

A REVIEW ON THE EFFECTS OF BREASTFEEDING ON MOTHER-INFANT BONDING

Filiz Nur Kafci¹, Gizem Yilmaz²

Citation: Filiz Nur Kafci, Gizem Yilmaz (2025), A Review on the Effects of Breastfeeding on Mother-Infant Bonding, International Journal of Health Administration and Education (Sanitas Magisterium), 11 (2), 87-110.

^{1,2} İstanbul Aydin Üniversitesi, Health Sciences Faculty, Istanbul, Türkiye



Abstract

Motherhood is a sacred concept that starts with being pregnant with a child and is defined as the role that provides the physical and psychological needs of the baby to be met satisfactorily after the birth. With motherhood, the female role achieves new self-development. Attachment has a great role in the birth of the baby and the adoption of the maternal role. Attachment, in the most general sense, refers to the strong bond that an individual feels towards another individual whom he or she considers important, and it starts right after birth. Attachment theory, on the other hand, reveals how the emotional bond that children develop towards their mothers is formed and how interpersonal relationships are affected by attachment. It is important for the baby and the mother that the bond between the mother and the baby is secure. In addition, the attachment of mother and baby has been the subject of many studies. Chief among these are Bowlby, Ainsworth. In Bowlby's view, parents' repetitive behaviors shape children's mental blueprints. Ainsworth, on the other hand, divided attachment into three groups in line with his studies and these are secure attachment, anxious attachment and avoidant attachment. Babies who are securely attached experience tension when the mother leaves the environment, but rejoice when the mother comes. Anxiously attached infants seek attention from the mother, but do not use the mother as a safe base because of their desire to explore the environment. Finally, avoidant attachment children want to explore the environment when they are in the same environment with the mother, and they do not interact with the mother. The realization of these attachments that we have mentioned takes place in 4 stages and the stage in which the actual attachment takes place is the third stage. In order to facilitate the bonding process, the mother should interact with her baby as soon as possible, share the same room, health personnel and the mother's environment should minimize the mother's anxiety and perform breastfeeding as soon as possible. Skin-to-skin contact between mother and baby, meditation practice, and mother's social support are some of them. In addition, in some cases, attachment is negatively affected; cesarean section, separation from the baby, infancy depression, unwanted pregnancy, mother's being away from the baby, and insufficient and late breastfeeding. Studies have shown that there is a connection between the baby's closest contact to the mother's breast and breastfeeding and the positive realization of attachment. Although breastfeeding is considered very important for the baby and the mother, breastfeeding is the transfer of antibodies and nutritional values that contribute to the growth and development of the baby through breast milk. When we look at the status of only breast milk for the first 6 months in Turkey statistically, this rate was found to be 41.6%. All over the world, this rate has been recorded as 38%. Breastfeeding is not only beneficial in terms of attachment, but is also important in terms of physical, emotional and spiritual aspects for women, mothers and babies. It has been reported that lactating women are more dependent on their babies, and respiratory, digestive and circulatory system diseases are less common than non-breastfeeding or less frequently lactating women. The mother's use of the right breastfeeding technique is considered important for the baby and the mother. With the right breastfeeding technique, attachment behavior will be reinforced and the bond between them will be strengthened.

Breastfeeding is considered important in terms of mother and baby bonding, because starting breastfeeding without losing time will prepare an environment for a warm, safe and intimate relationship between the baby and the mother. Skin-to-skin contact should occur immediately after the birth and the baby should be exposed to the bare chest for at least 1 hour. In order for the mother and baby to continue the bonding process, the baby and the mother should share the same room for the first 24 hours and breastfeed the baby as he cries.

Keywords: Attachment, Breastfeeding, Maternalattachment, Prenatal, Attachment theory, Interaction, Transmission of affection / Communication of love, Secure attachment

Introduction

From the moment a human is born, the first person with whom they establish closeness is the primary caregiver—the mother. The interaction between mother and infant bonding is of great importance from the earliest moments of life, not only for the infant's behavioral, cognitive, and emotional development, but also because the mother serves as the foundation upon which the child grows. Attachment is the transmission of affection between a mother and her baby. As this connection develops, it leads to the baby developing a sense of trust in the mother, and the mother forming a loving bond with her child. As Bowlby emphasizes, just as nutrition and vitamins are essential for a child's physical health, a mother's love is equally crucial for the child's mental well-being. Research has shown that in cases where this bond fails to form, both mother and baby may face significant difficulties. Therefore, it is essential to foster and strengthen the bond between mother and baby in a positive way from the earliest stages of life. It is known that the bond between mother and baby begins to form immediately after birth, or even while the baby is still in the womb. When mothers who have recently given birth were asked when they first experienced a positive interaction with their babies, approximately 41% responded that it occurred during pregnancy, 24% said it happened during the time between hospital admission and delivery, 27% stated it occurred within the first minutes after birth, and the remaining 8% said it happened in the weeks following birth. Based on this self-reported data, the first hours after birth appear to be the most critical period for the formation of the mother-infant bond. The fastest way for this bond to develop is through skin-to-skin contact and physical closeness immediately after birth, and the easiest method to achieve this is through breastfeeding. In the early years of life, mother-infant interaction is most frequently facilitated through breastfeeding. In breastfeeding positions that involve close physical contact and skin-to-skin touch, mutual interaction between mother and baby is promoted. Although breastfeeding is a common practice in our country, the rates of immediate postpartum breastfeeding show a decline.

While breastfeeding allows mothers to initiate their first interactions with their babies and maintain this mutual exchange, research has yet to fully measure its contributory effects. Looking at practices that facilitate mother-infant bonding, it has been found that communication between mother and baby can begin during pregnancy through yoga and mindfulness exercises. Having the mother and baby stay in the same room after birth, receiving support from close relatives regarding baby care, and encouraging the mother to be more involved with her baby can all positively enhance the mother-infant interaction.

In addition to the factors that facilitate bonding, there are also negative factors that hinder it. One of these is excessive crying by the infant in the early months. When a mother is unable to soothe her crying baby despite all efforts, she may begin to feel inadequate, which can lead to symptoms of postpartum depression. Likewise, if a mother does not respond to her constantly crying baby and the baby experiences maternal neglect, the likelihood of infant depression may increase due to the lack of maternal attention. To prevent such outcomes, mothers must be informed and supported by both their families and healthcare professionals in the postpartum period. Although not many studies have been conducted on the importance of breastfeeding in mother-infant bonding, in our project, we aimed to gather data from all available research to date on this subject. Our goal was to examine the concepts of breastfeeding and bonding, explore the impact of breastfeeding behavior on mother-infant bonding, and identify what can be done to promote this bonding. Although the significance of research on mother-infant bonding has not yet been fully recognized, findings suggest that breastfeeding plays a role in facilitating the attachment of the mother to the baby and vice versa.

2. GENERAL INFORMATION

2.1. The Concept of Motherhood

In the context of the society we live in, women emerge as central figures, particularly in the areas where the shaping and control of individuals fundamentally begin. This positioning plays a key role in the construction of a society's history and, ultimately, its culture (Karaman & Doğan, 2018, pp. 1476-1494). Motherhood, in its traditional sense, is a concept that is often associated with womanhood from a biological standpoint, yet its meaning is shaped by varying cultural attributes. In the broadest terms, motherhood can be defined as a sacred and bodily experience that begins with pregnancy and continues as a role in which the mother fulfills the physical and psychological needs of her child in the most accurate and nurturing way after birth. As a sacred concept,



motherhood is often constructed through emotional dimensions; otherwise, it would differ in no meaningful way from that of a mere caregiver or babysitter (Sever, 2015, pp. 72-84).

Motherhood is not an innate instinct; rather, it is a role that women take on and inherit. However, traditional psychoanalytic theory has viewed motherhood as a fundamental instinct and considered it a natural extension of a woman's femininity. Through becoming a mother, a woman enters a new phase of life and undergoes a transformation in her sense of self. Nevertheless, the traditional psychoanalytic approach does not provide sufficient insight into the concept of motherhood or the perception of womanhood. In addition to its limited perspective on motherhood and femininity, it also fails to consider the social, economic, and structural contexts that affect women after they become mothers (AKKOCA Y., 2009, pp. 3-5). The mother has a strong and profound psychological and biological connection with her child. She is also the person with whom the child experiences many "firsts" throughout their life. From the very first hours and days, the mother serves as the child's first protector, caregiver, the first person with whom they establish a relationship, and the most precious figure from whom they receive trust and love. With the help of the mother, the child begins to recognize both themselves and their environment. Through various experiences provided by the mother, the child learns to meet their needs and to make sense of the situations they encounter, thereby gaining the opportunity to develop self-awareness (Şen, 2007, pp. 10-14).

Although rooted in psychoanalytic theory, attachment theory has evolved to place particular emphasis on the emotional bond between mother and child. Central to this theory is the notion that a mother's attuned responsiveness to her infant's needs plays a critical role in the child's emotional and psychological development. The theory posits that the mother bears a primary responsibility in providing consistent and sensitive caregiving, which in turn fosters a secure attachment and lays the foundation for the child's future relational patterns (AKKOCA Y., 2009, pp. 3-5). Beauvoir argues that a woman, by virtue of her physical characteristics and bodily constitution, fulfills her biological destiny through motherhood, thereby presenting motherhood as an integral part of womanhood and a natural duty (Şen, 2007, s. 10-14). Feminist sociological and social psychological theories, when examining the impact of social structures on motherhood, tend to attribute maternal behavior not to a woman's innate nature but to learned skills and roles. While becoming a mother may appear natural for women, it is fundamentally a socially constructed condition. Motherhood, closely tied to the earliest stages of a woman's developmental journey, is regarded as an inseparable aspect of her social identity (AKKOCA Y., 2009, pp. 3-5).

2.2. The Concept of Attachment

The concept of attachment refers to the special emotional bond that one individual develops toward another (Şen, 2007, pp. 10-14). Attachment is the most significant indicator of love between a mother and her baby. It reflects the emergence of positive mother-infant interactions and the repetition of these interactions, ultimately resulting in the infant's development of a sense of trust (Akkoca (2009, pp. 9-17). Attachment, in its most basic sense, can be defined as a strong emotional bond that an individual feels toward others whom they regard as significant. Beyond this, attachment also encompasses the emotional closeness that develops mutually between a mother and her infant, playing a central role in the relational dynamics between the infant and their caregivers. This emotional bond, which begins in infancy, is most commonly formed with the mother, who typically serves as the primary attachment figure (Yurtsal, 2014, pp. 36-39; Nacar & Gökkaya, 2019, pp. 49-55).

Attachment is a consistent and enduring emotional bond, particularly between an infant and their primary caregiver, that becomes especially evident in situations involving stress or fear—manifesting as behaviors such as seeking proximity to the attachment figure. Attachment is a lifelong process that begins in early childhood and plays a vital role in an individual's social relationships throughout life (Yurtsal, 2014, pp. 36-39). The bond established between a mother and her infant, both prenatally and postnatally, is considered crucial for the child's mental, emotional, and physical well-being. Consequently, the attachment formed between mother and baby is regarded as a fundamental process in the infant's psychological development and in shaping their future interactions with the world (Akarsu, Tuncay, & Alsaç, 2017, pp. 275-279). Immediately after birth, the human infant exhibits innate attachment behaviors such as rooting, turning the head from side to side, sucking, swallowing, thumb sucking, orienting toward the mother, grasping, and engaging in feeding interactions—behaviors that signify the early stages of attachment (Akarsu, Tuncay, & Alsaç, 2017, pp. 275-279; Yurtsal, 2014, pp. 36-39). In general, attachment develops between 6 and 24 months of age. After this period, the child begins to engage in more complex social

relationships, not only with their primary caregiver but also with other individuals in their social environment (Soysal, Bodur, İşeri, & Şenol, 2005, pp. 88–90).

Among the first to develop attachment theory were Bowlby, Ainsworth, and their colleagues (Yurtsal, 2014, pp. 36–39). Maternal attachment is defined as the process through which a mother develops a bond of affection with her child, arising from a pleasurable and mutually fulfilling interaction between mother and infant. This strong connection formed between mother and child is a unique and enduring expression of love that persists over time. Bowlby emphasized that just as proteins and vitamins are essential for a child's physical health, the love and affection shown by the mother are equally critical for the child's emotional well-being. He also conceptualized attachment as an emotional bond that encompasses comfort, trust, and support in children (Nacar & Gökkaya, 2019, pp. 49–55; Akkoca, 2009, pp. 9–17). On the other hand, research has shown that insecure attachment between mother and infant is associated with various psychological conditions, including major depression, social anxiety disorder, obsessive-compulsive disorder, and chronic pain disorders (Akkoca, 2009, pp. 9–17).

When mothers were asked when they first felt love for their babies, 41% reported during pregnancy, 24% at the time of birth, 27% within the first weeks postpartum, and 8% after the first week. These findings suggest that maternal attachment is highly significant and that the bonding process often begins during pregnancy (Akkoca, 2009, pp. 9–17).

In addition to being a concept that influences an individual's lifelong social relationships, attachment typically becomes activated and observable in situations where the individual feels threatened or experiences separation from the attachment figure—most commonly the mother (Nacar & Gökkaya, 2019, pp. 49–55).

Attachment observed in infancy involves the formation of an emotional and behavioral tracking system, which includes spending the majority of time with the caregiver and seeking them out in the face of distressing situations (Çömlek, 2021, pp. 88–90). Following birth, the infant may initially direct attachment behaviors toward any accessible person. However, by six months of age, typically developing infants begin to exhibit a preference for a specific individual, to whom they seek proximity and protest separation. This person is referred to as the *primary attachment figure*. It has been shown that the relationship between the infant and the primary attachment figure differs significantly from relationships with others. The primary attachment figure functions as a secure base that enables the infant to relax and serves as a point of safety to which the infant can return when distressed. When the infant feels close to and connected with this attachment figure, they experience a sense of security and are more likely to explore their environment. After such exploration, the infant comes to perceive the primary attachment figure as the secure base or safe haven (Soysal, Bodur, İşeri, & Şenol, 2005, pp. 88–90).

Since attachment is a continuous process influenced by emotional and interactional factors deemed essential for life, it is considered highly important in mother-infant bonding for the mother to begin breastfeeding as early as possible. In addition, ensuring that the mother and infant remain in the same room is crucial for the effective development of this attachment (Akarsu, Tuncay, & Alsaç, 2017, pp. 275–279).

2.2.1. Attachment in the Context of Learning Theory:

According to learning theory, attachment is a condition learned through conditioning. Pavlov's classical conditioning is used to explain attachment theory. The development of attachment follows a similar trajectory to Pavlov's experiment, in which a dog salivates upon hearing a bell, having associated it with food. Learning psychologists have concluded that a child's attachment to the mother or father is a behavior that emerges through learning. When an infant's basic needs such as hunger or thirst are met by the mother, the infant experiences a sense of relief, leading to the formation of a positive association with the caregiver (typically the mother), and consequently develops positive feelings toward her. According to the learning theory, the bond that develops between the mother and the infant, as well as the positive emotions the infant experiences, are learned through conditioning and are not innate. However, while the attachment formed through learning is important, the quality of that attachment is also considered highly significant. A lack or deficiency in attachment may influence the child's personality development and increase the likelihood of various issues emerging later in life (Soysal, Bodur, İşeri, & Şenol, 2005, pp. 88–90).



2.3. Attachment Theory

Attachment behavior has been defined as an individual's sense of closeness to another and the desire to maintain this closeness. This theory reveals the cognitive, emotional, and behavioral relationship that occurs between the mother and the child (Şen, 2007, pp. 10–14). Attachment theory is based on the universality of the human need to form emotional bonds, as well as an understanding of individual differences. It is an approach that aims to answer the question: "Why do people feel strong emotional bonds with those to whom they feel close?" Attachment theory seeks to explain how the emotional bond that children develop toward their mothers emerges, and how personality and interpersonal relationships are shaped by early attachment experiences in childhood (Sargin, Avşaroğlu, & Ünal, 2016, pp. 9–17). According to attachment theory, if an infant fails to form secure attachments with multiple caregivers in the early years of life, this may result in a reduced ability to develop close relationships with others in later years and into adulthood (Şen, 2007, pp. 10–14).

The bond established between a mother and her baby not only shapes the infant's psychological structure but also determines the attachment style that will develop in later life. During this period, attachment develops independently of intentions and desires, and the mother and baby begin to form an emotional connection with one another. As a result of the mother's interaction with the baby, the infant adjusts their behaviors, and "internal working models" emerge, which include self and attachment personality patterns. For the child to develop a strong and resilient sense of self, it is essential that the mother and child spend quality time together and live in a joyful environment (Sargin, Avşaroğlu, & Ünal, 2016, pp. 9–17).

Attachment, also referred to as a process of mutual adaptation, is the impression each individual leaves on the other. Through the emotional bond formed between mother and baby, the dynamics of attachment are established, laying the foundation for the child's future cognitive, emotional, and social competencies. When the caregiver values the child and meets their needs, the child feels special and worthy. Conversely, feelings of worthlessness may arise in the child as a result of neglect or rejection. For instance, if a mother uses inappropriate language while communicating with the child, it may damage the child's self-esteem (Sargin, Avşaroğlu, & Ünal, 2016, pp. 9–17).

The attachment between mother and baby begins within a few months after birth and strengthens up to the ninth month. The secure attachment that the baby establishes with the caregiver significantly contributes to the development of the baby's self-concept, peer relationships, and ability to cope with challenges. The attachment system is defined by three primary functions (Akkoca, 2009, pp. 3–9).

These functions include proximity seeking, a secure haven, and a secure base. One of the main reasons a baby seeks closeness with the mother is the perception of threat or danger from the environment. A baby who has developed secure attachment may move away from the mother to explore the surroundings. This is because the baby perceives the mother as a secure base and is aware that they can return to her with confidence and comfort whenever needed (Akkoca, 2009, pp. 3–9).

One of the newborn baby's first tasks is to learn to trust. This sense of trust arises from the relationship between the mother and the baby and forms the foundation for the individual's future interpersonal relationships. The natural flow of attachment is the feeling of inclusion and integration. When this bond is lost, anxiety is experienced. A mother who does not recognize attachment as an essential human trait and who lacks respect for attachment behaviors cannot serve as a secure base for the child she raises. For secure exploratory behavior to cease, two conditions must occur:

i) When the child feels fear or pain,

ii) When the mother becomes distant.

In either case, the baby will attempt to return to the mother as quickly as possible or will continue to cry in a vulnerable state. A mother's affectionate closeness strengthens the baby's feelings of love and security, while any disruption in the mother-infant bond often leads to feelings of anxiety, anger, and sadness in the baby (Sargin, Avşaroğlu, & Ünal, 2016, pp. 9–17).

Attachment theory explains the possible reasons why infants have a tendency to form strong bonds with their caregivers and themselves. This theory is structured around three fundamental principles:

- i) Human infants are born with an innate repertoire that facilitates attachment.
- ii) As long as proximity is maintained, the other party's need for closeness is also fulfilled.
- iii) Through lived experiences, the child begins to interpret both the self and the external world (Sargin, Avşaroğlu, & Ünal, 2016, pp. 9–17).

According to attachment theorists, the form of attachment developed in infancy—reflecting the relationship with the mother and encompassing internalized representations of the self and others—tends to remain stable throughout life (Sargin, Avşaroğlu, & Ünal, 2016, pp. 9–17).

2.3.1. Bowlby's Attachment Theory

The first person to introduce the concept of attachment theory was the British psychiatrist John Bowlby. According to Bowlby, human survival and the maintenance of life are of great significance (Çömlek, 2021). In 1950, the World Health Organization (WHO) invited Bowlby to provide psychological insight into homeless children living in London, and this invitation laid the foundation for the development of attachment theory (Soysal, Bodur, İşeri, & Şenol, 2005). Bowlby conducted both theoretical and empirical studies on relationships in the infant's life, and his attachment theory continues to guide contemporary developmental psychology. Bowlby emphasized the role of the mother as the attachment figure. His study showing that boys who were separated from their mothers at an early age experienced greater difficulties and displayed increased delinquency during adolescence drew attention to the importance of parent-child communication (Şen, 2007).

According to Bowlby, the mental frameworks (internal working models) children form are shaped by the repeated behaviors of their caregivers during early childhood. These internal models leave lasting effects throughout the child's life (Çömlek, 2021). For Bowlby, attachment is vital to the child's survival. Based on his observations of animals, he concluded that clinging to and following the mother enhances the infant's chances of survival. Bowlby highlighted three core functions of attachment in human life:

1. Serving as a secure base to which the child can return while exploring the world,
2. Meeting physical needs,
3. The opportunity to develop a sense of security toward life.

Bowlby stated that if these three essential needs are not met, the child may develop self-anxiety (Şen, 2007).

Trained in the psychoanalytic tradition, Bowlby quickly recognized the shortcomings and inadequacies of psychoanalytic theory upon entering the field of child psychiatry. The awareness he gained, along with the WHO report, led Bowlby to the threshold of a new approach. As a result of his research, Bowlby concluded that the tendency to form close relationships begins in infancy. The similarities and differences between attachment in



infancy and emotional bonds in adulthood remain a subject of ongoing exploration today (Soysal, Bodur, İşeri, & Şenol, 2005).

Bowlby argued that through reciprocal experiences with the mother, the infant constructs internal working models and that attachment continues throughout life via mental representations. The internal working model refers to the cognitive and emotional structure developed by the infant in interaction with the caregiver, and it governs attention, cognition, and memory regarding interpersonal relationships. The child develops mental and behavioral strategies of protection to maintain both physical and psychological proximity to the mother and to ensure a sense of security. According to Bowlby, these internal working models provide insight into who the caregiver is, where the infant can find them when needed, and how the caregiver is likely to respond in different situations (Akkoca, 2009).

2.3.2. Ainsworth's Attachment Theory

Following Bowlby, the most significant contributions to attachment theory were made by Mary Ainsworth. In addition to defining the concept of attachment, her work primarily focused on individual differences in attachment styles (Nacar & Gökkaya, 2019; Şen, 2007). Ainsworth, a Canadian psychologist, worked alongside Bowlby in the early 1960s and initially shared his perspectives. However, her later studies produced findings that extended beyond Bowlby's original claims (Şen, 2007).

Ainsworth categorized attachment into three main types, based on the distinct caregiving styles shaped by maternal individual differences. The first of these is **secure attachment**, where infants perceive their caregiver as a secure base (Nacar & Gökkaya, 2019). Infants with secure attachment experience distress when their mother leaves, but upon her return, they greet her with joy and relief (Şen, 2007). Compared to other attachment styles, securely attached infants are more easily comforted when distressed, and they visibly express happiness when the mother returns to the environment (Nacar & Gökkaya, 2019). Infants with an **anxious/ambivalent attachment style** seek attention from their caregiver (typically the mother) when in the same environment, yet they do not use the caregiver as a secure base from which to explore the surroundings (Nacar & Gökkaya, 2019).

The third type, **avoidant attachment**, is characterized by infants who prefer exploring the environment without engaging with the caregiver, even when the caregiver is present. In this style, the child shows little reaction when the mother departs, and upon her return, actively rejects or distances themselves from her (Şen, 2007). Infants with avoidant attachment typically do not express distress when the primary caregiver is absent and do not display signs of satisfaction when the caregiver returns. Instead, they may engage with objects or distractions and even avoid interactions with the caregiver altogether (Nacar & Gökkaya, 2019).

Ainsworth's experimental study known as the "**Strange Situation**" involved observing infant reactions to separation and reunion with the mother over an eight-minute period. Based on these reactions, infants were classified into different attachment styles (Şen, 2007). In the experiment, mother and infant were placed in a toy-filled room to observe the infant's exploratory behavior. At the 3-minute mark, a stranger entered, interacted with the mother, and attempted to engage with the infant. The mother then exited the room. After another few minutes, she returned and the stranger left. Subsequently, the mother left again, leaving the infant alone for three minutes. The stranger re-entered, followed by the mother after three more minutes.

According to the findings, most children were securely attached: they accepted the stranger but were upset by the mother's departure and joyful upon her return. Others exhibited **insecure attachment**, characterized by reluctance to explore, clinging to the mother, crying upon separation, and difficulty being soothed upon reunion. The remaining group were **avoidantly attached** infants who actively avoided their mothers upon her return and often sought comfort from the stranger instead (Sargin, Avşaroğlu, & Ünal, 2016).

However, Ainsworth emphasized that attachment classification should not solely rely on the child's emotional state. Innate temperament and personality traits shaped through environmental interaction are also essential factors. Mothers of securely attached children tend to be responsive, capable of quickly calming a crying child, and sensitive to various needs. Conversely, mothers of anxiously attached children display inconsistent responsiveness. Mothers

of avoidantly attached children are often emotionally distant or neglectful. Furthermore, a child's **temperament** also serves as a third influencing variable in attachment development (Sargin, Avşaroğlu, & Ünal, 2016).

According to Ainsworth, a sensitive mother does the following:

- Quickly detects and attentively observes her child's signals.
- Accurately interprets those signals.
- Responds appropriately to the child's cues.
- Provides support during moments of frustration within a timeframe the child can tolerate (Sargin, Avşaroğlu, & Ünal, 2016).

2.3.3. Bartholomew and Horowitz's Attachment Theory

The **four-category model** proposed by Bartholomew and Horowitz classifies attachment into four styles: **secure**, **fearful**, **preoccupied**, and **dismissive**. In the **secure attachment style**, individuals have a positive view of themselves and perceive others as supportive. The **dismissive attachment style** is characterized by a positive self-image but a negative perception of others. The **preoccupied attachment style** combines a negative self-view with a positive perception of others. Lastly, in the **fearful attachment style**, both self and other models are perceived negatively (Nacar & Gökkaya, 2019).

Individuals with a **secure attachment style** generally exhibit high self-confidence and self-esteem and maintain a positive outlook toward others. They trust in their ability to cope with stressful situations. Those with a **dismissive attachment style** have a positive attitude toward themselves but a negative view of others. These individuals tend to suppress their negative emotions and avoid emotional dependency. Individuals with a **preoccupied attachment style** often experience negative feelings about themselves while maintaining a positive view of others. As a result, they typically have low self-confidence and may become overly dependent in relationships. Finally, those with a **fearful attachment style** hold negative perceptions of both themselves and others. They may desire emotional closeness but simultaneously avoid intimacy due to fear of rejection and emotional pain. This style is often marked by both anxiety and avoidance (Nacar & Gökkaya, 2019).

2.4. Studies on Attachment

2.4.1. Animal Studies

Infancy also encompasses the origins of social behavior. The bond between the infant and the mother is among the earliest social behaviors observed in life. Attachment in the early years of life has also been observed in the offspring of certain animal species. In Harlow's famous experiment, monkeys were used as subjects. Infant monkeys were separated from their mothers immediately after birth and were raised in individual cages. Inside each cage, artificial surrogate mothers were installed. One of the surrogate mothers was made of wire with a wooden head, while the other was covered in soft, brown cloth. To provide warmth, light bulbs were placed behind both surrogate figures. Additionally, a bottle that did *not* supply milk was attached to the chest of the soft, cloth-covered surrogate. Observations revealed that the infant monkeys preferred the soft surrogate mother despite the lack of nourishment. When frightened or sleepy, they would approach and cling to the soft figure rather than the wire one. These findings demonstrated that the monkeys were more strongly drawn to the comforting texture and sense of security offered by the cloth-covered surrogate, rather than the one that simply fulfilled their nutritional needs (Nalbantoglu, 2016, pp. 5–12; Soysal, Bodur, İşeri, & Şenol, 2005).

The most striking result of the study is that attachment is not related to the fulfillment of needs such as hunger or thirst, and that meeting physiological needs alone is not sufficient to form attachment. The experiment also revealed that monkeys raised in deprivation of a mother-infant relationship experienced various difficulties later in life, even to the extent of displaying punitive behavior toward their own offspring (Nalbantoglu, 2016, pp. 5–12; Soysal, Bodur, İşeri, & Şenol, 2005).



In another experiment, Lorenz conducted studies with birds and obtained results similar to those of Harlow's experiment. The findings indicated that the lack of mother-infant bonding negatively affected the quality of future interpersonal relationships. However, attachment in animals differs significantly from human attachment. As the offspring mature, the attachment observed in animals tends to weaken. This weakening has been attributed to the mother's gradual distancing from the offspring and a decrease in the frequency of nursing in mammals (Nalbantoglu, 2016, pp. 5–12; Soysal, Bodur, İşeri, & Şenol, 2005).

2.4.2. Studies Conducted on Humans

In recent years, attachment has become one of the most significant topics in terms of the mother-infant relationship. Since attachment is mutual, the continuity of the mother-infant bond forms the foundation of life. Attachment, which begins at birth, is further strengthened through the mother's breastfeeding and physical contact with the baby. Although not yet fully proven, it has been suggested that mother-infant bonding may begin even before birth. During pregnancy, the mother's act of touching her belly and physically sensing the baby plays a crucial role in establishing a sense of acceptance and attachment. Separation from the attachment figure (usually the mother) in infancy may later manifest as various health problems (Nalbantoglu, 2016, pp. 5–12).

In one study, it was reported that infants who were separated from their mothers for unknown reasons after birth and who did not experience breastfeeding showed developmental delays and experienced feeding difficulties. Some researchers have emphasized the significance of physical contact and breastfeeding in the development of the mother-infant bond. It has also been suggested that an early initiation of breastfeeding is positively correlated with stronger attachment. For this reason, the initial 45–60 minutes immediately after birth are considered a critical period for mother-infant contact (Nalbantoglu, 2016, pp. 5–12).

2.5. Attachment Styles

Attachment style encompasses not only the experiences shared between mother and child, but also the infant's perception of whether the concept of attachment is associated with safety, warmth, and protection, or with abandonment, loneliness, and fear (Nacar & Gökkaya, 2019; Şen, 2007). Defined during the early developmental stages and showing continuity over time, attachment style refers to the manner in which an infant establishes relationships with others. According to attachment theorists, attachment emerges as either secure or insecure in early childhood and tends to persist throughout development. Research has shown that the patterns of attachment established in childhood may continue into adolescence (Şen, 2007). At birth, the infant has no inherent sense of security; the more the infant trusts the mother, the more likely they are to develop a sense of trust in life. Emotional exchange is a fundamental component of attachment, and the roots of human emotional development can be traced back to the attachment process (Sargin, Avşaroğlu, & Ünal, 2016). As noted by Sabuncuoğlu and Berkem (2006), drawing from Bowlby's research, insecure attachment is associated with later psychopathology, while secure attachment corresponds with healthy developmental processes (Şen, 2007).

Ainsworth, along with Wates, Blehar, and Wall, built upon Bowlby's attachment theory by conducting the "Strange Situation" experiment. Based on this study, Ainsworth and colleagues proposed different styles of attachment that develop between children and their mothers. These include secure attachment, anxious-ambivalent attachment, and avoidant attachment. In studies by Crowell and Feldman, mothers with securely attached children were generally more affectionate and warm, and tended to adopt a problem-solving approach when facing difficulties. In contrast, mothers with an avoidant attachment style were more emotionally distant and less willing to provide help. Mothers with an anxious attachment style exhibited inconsistent behaviors in offering support and assistance to their children (Şen, 2007).

2.5.1. Secure Attachment

Infants who form a secure attachment tend to cry less and show more exploratory behavior when in the presence of their mothers, appearing content while doing so. In contrast, infants with insecure attachment continue to cry even when held by their mothers and are less likely to explore their surroundings compared to securely attached infants (Şen, 2007). Securely attached children become distressed upon separation from the caregiver but can be easily soothed by others when encountering strangers; they tend to run to and hug the caregiver upon reunion. Secure attachment is observed in approximately 70% of children (Sargin, Avşaroğlu, & Ünal, 2016). Infants who have not yet formed an attachment do not display specific behaviors directed toward the mother. Maternal sensitivity is strongly associated with secure attachment, and infants who tend toward secure attachment are generally those with sensitive mothers. Conversely, infants of less sensitive mothers are often classified as insecurely attached. A correlation has been found between secure attachment and maternal enjoyment during breastfeeding (Şen, 2007).

Secure attachment developed during infancy facilitates the child's future interpersonal success (Şen, 2007). Children with secure attachment are more successful in initiating and maintaining relationships with teachers and peers (Sargin, Avşaroğlu, & Ünal, 2016). Various studies have indicated that securely attached children are more socially popular, maintain healthier peer relationships, resolve difficulties more effectively, demonstrate greater social competence, communicate more harmoniously with siblings, show stronger empathetic abilities, and exhibit fewer aggressive behaviors compared to those with insecure attachment. Mothers of securely attached children tend to be more cooperative, more responsive during feeding, and spend more quality time with their infants—patterns supported by research comparing mothers of children with different attachment styles (Şen, 2007).

Understanding emotions, solving problems, and demonstrating positive self-related behaviors are closely linked to secure attachment. Children with secure attachment are better at focusing on how to resolve negative emotions and can manage their anxiety, ultimately overcoming distress. These children's mothers accept not only their children's positive emotions but also their negative ones. Parents who acknowledge and discuss both positive and negative emotions with their children contribute to the development of their children's emotional self-awareness (Sargin, Avşaroğlu, & Ünal, 2016).

2.5.2. Anxious/Ambivalent Attachment

Anxious attachment is observed in approximately 20% of children. Children with an anxious-ambivalent attachment style tend to show low levels of avoidance but heightened anxiety. These children often experience distress in the absence of their caregivers, hesitate to explore their surroundings, and have difficulty reconciling with their mothers upon reunion. Children with this attachment style simultaneously seek and reject contact. When their caregivers attempt to interact with them, these children display behaviors marked by anger and resistance, including clinging and frustration directed toward the mother (Şen, 2007; Sargin, Avşaroğlu, & Ünal, 2016). Interestingly, anxious-ambivalently attached children may approach strangers more warmly than their own mothers. The mothers of such infants are often those who respond less consistently to their children's needs. Observations have shown that these mothers are delayed in responding when their infants cry and exhibit less tenderness in their interactions (Sargin, Avşaroğlu, & Ünal, 2016).

The inconsistency in maternal behavior and the lack of appropriate guidance based on the child's needs are thought to be contributing factors to the development of an anxious-ambivalent attachment style (Şen, 2007). According to Ainsworth and her colleagues, infants with ambivalent-resistant attachment styles show interest in their surroundings when the mother is present, but during separation, they both seek proximity to and resist the mother upon reunion. Ainsworth emphasized that the foundation of the mother-child relationship lies in the search for a secure environment; if the environment is perceived as insecure, anxiety-related behaviors are more likely to emerge in the child (Sargin, Avşaroğlu, & Ünal, 2016).

2.5.3. Avoidant Attachment

Children with an avoidant attachment style exhibit less reaction to maternal separation compared to their securely attached peers; when their mothers return, they tend to ignore them and continue playing, showing difficulty in



redirecting their attention to their mothers (Şen, 2007). While anxiously attached infants remain hypervigilant to perceived threats related to their attachment figures, infants with avoidant attachment tend to suppress thoughts and emotions associated with attachment during stressful moments. These children appear indifferent to their mothers' absence, and upon their return, they avoid physical proximity and display disinterest. They do not seek closeness or initiate interaction with their mothers, and when their mothers attempt to engage, they often appear unwilling to reciprocate. Despite their inherent desire for closeness, they may act as though there is no emotional bond with their mothers due to fear of rejection (Sargin, Avşaroğlu, & Ünal, 2016).

The mothers of children with avoidant attachment are typically distant, leading these children to develop the belief that nothing they do will satisfy their mothers. In later life, these individuals recognize a pattern of emotional neglect and frequent criticism. Avoidantly attached children are often rejected, criticized, or emotionally sensitive (Sargin, Avşaroğlu, & Ünal, 2016). Some of these individuals may develop narcissistic personality traits. They may internalize beliefs such as "I don't need anyone; I can handle everything on my own," and their parents may support this sense of self-sufficiency (Şen, 2007). Mothers of such children tend to be sarcastic, emotionally cold, and disengaged, which leads their children to experience feelings of emptiness, emotional disconnection, and avoidance of intimacy during early development (Sargin, Avşaroğlu, & Ünal, 2016).

2.6. Stages of Attachment

Attachment is a developmental process that begins in early life and progresses through four distinct stages:

Stage 1 (0–2 months): During this period, infants exhibit basic reflexive behaviors such as sucking, swallowing, turning their heads, grasping, and crying. They primarily engage with caregivers through eye contact, while caregivers explore their infants through physical touch (Sargin, Avşaroğlu, & Ünal, 2016; Kavlak & Şirin, 2007; Keskin, 2018).

Stage 2 (3–6 months): Infants begin to differentiate their primary caregivers from others, feeling safer and more secure in their presence. They become increasingly oriented toward their mothers, allowing themselves to be comforted by them. Parents, in turn, engage in verbal and non-verbal positive interactions with their infants. Infants smile, vocalize, and prolong eye contact upon seeing their mothers. This period is critical for reinforcing the foundation of attachment (Sargin, Avşaroğlu, & Ünal, 2016; Keskin, 2018).

Stage 3 (6 months and onward): Referred to as the "clear-cut attachment" phase, this stage is characterized by infants' explicit recognition of their mothers as primary attachment figures. They display protest behaviors when their mothers leave, seek them with their eyes or through vocalizations, and remain cautious around unfamiliar individuals. Attachment behaviors become particularly evident in the presence of perceived threats. By around 18 months, children seek proximity to their mothers or withdraw from threatening stimuli. These behaviors are indicators of a securely developed attachment (Sargin, Avşaroğlu, & Ünal, 2016; Kavlak & Şirin, 2007; Keskin, 2018).

Stage 4 (2 years and onward): In this final stage, as language skills develop, children are able to communicate verbally with their mothers and express their emotions more clearly. By the end of age three, attachment behavior becomes more stable and enduring. Children experience strong emotions in the process of forming, maintaining, or losing attachments. The nature of the mother-child relationship during this period is a critical determinant of secure attachment. Children who form secure attachments are observed to be less anxious and more positive in their social interactions (Sargin, Avşaroğlu, & Ünal, 2016; Kavlak & Şirin, 2007; Keskin, 2018).

2.7. Factors Facilitating Attachment

One of the primary factors that facilitate attachment is breastfeeding and the mother's willingness to breastfeed. Planned and desired pregnancies, maternal preparedness—both physically and psychologically—for pregnancy, and

a healthy gestational process significantly contribute to positive attachment outcomes. Studies have found that mothers with planned pregnancies exhibit significantly higher levels of maternal–fetal attachment compared to those with unplanned pregnancies. Furthermore, prenatal education and counseling have been shown to positively impact prenatal attachment.

The birth process also plays a pivotal role in attachment development. Mothers who experience uncomplicated deliveries tend to have higher maternal attachment scores compared to those who face complications during labor. Postnatal separation of mother and infant can hinder early contact and negatively affect the attachment process. In a study by Öztürk and Saruhan (2010), mothers who saw their babies immediately after birth had significantly higher attachment scores than those who saw them later. Furthermore, immediate skin-to-skin contact after delivery was associated with stronger maternal attachment. Mothers who reported insufficient knowledge about their newborns also scored significantly lower on attachment measures.

The postpartum period is one of heightened emotional vulnerability for mothers, and stress experienced during this time can severely impact the mother–infant bond. The process of adopting the maternal role is characterized as a dynamic and adaptive interaction, which is greatly facilitated by family and social support. A study by Çınar et al. (2012) revealed a positive and moderate correlation between maternal attachment and breastfeeding self-efficacy, with social support being a significant predictor of maternal attachment.

Although infant crying is sometimes viewed as a factor that negatively affects attachment, a study by Yalçın and Esenay found no significant difference in maternal attachment scores between mothers of healthy infants and those of colicky babies, suggesting that attachment can be sustained even under adverse conditions.

In Damato's (2004) study comparing prenatal and postnatal attachment in twin pregnancies, postnatal attachment scores were found to be lower, a finding attributed to cesarean delivery and prolonged neonatal intensive care stays. Similarly, Ahn and Kim (2005) demonstrated that early attachment disruptions in mothers of NICU-admitted infants negatively influenced their self-esteem and emotional recovery. Ahn and Lee's study on prenatal and postnatal educational interventions for mothers of high-risk infants found that such programs had positive effects on maternal attachment, self-esteem, and postpartum depression. Premature birth was also found to hinder maternal attachment. In a comparative study by Talipoğlu and Esenay (2012), family-centered care was associated with significantly higher attachment scores among mothers compared to settings where such care was not implemented (Köse, Çınar, & Altinkaynak, 2013).

2.8. Practices Facilitating Attachment

There are several practices that facilitate attachment. Through the efforts of healthcare professionals, parental education, and positive social support, mothers can be assisted in establishing and strengthening a successful bond with their infants. The mother–infant bonding process requires strong observational skills. Healthcare providers, who play a key role in the development of the mother–infant bond, should observe parents during both the prenatal and postnatal periods and record relevant notes to assess the bonding process. Signs of bonding in both parents and the newborn should be carefully observed and evaluated following birth. To establish a strong bond between mother and infant, healthcare professionals must alleviate maternal anxieties in the postpartum period and respond to mothers' questions. They should support maternal behavior, assist the mother in perceiving her baby, and help facilitate the bonding process. Healthcare providers should also offer information and support to the family to enhance mother–infant interaction. In neonatal intensive care units, to support bonding, mothers should be encouraged to talk to, touch, and engage in skin-to-skin contact with their infants (using the kangaroo care method). Professionals should assist mothers in staying with their babies for extended periods, advise them on what they can do for their babies, and involve them in the care process (Höbek Akarsu, Tuncay, & Yüzer Alsaç, 2017).

2.8.1. Kangaroo Care / Skin-to-Skin Contact

Kangaroo care is a method that helps regulate the infant's body temperature, calms the baby, and promotes skin-to-skin contact with the mother. Since it facilitates mother–infant synchrony, kangaroo care should be initiated as early as possible and its application encouraged. Studies show that early skin-to-skin contact enhances mother–infant



interaction. Research conducted by Sook et al. found that kangaroo care can be used to stabilize functions in premature infants and enhance emotional bonding and support between mother and baby. Another study demonstrated that kangaroo care administered to postpartum mothers improved mother-infant bonding (Höbek Akarsu, Tuncay, & Yüzer Alsaç, 2017).

This low-cost and equipment-free method is widely used in many countries and is supported and accepted by both mothers and healthcare professionals. However, it is not yet commonly practiced in Turkey. A study by Çalık et al. found that nurses in neonatal intensive care units reported being unable to perform kangaroo care due to inadequate physical environments, understaffing, and heavy workloads, though they supported the method in principle. The same study emphasized that improving hospital conditions, increasing staff numbers, and developing protocols based on infants' individual needs would help promote the practice (Höbek Akarsu, Tuncay, & Yüzer Alsaç, 2017).

2.8.2. Yoga and Meditation

Yoga and meditation, used in the West as mental and physical exercise systems, are known to promote relaxation. These practices help pregnant women adapt to bodily changes and establish a spiritual connection with their baby by touching their abdomen during meditation, thus helping manage physical and psychological stress and supporting maternal-infant bonding. Yoga provides pregnant women with a sense of well-being and emotional stability, fostering a healthy pregnancy. Moreover, the positive effects of yoga on the mother are believed to contribute to the infant's healthy development and strengthen mother-infant communication and bonding.

One study found that a prenatal yoga program increased maternal-infant bonding. A study by Akarsu and Ratfisch revealed that a six-week prenatal yoga program positively influenced prenatal bonding. Therefore, it is suggested that yoga can enhance mother-infant bonding by reducing maternal stress in the postpartum period (Höbek Akarsu, Tuncay, & Yüzer Alsaç, 2017).

2.8.3. Social Support

Interpersonal relationships that provide assistance to individuals throughout life are referred to as social support. Social support also includes close relationships with individuals who offer help, are trusted, and with whom personal issues are shared. Social support plays a significant role in maintaining and enhancing mother-infant bonding during the prenatal and postnatal periods. Healthcare professionals can provide social support by utilizing their counseling roles. Social support from the pregnant woman's family helps reduce cognitive and emotional stress, facilitating coping with anxiety. Thus, it has been found that social support during pregnancy enhances maternal-infant bonding. One study showed that adequate support during pregnancy reduced anxiety and depression, and positively affected maternal-infant bonding during the prenatal and postnatal periods. A study by Alan and Ege concluded that there is a significant relationship between prenatal social support and maternal-infant bonding; as social support increases, so does maternal bonding (Höbek Akarsu, Tuncay, & Yüzer Alsaç, 2017).

2.8.4. Touch and Massage

Touch is the newborn's most developed sense and the first form of communication, allowing the infant to interact with their environment. In both the neonatal stage and later developmental periods, touch plays a crucial role in helping the child perceive and become aware of their surroundings. Among the senses, touch precedes vision and hearing in the infant's process of recognizing and interacting with the world. Through physical contact, the infant begins to communicate with their environment, supporting psychosocial development. One of the most effective methods of touch to enhance mother-infant bonding is infant massage. Continued physical contact with the infant not only strengthens their sense of security but also fosters bonding. Studies show that infant massage strengthens the interaction between mother and baby and supports successful breastfeeding. Increased serotonin levels from massage help reduce stress in infants and improve sleep patterns. In the postpartum period, it is vital for midwives and healthcare professionals to provide mothers with suggestions and encouragement regarding the effects of touch, thus strengthening mother-infant bonding (Höbek Akarsu, Tuncay, & Yüzer Alsaç, 2017).

2.8.5. Rooming-In and Breastfeeding Support

Sharing the same room immediately after birth is essential for initiating mother-infant interaction. Breastfeeding promotes bonding through close contact between mother and infant. Early initiation of breastfeeding and establishing eye contact during feeding increases oxytocin release, which strengthens mother-infant interaction. Supporting breastfeeding and rooming-in has been shown to enhance mother-infant bonding, increase breastfeeding frequency, and improve breast milk production (Höbek Akarsu, Tuncay, & Yüzer Alsaç, 2017).

2.9. Mother-Infant Bonding

Bowlby emphasized that just as nutritional supplements such as vitamins and proteins are essential for the physical health of infants and children, maternal affection is equally crucial for their mental health. Mother-infant bonding is considered one of the most significant topics in postpartum research. Brockington made important contributions in identifying early disturbances in mother-infant interaction. In a study involving mothers with depression, bonding problems were detected in only 29% of the participants. To better identify such disorders, Brockington developed the *Postpartum Bonding Questionnaire (PBQ)*.

According to Kavlak, mother-infant bonding is defined as a transmission process of love between the mother and her infant, developing into a sense of trust through repeated mother-infant interactions. Mother-infant bonding refers to the process through which a bond of affection is formed between mother and baby as a result of effective and satisfying interaction. This bond develops over time into a unique and enduring form of love. Past research has demonstrated that this relationship has significant implications for all areas of child development (Akkoca, D. Y., 2009, pp. 5–9). It is also noted that the development of maternal abilities and role satisfaction—both beginning during pregnancy and continuing into the postpartum period—are essential for establishing this bond. In an experimental study conducted by Fennel and colleagues (1974), the maternal behaviors of two groups of mothers were observed. The first group was allowed to have intensive interaction with their babies during the first three days after birth, while the second group of mothers were only allowed to see their babies briefly after birth and then only for twenty minutes every four hours during breastfeeding. When comparing results at one month and one year postpartum, it was found that mothers who had early contact with their babies expressed stronger attachment and reported missing their infants more frequently when separated. Mothers in the first group also demonstrated behaviors such as assisting doctors during examinations and attempting to soothe their babies by speaking to them when they cried. Parent-infant interaction can vary based on individual differences. Some studies have suggested that mothers of well-adjusted one-year-olds may exhibit personality changes, with a common characteristic among these mothers being a responsible approach to their parenting duties (Akkoca, D. Y., 2009, pp. 5–9).

In a study by Kavlak (2004), several factors were found to influence maternal bonding, including mothers' economic status, working conditions, the age of previous children, the time taken to hold their newborns after birth, emotions felt toward the baby postpartum, the way they addressed the baby, and who the baby resembled. It is essential to provide guidance to families during maternal and infant health check-ups in order to support and strengthen secure attachment. The first step toward bonding includes practices such as *rooming-in*—keeping the baby in the same room with the mother—and regularly evaluating the cues given by the infant. Breastfeeding, making eye contact, and frequent physical holding are all factors that facilitate bonding. The mother's sense of security while breastfeeding and use of proper breastfeeding techniques are also emphasized as critical to the bonding process. Touching the baby, meeting the baby's needs, and increasing physical contact all contribute to strengthening the mother-infant bond (Şen, 2007, pp. 14–16).

2.10. Factors Negatively Affecting Attachment

Attachment is a process that develops through mutual efforts to meet each other's needs. Certain infant behaviors—such as sucking, crying, and smiling—are integral to this attachment process. For successful attachment to occur, maternal behaviors and breastfeeding play a critical role (Tüzün & Sayar, 2006, pp. 31–32).

Among the factors that negatively affect the attachment process is excessive infant crying, which can threaten the mother-infant relationship. Robinson and Moss (1970) described a case in which a mother eagerly anticipated her



baby during pregnancy. However, during the first few months, the infant cried excessively and remained unresponsive when held. The baby also showed delayed development in establishing eye contact and smiling at the mother. By the third month, the mother began to feel rejected by the infant and, in turn, began to emotionally withdraw. In another study, Bell and Ainsworth (1972) found that when mothers ignored their crying infants, the babies cried more frequently. Consequently, the mothers felt ineffective in soothing their babies and began to withdraw emotionally. This situation led to the deterioration of the parent-infant relationship and negatively impacted the attachment process. Another factor that impedes bonding is the family's inability to cope with the baby's physical impairments. Families with infants who have congenital anomalies may be more likely to reject the baby, breastfeed less frequently, or even abandon the child. Although rejection negatively affects all children, the degree of impact may vary depending on individual child characteristics (Tüzün & Sayar, 2006, pp. 31–32).

Infantile depression is another condition that adversely affects attachment. Research indicates that disruptions in mother-infant interaction—whether short-term or prolonged—can lead to this condition. These disruptions are classified as either short-term or long-term maternal deprivation. A separate study noted that in addition to consistent, continuous, and responsible parenting, it is essential that infants are capable of responding to such parental behaviors. In this reciprocal relationship, one must be capable of giving while the other must be able to receive. Infants who prefer interacting with objects or toys instead of engaging socially with their mothers are more likely to develop insecure attachment styles later in life. The child's personality traits, family dynamics, and sociocultural factors all play a role in the development of attachment (Karataş & Dağlı, 2018, pp. 76–79).

2.11. Postpartum Maternal Attachment Problems

According to Brockington (2006), one of the main causes of postpartum maternal attachment disorders is unwanted pregnancies or an inability to establish an emotional connection with the fetus. It is crucial to distinguish postpartum attachment disorders from other postpartum conditions such as depression. Even in the absence of postpartum depression, a lack of emotional bonding between mother and fetus may result in attachment difficulties. Attachment is a dynamic process influenced by various factors related to both the infant and the family. Mothers of premature infants, those with multiple births, or those caring for infants with serious health issues are more likely to experience bonding difficulties. Furthermore, psychological problems experienced by the parents, intra-family stress, neglect or maltreatment within the household, and excessive emotional detachment are all factors that may contribute to the development of attachment disorders in infants. The infant's temperament, health issues experienced during or after birth, and maternal inexperience also negatively influence bonding. Another factor threatening the mother-infant bond is excessive infant crying. Supporting the findings of Bell and Ainsworth (1972), Ünal (2004) reported that when mothers were unable to soothe their excessively crying infants, they became emotionally fatigued and eventually ignored the crying. As a result, mothers withdrew from caregiving, leading to problematic infant behaviors that negatively affected the bonding process (Akkoca, 2009, pp. 17–20).

2.12. The Concept of Breastfeeding

The concept of breastfeeding refers to the natural method by which breast milk—containing essential antibodies and nutritional components that support infant growth and development—is transferred from mother to infant. Breastfeeding plays a crucial role in the Sustainable Development Project, which all countries aim to achieve by 2030. It is critically important for realizing many of the project's goals. In Turkey, the promotion and continuation of breastfeeding remains a significant public health concern. Despite its importance, the World Health Organization (WHO) and UNICEF have reported that no country fully complies with the global breastfeeding standards. (Gültekin, 2021, pp. 4–5)

2.12.1. The State of Breastfeeding in Turkey and Worldwide

Globally, the rate of exclusive breastfeeding during the first six months of life stands at 38%, though this figure varies significantly by country. For instance, the exclusive breastfeeding rate is reported as 14.4% in Canada, 31.9%

in Kenya, 14% in Switzerland, and 13.6% in the United States. In Turkey, this rate is 41.6%. According to the 2008 Turkey Demographic and Health Survey (TDHS), the rate of exclusive breastfeeding for the first six months was recorded as 34.2%, whereas it declined to 30% in the 2013 survey. Despite global initiatives to support breastfeeding, early breastfeeding rates have not reached desired levels (Tunçkılıç, Aydin Ateş, & Küçümen, 2019, pp. 2–4).

World Breastfeeding Week is celebrated globally between August 1–7 in 170 countries, including Turkey, in commemoration of the 1990 Innocenti Declaration, which aimed to promote breastfeeding. According to UNICEF, the lack of exclusive breastfeeding in the first six months of life results in the death of approximately 1.3 million children worldwide each year. Currently, only 43% of infants under six months of age are exclusively breastfed worldwide. Infants who are not breastfed have a mortality risk 14 times higher than those who are exclusively breastfed. Data from the most recent WHO and UNICEF report indicate that an estimated three out of five newborns are not breastfed within the first hour of birth. This delay negatively affects mother-infant bonding and may increase the risk of depression in infants. Most of these cases are observed in low- and middle-income countries. In Turkey, between 2003 and 2013, the rate of early initiation of breastfeeding showed little variation, decreasing slightly from 52.3% to 49.9%. Reasons for the low prevalence of breastfeeding include overproduction of breast milk (29.8%), temperature sensitivity and redness of the nipple (28.8%), nipple cracks and bleeding (26.1%), and lack of appropriate breastfeeding environments outside the home (20.4%). Considering these findings, it is evident that providing breastfeeding counseling during pregnancy and the postpartum period is one of the essential measures to promote breastfeeding practices both in Turkey and globally (Alikasifoğlu, p. 133).

In industrialized countries, breastfeeding rates have declined rapidly. During the 1970s, only 10–25% of infants worldwide were breastfed. Since then, numerous initiatives have been implemented to promote breastfeeding and emphasize its role in mother-infant bonding. As a result, breastfeeding rates have started to rise in many developed nations. According to the 2011 Breastfeeding Report Card by the Centers for Disease Control and Prevention (CDC), while 75% of mothers in the United States attempt to breastfeed, the rate of exclusive breastfeeding for the first six months remains below 15%. Studies conducted in the U.S. show that global shortcomings in breastfeeding practices result in an estimated 911 preventable infant deaths and a \$13 billion annual economic loss (Yurtsal, 2014, p. 27).

In Turkey, nationally representative data on infant feeding and breastfeeding practices are obtained through the Turkey Demographic and Health Surveys (TDHS). The 2010 TDHS results indicate that the average duration of breastfeeding was 5.4 months for boys and 5.1 months for girls, with an overall average of 14.5 months. This represents a decline from the 2008 figure of 15.7 months (Yurtsal, 2014, pp. 27–28).

2.13. Benefits of Breastfeeding for the Mother and Infant

Extensive research in the literature has demonstrated that breastfeeding offers numerous health benefits for both mother and infant. The concept of breastfeeding is closely associated with the mother's physical, emotional, and psychological well-being not only during the postpartum and lactation periods but throughout her lifetime. Epidemiological studies comparing breastfeeding and non-breastfeeding women have revealed that those who breastfeed experience fewer health problems and require less medical intervention. Additionally, the incidence of respiratory, gastrointestinal, and circulatory system disorders is significantly lower among breastfeeding mothers (Dönmez & Yeygel, 2022, pp. 54–56).

Breastfeeding mothers also report fewer emotional difficulties compared to non-breastfeeding mothers and tend to navigate the postpartum period with fewer complications. Another study investigating the effects of breastfeeding on maternal health found that breastfeeding significantly reduces the risk of infections, uterine bleeding, postpartum depression (PPD), stress, and anxiety. Moreover, breastfeeding aids in postpartum weight control and contributes to maternal self-confidence and emotional well-being by strengthening the mother-infant bond, which is the focus of the current study. Breastfeeding is also more cost-effective than formula feeding and nutritional supplements (Dönmez & Yeygel, 2022, pp. 54–56).



In the long term, women who breastfeed have been shown to have a lower risk of developing ovarian and endometrial cancers, breast cancer, diabetes, cardiovascular diseases, metabolic disorders, multiple sclerosis, and Alzheimer's disease compared to those who do not breastfeed. Proper and adequate nutrition is crucial for the healthy growth and development of newborns. Breast milk, particularly in the early postpartum period, is rich in nutrients and antibodies that protect the infant from various infections. Exclusive breastfeeding during the first six months is recommended, followed by continued breastfeeding along with complementary foods until at least two years of age to support the health of both mother and child (Dönmez & Yeygel, 2022, pp. 54–56).

One of the most important benefits of breastfeeding is the promotion of mother-infant bonding. Beyond its physiological advantages, breastfeeding enhances emotional satisfaction and happiness in both the mother and infant. This sense of well-being is transmitted from mother to child, thereby strengthening physical closeness and emotional connection. The mother's engagement with her infant during breastfeeding—through touch, communication, and eye contact—enhances the infant's enjoyment of sucking. This interaction supports the psychological and emotional development of both mother and child, and over time, transforms into a secure attachment. In the absence of secure attachment, children may experience developmental challenges in cognitive, physical, social, emotional, and linguistic domains. One of the most critical factors influencing mother-infant bonding is the mother's intention and willingness to breastfeed (Topal, Çınar, & Altinkaynak, 2017, pp. 25–31).

The World Health Organization emphasizes that skin-to-skin contact between mother and infant enhances maternal-infant interaction and facilitates bonding. During breastfeeding, the mother holds the infant close, enabling skin-to-skin contact that fosters mutual interaction and strengthens the bond between them. A mother's intent to breastfeed is known to support the development of maternal feelings and contributes significantly to the establishment of mother-infant attachment. One study observed that skin-to-skin contact between mother and infant positively influenced the breastfeeding process, as mothers were seen to caress, touch, and express affection towards their infants during feeding (Topal, Çınar, & Altinkaynak, 2017, pp. 25–31).

Oxytocin, released during breastfeeding, reduces the mother's sympathetic nervous tone and blood pressure, thus promoting emotional expression and social interaction. The release of oxytocin and prolactin not only increases milk production but also fosters relaxation and emotional well-being in the mother. Through affectionate touch and attention, the mother becomes more attuned to the infant's behavioral cues and needs. This reciprocal relationship, supported by physical closeness during breastfeeding, deepens the emotional connection between mother and child. Breastfeeding nurtures love and intimacy, and the sensory stimulation experienced by the mother enhances relaxation and reduces stress, ultimately making breastfeeding a calming and soothing experience for the mother (Topal, Çınar, & Altinkaynak, 2017, pp. 25–31).

2.14. Breastfeeding Technique

Successful breastfeeding plays a significant role in fostering mother-infant bonding. Factors such as the proximity of the baby to the mother during breastfeeding, the mother's method of holding the breast, and the correct positioning of the baby all contribute to effective breastfeeding and the development of attachment. Several steps are essential for achieving successful breastfeeding.

2.14.1. Positioning the Baby at the Breast

A mother may choose to breastfeed either lying down or sitting. The optimal position for both the mother and the baby is the one in which the mother feels most comfortable. Regardless of the position, there are essential principles to be observed in how the baby latches onto the breast. Before breastfeeding, the baby's head and body should be aligned on the same plane, and the face should be turned toward the breast. The baby's nose should be aligned with the nipple, and the body should be close to the mother's chest. The newborn should be supported at the buttocks. When bringing the baby to the breast, the nipple should first be gently touched to the baby's lips, and the mother should wait for the baby to open its mouth.

2.14.2. Proper Latch

There are indicators that the baby is properly latched onto the breast. In newborns, the tongue is proportionally larger compared to adults and positioned more toward the back, which facilitates nasal breathing. These anatomical differences make breastfeeding easier. When the baby is properly positioned, these features become advantageous, allowing the infant to suckle effectively (Başlı & Özsoy, 2021). The portion of the areola closer to the lower jaw should be more fully in the baby's mouth than the upper portion. The baby's lower jaw should be in contact with the mother's breast. The cheeks should appear full, and the sucking should be rhythmic and gentle. Swallowing sounds should be audible. If the baby is not properly latched, problems such as nipple cracks, breast engorgement due to incomplete milk drainage, milk refusal, and inadequate milk intake may occur. Common causes of poor latch include delayed feeding, pacifier or bottle use, low birth weight, flat or inverted nipples, blocked milk ducts, inexperienced mothers, and lack of breastfeeding knowledge (Gür, 2019, p. 228).

2.14.3. Initiation of Breastfeeding

Healthy newborns are born with a natural sucking reflex. If both the mother and baby are ready, breastfeeding should begin within the first 15 to 30 minutes after birth. This is a critical period for establishing the mother-infant bond. It is advised to avoid breastfeeding between 30 minutes and 2 hours postpartum, as the newborn is typically drowsy during this time. If breastfeeding is not initiated during the first reactive phase (first 30 minutes), it should be attempted during the second reactive phase (30 minutes to 6 hours), when the baby is alert and responsive. This period offers an ideal opportunity for mother-infant interaction. Early breastfeeding helps reduce postpartum uterine bleeding in the mother and lowers the risk of hypoglycemia in the baby. Mothers who breastfeed within the first two hours postpartum tend to breastfeed for longer durations compared to those who start later. Even in cases of cesarean delivery, breastfeeding should begin as soon as the mother is conscious and both mother and infant are in stable condition. Studies show that skin-to-skin contact in the first 30 minutes after birth leads to stronger mother-infant bonding compared to those without such contact (Yurtsal, 2014, pp. 28–29).

2.14.4. Frequency of Breastfeeding

Feeding frequency varies depending on the newborn's sucking ability, stomach capacity, and the rate at which milk is drawn from the breast. Although the gastric emptying time in breastfed infants ranges from 16 to 86 minutes, the average is about 47 minutes. Based on this, breastfed infants often want to nurse again within 30 to 60 minutes. In the initial days, sucking is typically not very frequent, but it increases between days 3 and 7 postpartum, then gradually decreases. During growth spurts, the frequency of breastfeeding tends to increase. In general, newborns should be breastfed 8–12 times per day (Yurtsal, 2014, p. 18). While feeding intervals are often suggested, the infant's cues should dictate feeding times. Crying is a late indicator of hunger. Early signs include making sucking motions, bringing hands to the mouth, and stretching or flexing limbs. These behaviors indicate the baby is ready to feed (Gür, 2019, p. 228).

2.14.5. Duration of Breastfeeding

Unless there are medical issues with the mother or baby, breastfeeding duration should not be limited. Restricting the duration can cause breastfeeding difficulties. For the let-down reflex to be triggered, the baby must suckle long enough. This reflex typically activates 2 to 3 minutes after sucking begins. The amount of milk transferred varies from mother to mother and baby to baby, so feeding durations differ accordingly. Although individual differences exist, research suggests an average breastfeeding session should last about 30 minutes, with each breast being nursed for approximately 10–15 minutes. Mothers should be informed that foremilk is watery and quenches thirst, whereas hindmilk is rich in fat and provides satiety. If the baby suckles only briefly, they may not receive sufficient hindmilk, leading to frequent feeding. To ensure the baby receives the hindmilk, breastfeeding should last at least 20 minutes (Gür, 2019, p. 228).



2.15. Proper Breastfeeding Techniques

There are several alternative breastfeeding positions that mothers can use. For successful breastfeeding, both mother and infant should be in a correct and comfortable position. Inappropriate positioning may cause the mother to exert unnecessary effort and lead to fatigue. The ideal position varies based on factors such as delivery method, postpartum fatigue, physical strain during labor, maternal body shape, and breast size. Regardless of the technique or position chosen, it is essential that the mother feels relaxed during breastfeeding (Yurtsal, 2014).

Although breastfeeding is a new experience for many mothers, improper positioning can lead to complications. Incorrect latch, candida infections on the nipple, and engorgement may result in nipple cracks and headaches. Effective breastfeeding is closely tied to proper infant positioning and attachment to the mother's breast. To ensure successful breastfeeding, certain key techniques and principles must be followed. Health professionals should provide guidance and support, especially regarding how to properly position the baby. Proper alignment makes it easier for the infant to latch onto the entire nipple and draw milk effectively. There are four essential steps in positioning the baby:

1. The infant's head and body should be aligned in a straight line.
2. The mother should hold the baby close to her body.
3. The baby's entire body should be supported.
4. The baby should face the breast with the nose aligned with the nipple (Pehlivan, 2018).

2.16. Breastfeeding Positions

Various breastfeeding positions can facilitate a more effective and comfortable feeding experience for both the mother and the infant. The selection of a suitable position not only promotes optimal milk transfer but also contributes to mother-infant bonding. Each technique offers specific advantages depending on the mother's condition, the mode of delivery, and the baby's needs.

2.16.1. Cradle Hold Position

The cradle hold is one of the most commonly used breastfeeding positions among mothers. In this position, the mother sits upright while the newborn is positioned fully facing the mother. The baby's entire body should be in contact with the mother's, which is important for establishing bonding. The mother's arm should support the baby's hips and back, while the baby's head rests in the crook of the mother's elbow. Placing a pillow under the newborn not only helps maintain a straight body alignment but also brings the baby's head closer to the breast (Pehlivan, 2018).

2.16.2. Football Hold Position (Clutch Hold)

Also known as the clutch or underarm hold, this position involves placing pillows behind the mother's shoulder, under her arm, and beneath the baby. The mother supports the baby's head and neck from underneath with the hand on the same side as the nursing breast, using her forearm to support the baby's back. The baby's head is held similarly to how one would hold a ball, hence the name. This position allows the infant to latch onto the breast more easily and places less pressure on the mother's abdomen compared to other positions. It is therefore often preferred by mothers who have undergone cesarean deliveries (Pehlivan, 2018).

2.16.3. Cross-Cradle Hold Position

The cross-cradle hold is similar to the cradle hold but differs in how the mother supports the baby. Instead of using the arm on the same side as the breast being offered, the mother uses the opposite arm to support the baby's head, while the other arm supports the baby's back. The mother also uses both hands to support the breast. In short, the baby is held toward the nursing breast, with the mother supporting the base of the baby's head and under the ears using her forearm and fingers (Pehlivan, 2018).

2.16.4. Side-Lying Position

In this position, the mother and baby lie on their sides facing each other. The mother's head, arms, and back are supported with pillows, and the baby's back is supported by the mother's arm or a pillow. This position is commonly used by mothers who have delivered via cesarean section. However, due to the increased secretion of prolactin during breastfeeding—which may promote sleepiness—this position is not generally recommended for nighttime feedings (Pehlivan, 2018).

2.16.5. Sliding (Shift) Position

Sometimes, an infant may prefer to nurse while lying on one particular side. In such cases, without repositioning the infant entirely, the mother can shift the baby slightly so that the infant can nurse from the opposite breast while remaining in the same general position. This approach can prevent disruption and facilitate continued feeding (Yurtsal, 2014, pp. 18–19).

A study by Kishore et al. (2009) conducted in six villages in Northern India found that 42% of mothers with children under six years of age demonstrated secure bonding with their infants, and 60% of these mothers breastfed using correct positioning. Similarly, a study by Goyal et al. (2011) in Libya concluded that primiparous mothers were less successful than multiparous mothers in correctly positioning their infants toward the breast. Further research indicates that mothers who had cesarean deliveries experienced a higher incidence of nipple-related issues compared to those who delivered vaginally. This is attributed to postoperative pain, which may prevent cesarean mothers from achieving proper breastfeeding positions (Pehlivan, 2018, p. 19).

2.17. Ten Steps to Follow During Breastfeeding to Ensure Successful Mother-Infant Bonding

- A written breastfeeding policy should be prepared and communicated regularly to all healthcare staff.
- All healthcare personnel should be trained in accordance with this policy to promote successful breastfeeding.
- Mothers should be informed about the effects of breastfeeding on bonding and educated on its benefits.
- Mothers should be encouraged and supported to initiate breastfeeding within the first 30 minutes after birth.
- Mothers should be instructed on how to breastfeed and how to ensure safe separation from the infant when necessary.
- Families should be informed that, unless medically necessary, no food or drink other than breast milk should be given to the newborn.
- Practices should be implemented to ensure mother and infant remain together 24 hours a day to strengthen bonding.
- Mothers should be encouraged and supported to breastfeed whenever the infant shows signs of hunger.
- Pacifiers and feeding bottles should not be given to breastfed infants.
- Support groups should be established to promote breastfeeding, and mothers should be educated on the importance of mother-infant interaction for bonding.

2.18. The Importance of Breastfeeding in Mother-Infant Bonding

Bonding is considered essential for human development. Bowlby defined the concept of bonding as a close, intimate, and affectionate relationship between mother and child, characterized by mutual satisfaction and pleasure. In other words, bonding is an emotional and necessary relationship that begins in the early days of life. The bond forms through mutual interaction between the mother and the infant, and the earlier and healthier this relationship begins, the stronger the mother-infant bond becomes (Uçan, 2016). Observations show that mothers who gave birth vaginally and had immediate contact with their babies displayed more affectionate behavior compared to those who had cesarean deliveries (Kılıç, pp. 275–278).



For rapid development of the mother-infant bond, skin-to-skin contact is essential, and breastfeeding enhances this connection. Following birth, skin-to-skin contact should be maintained for at least one hour, during which the infant should be encouraged to latch onto the mother's breast. The simplest and most effective way to initiate early skin contact is by placing the newborn on the mother's chest immediately after delivery. Studies have shown that skin-to-skin contact and breastfeeding not only enhance bonding but also aid in pain management (Kılıç, pp. 275–278).

The postnatal period is considered the most critical phase within the 0–12 month developmental window. This period should be optimized by protecting the infant from harmful or dangerous situations, ensuring regular and effective breastfeeding, providing appropriate and timely care, and, most importantly, establishing a healthy mother-infant bond (Uçan, 2016).

Attachment theory explains the cognitive, emotional, and behavioral relationship between mother and child. Although the emotional bond usually forms first with the mother, other individuals may also become attachment figures over time. Research indicates that the attachment process typically develops between 6 and 24 months of age. Postnatal bonding behaviors in infants include searching for the breast, head movements, sucking, swallowing, finger sucking, grasping, and signs of hunger. The bonding process between mother and infant occurs in three stages: acquaintance, claiming, and bonding. The acquaintance stage includes the first 48 hours post-birth; the claiming stage spans from the third day to the sixth week; and the bonding stage occurs between the sixth and eighth week post-delivery (Uçan, 2016).

The mother plays a critical role in supporting the infant's healthy development. While the mother is typically the primary attachment figure, fathers also contribute to the bonding process. A newborn depends on both parents to meet all of their needs. During this period, the mother not only meets these needs but also experiences joy and satisfaction through quality interactions with the infant. These interactions further strengthen the bond between them. Early skin-to-skin contact also stimulates the release of oxytocin in mothers, which raises breast temperature, reduces stress, and promotes maternal calmness and comfort. Oxytocin plays a vital role in enhancing the mother-infant connection immediately following birth (Uçan, 2016).

To maintain the bonding process, the mother and infant should remain in the same room for the first 24 hours, and the infant should be breastfed whenever they cry. To support healthy bonding, it is beneficial for mothers to receive breastfeeding counseling during pregnancy, either from family health centers or hospitals. Additionally, mothers should be educated on the importance and techniques of breastfeeding, breastfeeding positions, and the significance of rooming-in.

Factors that negatively affect the bonding process include excessive infant crying, which can threaten the mother-infant relationship. Robinson and Moss (1970) describe a situation where a mother excitedly anticipates her baby during pregnancy, but in the early months, the excessively crying baby does not respond to the mother's comfort, smiles, or eye contact. By the third month, the mother may feel rejected and begin to emotionally withdraw from the baby. Another study by Bell and Ainsworth (1972) found that infants cried more when mothers ignored their crying. As a result, mothers may perceive their soothing efforts as ineffective and begin to disengage from their infants, ultimately damaging the parent-infant relationship and weakening the bond. Another factor that can disrupt bonding is when parents are unable to cope with physical abnormalities in their infants. Such families may resort to neglecting or rejecting the baby, including reduced breastfeeding or even abandonment. Rejection can deeply affect children, although the impact may vary from one child to another (Tüzün & Sayar, 2006, pp. 31–32).

3. RESULTS AND RECOMMENDATIONS

3.1. Results

Attachment refers to an infant's sense of security and emerges from the emotional closeness between the mother and the baby. It often becomes evident in situations of stress and fear. Insecure attachment between infants and their mothers has been associated with several negative outcomes, including depression, social anxiety disorder, and chronic pain disorder. When mothers were asked when they began to feel attached to their babies, 41% reported during pregnancy, 24% at birth, 27% within the first few weeks postpartum, and 8% after the initial weeks.

Prominent contributors to attachment theory include Bowlby, Ainsworth, and their colleagues. Based on Bowlby's observations of animals, behaviors such as clinging to the mother and following her were found to increase an infant's chances of survival. Through experimental studies, Ainsworth and her colleagues categorized attachment styles into three groups: secure, anxious/ambivalent, and avoidant attachment. In secure attachment, children perceive their mother as a secure base and express happiness when she returns after being away. In anxious attachment, the mother is not perceived as a secure base. In avoidant attachment, infants avoid interaction with the mother even when she is present. Ainsworth also conducted the "Strange Situation" experiment, which provided further insight into attachment styles. Infants who cried when their mothers left and were comforted upon their return were identified as securely attached. Others who were distressed when the mother left and remained upset upon her return were classified as insecurely attached. Infants who preferred the presence of a stranger over their mother were identified as having avoidant attachment. Bartholomew and Horowitz expanded upon these ideas by proposing four adult attachment styles: secure, fearful, preoccupied, and dismissive. Harlow's studies on monkeys demonstrated that physiological needs alone do not determine attachment, highlighting the significance of emotional and tactile comfort.

Attachment is of great importance for both the mother and the baby. Maternal behaviors, attitudes, interest, breastfeeding patterns, and several other factors significantly influence the development of attachment. Factors that positively contribute to bonding include the birth process, early contact between mother and baby, and frequent and proper breastfeeding. Practices such as skin-to-skin contact, meditation, touching, and infant massage play a significant role in facilitating and reinforcing attachment. A mother's physical contact with her baby, such as placing the baby on her bare chest, enhances the bonding process. Studies have shown that the duration and frequency of breastfeeding are crucial to developing a strong mother-infant bond, while infrequent breastfeeding can negatively affect attachment.

Breastfeeding rates vary between Turkey and the global average. While the breastfeeding rate in Turkey is 49.9%, the global average is approximately 38%. The importance of breastfeeding is recognized worldwide, not only for its health and psychological benefits for the mother and infant but also for its role in strengthening maternal self-confidence. Proper breastfeeding techniques are equally essential for the well-being of both the mother and the baby.

3.2. Recommendations

To strengthen mother-infant attachment, the foremost recommendation is for mothers to engage in interaction with their babies as soon as possible. Immediately after birth, mothers should hold their babies on their bare chest for at least one hour. They should also breastfeed frequently and for as long as possible. It is strongly recommended that the mother and infant share the same room, as this facilitates more interaction and thus fosters a stronger bond.

During pregnancy, mothers can interact with their babies by touching their abdomen and talking to them. In addition, family physicians should provide education on correct breastfeeding techniques and offer lactation counseling. Mothers should breastfeed their babies whenever they cry, as this helps to reinforce a secure attachment.

Research has shown that the tone and manner in which mothers speak to their babies affect the bonding process. Therefore, it is recommended that mothers speak to their babies in a soft tone and use kind, affectionate words.



REFERENCES

Akarsu, R. B., & Yüzer Alsaç, A. (2017). Evidence-based practices in mother-infant bonding. *Gümüşhane University Journal of Health Sciences*, 6(4), 275–279.

Akkoca, D. Y. (2009). Factors affecting mother-infant bonding after birth [Unpublished specialization thesis]. Gazi University.

Alikaşifoğlu, M. (2018). Perspectives on breastfeeding in Turkey during World Breastfeeding Week. *Turkish Archives of Pediatrics*, 53, 133. <https://doi.org/10.5152/TurkPediatriArs.2018.51515>

Başlı, M., & Özsoy, S. (2021). Observation, evaluation of breastfeeding and positioning the baby at the breast. *Turkiye Klinikleri Obstetric–Women's Health and Diseases Nursing–Special Topics*, 7(5), 50–58.

Çömlek, G. (2021). Determining the relationship between mother-infant and father-infant bonding [Unpublished master's thesis]. Medipol University.

Dönmez, A., & Yeygel, Ç. (2022). The importance of breast milk and breastfeeding in women's and children's health. *Artuklu International Journal of Health Sciences*, 2(3), 54–58. <https://doi.org/10.58252/artukluder.1189798>

Gültekin, S. (2021). Fathers' attitudes toward breastfeeding, their involvement in the breastfeeding process, and influencing factors [Unpublished master's thesis]. Aydin Adnan Menderes University.

Gür, E. (2019). The importance of breast milk and breastfeeding technique in infant nutrition. *Clinical Pediatrics Medical Journal*, 11(5), 225–232.

Karaman, E. D., & Doğan, N. (2018). On the role of motherhood: The domination of women through the “identity of motherhood.” *Gümüşhane University Electronic Journal of the Faculty of Communication*, 6(2), 1475–1496.

KarakAŞ, N. M., & Dağlı, F. Ş. (2019). The importance of attachment in infants and influencing factors. *Turkish Archives of Pediatrics*, 54(2), 76–81. <https://doi.org/10.14744/TurkPediatriArs.2018.80269>