., & Moore, M. K. (1977). Imitation of facial and manual gestures by human neonates. *Science*, 198(4312), 75-78.

- Meltzoff, A. N., & Moore, M. K. (1997). Explaining facial imitation: A theoretical model. *Early Development & Parenting*, 6(3-4), 179.
- Mercer, R. T., & Ferketich, S. L. (1994). Maternal-infant attachment of experienced and inexperienced mothers during infancy. *Nursing research*, 43(6), 344-351.
- Meyer, K., & Anderson, G. C. (1999). Using kangaroo care in a clinical setting with fullterm infants having breastfeeding difficulties. *MCN: The American Journal of Maternal/Child Nursing*, 24(4), 190-192.
- Mezzacappa, E. S., & Katkin, E. S. (2002). Breast-feeding is associated with reduced perceived stress and negative mood in mothers. *Health Psychology*, 21(2), 187.
- Moehler, E., Brunner, R., Wiebel, A., Reck, C., & Resch, F. (2006). Maternal depressive symptoms in the postnatal period are associated with long-term impairment of mother-child bonding. *Archives of women's mental health*, 9(5), 273-278.
- Morrow-Tlucak, M., Haude, R. H., & Ernhart, C. B. (1988). Breastfeeding and cognitive development in the first 2 years of life. *Social Science & Medicine*, 26(6), 635-639.
- Müller, M. E. (1994). A questionnaire to measure mother-to-infant attachment. *Journal of Nursing Measurement*, 2(2), 129-141.
- Newton, N., Peeler, D., & Rawlins, C. (1968). Effect of lactation on maternal behavior in mice with comparative data on humans. *Journal of Reproductive Medicine*, 1, 257-262.
- O'Campo, P., Faden, R. R., Gielen, A. C., & Wang, M. C. (1992). Prenatal factors associated with breastfeeding duration: recommendations for prenatal interventions. *Birth*, 19(4), 195-201.
- O'hara, M. W., & McCabe, J. E. (2013). Postpartum depression: current status and future directions. *Annual Review of Clinical Psychology*, 9, 379-407.
- O'hara, M. W., & Swain, A. M. (1996). Rates and risk of postpartum depression—a meta-analysis. *International Review of Psychiatry*, 8(1), 37-54.

- Pettem, O., West, M., Mahoney, A., & Keller, A. (1993). Depression and attachment problems. *Journal of Psychiatry and Neuroscience, 18*(2), 78.
- Rempel, L. A. (2004). Factors influencing the breastfeeding decisions of long-term breastfeeders. *Journal of Human Lactation, 20*(3), 306-318.
- Rempel, L. A., & Rempel, J. K. (2004). Partner influence on health behavior decision-making: Increasing breastfeeding duration. *Journal of Social and Personal Relationships, 21*(1), 92-111.
- Rholes, W. S., Simpson, J. A., & Blakely, B. S. (1995). Adult attachment styles and mothers' relationships with their young children. *Personal Relationships, 2*(1), 35-54.
- Ryser, F. G. (2004). Breastfeeding attitudes, intention, and initiation in low-income women: the effect of the best start program. *Journal of Human Lactation, 20*(3), 300-305.
- Scharfe, E. (2012). Maternal attachment representations and initiation and duration of breastfeeding. *Journal of Human Lactation, 28*(2), 218-225.
- Scharfe, E., & Eldredge, D. (2001). Associations between attachment representations and health behaviors in late adolescence. *Journal of Health Psychology, 6*(3), 295-307.
- Schore, A. N. (2000). Attachment and the regulation of the right brain. *Attachment & Human Development, 2*(1), 23-47.
- Scott, J. A., Landers, M. C. G., Hughes, R. M., & Binns, C. W. (2001). Factors associated with breastfeeding at discharge and duration of breastfeeding. *Journal of Pediatrics and Child Health, 37*(3), 254-261.
- Scott, J. A., Shaker, I., & Reid, M. (2004). Parental attitudes toward breastfeeding: their association with feeding outcome at hospital discharge. *Birth, 31*(2), 125-131.
- Shaker, I., Scott, J. A., & Reid, M. (2004). Infant feeding attitudes of expectant parents: breastfeeding and formula feeding. *Journal of Advanced*

- Nursing*, 45(3), 260-268.
- Shuren, J. E., & Grafman, J. (2002). The neurology of reasoning. *Archives of Neurology*, 59(6), 916-919.
- Siegel, D. J. (2001). Toward an interpersonal neurobiology of the developing mind: Attachment relationships, "mindsight," and neural integration. *Infant Mental Health Journal*, 22(1-2), 67-94.
- Slade, A., Grienenberger, J., Bernbach, E., Levy, D., & Locker, A. (2005). Maternal reflective functioning, attachment, and the transmission gap: A preliminary study. *Attachment & Human Development*, 7(3), 283-298.
- Solomon, J., & George, C. (1996). Defining the caregiving system: Toward a theory of caregiving. *Infant Mental Health Journal*, 17(3), 183-197.
- Spinner, M. R. (1978). Maternal-infant bonding. *Canadian Family Physician*, 24, 1151.
- Sroufe, L. A., & Waters, E. (1977). Attachment as an organizational construct. *Child Development*, 1184-1199.
- Sroufe, L. A., & Fleeson, J. (1986). Attachment and the construction of relationships. *Relationships and Development*, 51, 72.
- Stern, D. N. (2001). Rhythms of dialogue in infancy: Coordinated timing in development. *Monographs Of The Society for Research In Child Development*, i-149.
- Swanson, V., & Power, K. G. (2005). Initiation and continuation of breastfeeding: theory of planned behaviour. *Journal of Advanced Nursing*, 50(3), 272-282.
- Van Ijzendoorn, M. H. (1995). Adult attachment representations, parental responsiveness, and infant attachment: A meta-analysis on the predictive validity of the Adult Attachment Interview. *Psychological Bulletin*, 117(3), 387.
- Widström, A. M., Wahlberg, V., Matthiesen, A. S., Eneroth, P., Uvnäs-Moberg, K., Werner, S., & Winberg, J. (1990). Short-term effects of early suckling and

touch of the nipple on maternal behaviour. *Early Human Development*, 21(3), 153-163.

Wolff, M. S., & Ijzendoorn, M. H. (1997). Sensitivity and attachment: A meta-analysis on parental antecedents of infant attachment. *Child Development*, 68(4), 571-591.

Ystrom, E. (2012). Breastfeeding cessation and symptoms of anxiety and depression: a longitudinal cohort study. *BMC Pregnancy and Childbirth*, 12(1), 36.

APPENDIX

Appendix A. Revised Adult Attachment Scale (AAS-R)

Please read each of the following statements and rate the extent to which it describes your feelings about romantic relationships. Please think about all your relationships (past and present) and respond in terms of how you generally feel in these relationships. If you have never been involved in a romantic relationship, answer in terms of how you think you would feel.

Please use the scale below by placing a number between 1 and 5 in the space provided to the right of each statement.

1-----2-----3-----4-----5
Not at all **Very**
characteristic **characteristic**
of me **of me**

- 1) I find it relatively easy to get close to people. _____
- 2) I find it difficult to allow myself to depend on others. _____
- 3) I often worry that romantic partners don't really love me. _____
- 4) I find that others are reluctant to get as close as I would like. _____
- 5) I am comfortable depending on others. _____
- 6) I don't worry about people getting too close to me. _____
- 7) I find that people are never there when you need them. _____
- 8) I am somewhat uncomfortable being close to others. _____
- 9) I often worry that romantic partners won't want to stay with me. _____

- 10) When I show my feelings for others, I'm afraid they will not feel the same about me. _____
- 11) I often wonder whether romantic partners really care about me. _____
- 12) I am comfortable developing close relationships with others. _____
- 13) I am uncomfortable when anyone gets too emotionally close to me. _____
- 14) I know that people will be there when I need them. _____
- 15) I want to get close to people, but I worry about being hurt. _____
- 16) I find it difficult to trust others completely. _____
- 17) Romantic partners often want me to be emotionally closer than I feel comfortable being. _____
- 18) I am not sure that I can always depend on people to be there when I need them. _____

Appendix B. Maternal Attachment Inventory (MAI)

Please read each of the following statements and rate the extent to which it describes your feelings about your baby.

	Always	Often	Sometimes	Never
1. I feel love for my baby				
2. I feel warm and happy with my baby				
3. I want to spend special time with my baby				
4. I look forward to being with my baby				
5. Just seeing my baby makes me feel good				
6. I know my baby needs me				
7. I think my baby is cute				
8. I'm glad this baby is mine				

9. I feel special when my baby smiles				
10. I like to look into my baby's eyes				
11. I enjoy holding my baby				
12. I watch my baby sleep				
13. I want my baby near me				
14. I tell others about my baby				
15. It's fun being with my baby				
16. I enjoy having my baby cuddle with me				
17. I'm proud of my baby				
18. I like to see my baby do new things				

19. My thoughts are full of my baby				
20. I know my baby's personality				
21. I want my baby to trust me				
22. I know I am important to my baby				
23. I understand my baby's signals				
24. I give my baby special attention				
25. I comfort my baby when he/she is crying				
26. Loving my baby is easy				

Appendix C. Edinburgh Postnatal Depression Scale

Since you are either pregnant or have recently had a baby, we want to know how you feel. Please place a **CHECK MARK** (✓) on the blank by the answer that comes closest to how you have felt **IN THE PAST 7 DAYS**—*not just how you feel today*.

Below is an example

I have felt happy:

Yes, all of the time _____

Yes, most of the time ✓

No, not very often _____

No, not at all _____

This would mean: “I have felt happy most of the time” in the past week. Please complete the other questions in the same way.

1. I have been able to laugh and see the funny side of things:

As much as I always could _____

Not quite so much now _____

Definitely not so much now _____

Not at all _____

2. I have looked forward with enjoyment to things:

As much as I ever did _____

Rather less than I used to _____

Definitely less than I used to _____

Hardly at all _____

3. I have blamed myself unnecessarily when things went wrong:

Yes, most of the time _____

Yes, some of the time _____

Not very often _____

No, never _____

3. I have blamed myself unnecessarily when things went wrong:

Yes, most of the time _____

Yes, some of the time _____

Not very often _____

No, never _____

4. I have been anxious or worried for no good reason:

No, not at all _____

Hardly ever _____

Yes, sometimes _____

Yes, very often _____

5. I have felt scared or panicky for no good reason:

Yes, quite a lot _____

Yes, sometimes _____

No, not much _____

No, not at all _____

6. Things have been getting to me:

Yes, most of the time I haven't been able to cope at all _____

Yes, sometimes I haven't been coping as well as usual _____

No, most of the time I have coped quite well _____

No, I have been coping as well as ever _____

7. I have been so unhappy that I have had difficulty sleeping:

Yes, most of the time _____

Yes, sometimes _____

No, not very often _____

No, not at all _____

21. I have felt sad or miserable:

Yes, most of the time _____

Yes, quite often _____

Not very often _____

No, not at all _____

22. I have been so unhappy that I have been crying:

Yes, most of the time _____

Yes, quite often _____

Only occasionally _____

No, never _____

10. The thought of harming myself has occurred to me:

Yes, quite often _____

Sometimes _____

Hardly ever _____

Never _____

Appendix D. Breastfeeding Information Form

1. How many pregnancies have you had?

- First pregnancy
- Second pregnancy
- Third pregnancy or more

2. Did you experience any miscarriages?

- 0
- 1
- 2
- 3 or more

3. If this is *not* your first child,

Were you able to breastfeed your previous child?

- Yes
- No

If yes,

3.a. What was the breastfeeding duration for your previous child?

- Less than 6 months
- 6-12 months
- More than 12 months

If No,

3.b. Why were you not able to breastfeed your previous child?

- Mother related
- Baby-related
- Both

Questions About The Newborn

4. Mode of delivery

- Vaginal delivery
- Cesarean delivery

5. Was he/she an expected child?

- Yes
- No

6. Did you have a sex preference?

- Yes
- No

6. a. If yes, did your child meet your sex preference?

- Yes
- No

7. Did you or your baby have any health problems during pregnancy?

- Yes
- No

8. Do you think you had enough support through out your pregnancy?

- Yes

No

9. Did you go through serious stress during pregnancy?

Yes

No

10. What was your feeding intention before birth?

Breastfeeding

Not breastfeeding

11. Did your feeding preference change after birth?

Yes

No

12. What factor(s) played role in choosing your feeding method?

Age

Socio-economical status

Baby's health

Mother's health: mental physical

Pain

Latching problems

Low milk supply

Personal beliefs

Mother baby bonding

Support

Education (about birth)

Prematurity

Multiple births

If feeding method was breastfeeding,

13. What was your intended termination time (before birth)?

- Before 6 months 6-12 months 12 months or after

14. What was the termination (weaning) method?

15. What factor(s) were influential in giving the weaning decision?

- Fatigue
- Work or school return
- Lifestyle related (reasons related to diet, smoking, and personal freedom)
- Lactational (reasons related to latch-on and nipple or breast problems)
- Psychosocial (reasons related to breastfeeding attitudes and social support)
- Nutritional (reasons related to concerns about milk supply)
- Mothers health: mental physical mother's pregnancy or plan for her next pregnancy
- Baby's health
- Milk pumping (reasons related to mothers not being able to or not wanting to express breast milk)
- Self-weaning (reasons related to infants' biting, losing interest, or otherwise indicating that they were old enough to be weaned)

16. When has the mother decided on weaning time and method?

- Before giving birth
- After giving birth

Questions About Mother's History

17. Have you been breastfed?

- Yes
- No

17.a. If yes, what was the breastfeeding duration?

- Less than 6 months
- 6-12 Months
- 12 months and over

17.b. If not, why?

- Mother related
- Baby-related
- Both

18. How would you rate your own appearance?

- I'm not happy about how I look
- I'm an average person
- I find myself beautiful

19. How would you rate your eating habits?

- I always try to eat less than I want to
- I eat more than I have to
- Neither of them

Appendix E. Demographic Form

Instructions: Please provide a response for each of the following questions.

1. What is your age? _____

2. What is your marital status?

Single Married Separated Divorced Widowed

3. Considering your annual income (or combined annual income if you have a spouse):

My income is lower than my expenses

My income is equal to my expenses

My income is higher than my expenses

4. With which nationality do you identify?

5. What is your education level?

Primary

Secondary

College

Postgraduate

6. Do you currently work?

Yes

No