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The Relationship Between Depressive Symptoms and Maternal Attachment in Mothers of Preterm Infants

Erken Doğum Yapan Annelerde Depresif Belirtiler ve Maternal Bağlanma Arasındaki İlişki

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ÖZ

Gebeliğin 37. haftası dolmadan bebeğin dünyaya geldiği doğuma erken doğum denir. Erken doğan bebeklerin doğumdan sonra içinde bulundukları zorlu tıbbi durum ve yeni doğan yoğun bakım ünitesinde (YYBÜ) devam etmesi gerekebilen süreç, anne-bebek ilişkisinin ilk dönemlerini etkileyebilmektedir. Öte yandan bu koşullar annenin duygusal durumunu çeşitli açılardan etkileyebilmektedir. Bu çalışma erken doğum yapmış annelerin depresif duygulanım ve stres belirtileri ile maternal bağlanma arasındaki ilişkinin incelenmesini amacıyla yapılmıştır. Çalışma bir derleme olup, konuyla ilgili belirlenen anahtar kelimelerin literatürdeki mevcut araştırmalara ulaşmak amacıyla çeşitli akademik platformlarda aratılması ve sonucunda elde edilen verilerin bir araya getirilip yeniden yorumlanmasıyla oluşturulmuştur. Araştırmanın sonuçlarına göre erken doğum yapmış annelerin depresif duygulanımları ve stres düzeyleri belirgin derecede yüksektir. Doğum haftası azaldıkça depresif belirtilerin ve stres semptomlarının şiddeti artmaktadır. Ek olarak, maternal bağlanma puanı bebeğin doğum haftası ne kadar düşükse o kadar yükselmektedir. Bebeğin yeni doğan yoğun bakım ünitesinde kalma süresi arttıkça annenin stres ve depresif belirti şiddeti de yükselmektedir. Prematüre doğum ihtimalini hamileliğin başından itibaren bilen annelerin stres ve depresif belirti düzeylerinin beklenmeyen erken doğum yapan annelere oranla daha yüksek olduğu belirlenmiştir. Araştırmanın sonuçlarına göre prematüre doğum yapmış annelerin yaşam kalitesi doğum öncesi döneme göre daha düşüktür. Çalışmada elde edilen tüm bu sonuçlara göre erken doğum yapmış annelerin miadında doğum yapmış annelere göre daha fazla psikolojik sıkıntı yaşadığı ve klinik anlamda daha riskli bir pozisyonda olduğu saptanmıştır.

Anahtar kelimeler: *annelerin bağlanması, erken doğum, depresyon, stres*

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ABSTRACT

Preterm birth refers to the delivery of an infant prior to the 37th week of gestation. The medical challenges faced by preterm infants after birth, often necessitating prolonged stays in neonatal intensive care units (NICU), can profoundly affect the early mother-infant relationship. These conditions also have the potential to influence the mother's emotional well-being in numerous ways. The purpose of this research was to examine the relationship between depressive effect, stress symptoms, and maternal attachment in mothers of preterm infants. This study is a comprehensive review based on an extensive search of academic databases using relevant keywords to identify existing research on the topic and reinterpretation of the resulting data. The findings suggest that mothers of preterm infants exhibit significantly higher levels of depressive moods and stress symptoms. Furthermore, as the gestational age decreases, the severity of these symptoms intensifies. The maternal attachment score also increases as the gestational age decreases. Additionally, the longer the infant's stay in the NICU, the greater the severity of the mother's depression and stress symptoms. It was also found that mothers who were aware of the possibility of premature birth from early pregnancy exhibited higher levels of stress and depressive symptoms than those whose preterm birth was unexpected. Moreover, the quality of life for mothers who gave birth prematurely was found to be lower than during the prenatal period. Overall, the findings indicate that mothers of preterm infants experience more psychological distress and are at a higher clinical risk than those who give birth at term.

Keywords: *maternal attachment, premature birth, depression, stress*

1. Introduction

Pregnancy, birth, and the postpartum period represent significant biological, psychological, social, and existential events that profoundly alter a woman's life trajectory (Yüzgenç, 2018). Childbirth signifies the conclusion of pregnancy and the commencement of both the infant's life and the maternal role. It is a profound life event, often leaving indelible memories for women throughout their lives (Erik & Turan, 2022). However, the post-birth transitions introduce a series of unknown circumstances and experiences. Even pregnancies that are planned, desired, and medically healthy can pose challenges for mothers, while premature birth represents a distinct period characterized by unique experiences and emotions for both the infant and the mother (Özkars, 2017). Mothers of preterm infants, along with their babies, enter a vulnerable phase that requires specialized attention and care. While some mothers may successfully navigate the postpartum period, others may face significant challenges in adjusting to their new circumstances. Consequently, during this process, mothers frequently become susceptible to mental health issues due to both the biological challenges faced by their infants and the myriad stressors experienced during premature and unanticipated deliveries (Kömürcü, 2020).

The typical duration of a pregnancy ranges from 38 to 42 weeks; however, various physiological and psychological factors can precipitate an early delivery. Such factors include infections, multiple pregnancies, hypertension, diabetes, genetic predispositions, and other complications that may necessitate cesarean deliveries (WHO, 2023). Preterm birth is defined as delivery before the 37th week of gestation and is classified into three groups based on gestational age: extremely preterm (less than 28 weeks), very preterm (28 to less than 32 weeks), and moderate to late preterm (32 to 37 weeks) (WHO, 2023). Similar to preterm birth itself, the factors leading to preterm delivery often involve traumatic experiences for both mother and infant (Özkars, 2017). The occurrence of birth unexpectedly and abruptly, often via cesarean section—considered a trauma in the literature—highlights the complexity and challenges that premature birth poses for the psychological state of the parent (Özkars, 2017; Misund et al., 2013). The separation of mother and infant during this process exacerbates the difficulties faced (Özkars, 2017). In fact, the prolonged hospitalization of the infant after birth is one of the most critical factors influencing maternal attachment. Therefore, this study aims to explore these processes related to preterm birth, the postpartum period, and maternal attachment in depth.

1.1. Purpose and Significance of the Research

Despite its prevalence, preterm birth remains underrepresented in public discourse. It is essential for mental health professionals to be knowledgeable about preterm birth and the subsequent processes to provide effective psychological support for both mothers who have experienced premature deliveries and pregnant women at risk of preterm birth (Özkars, 2017). The extended hospitalization periods required for premature infants, particularly concerning their neurological and respiratory issues, can be physically and emotionally taxing for mothers already under stress. Symptoms such as insomnia, fatigue, anxiety regarding the infant's health, physical changes, disruptions in living arrangements, alterations in daily routines, and fears of inadequacy in fulfilling new responsibilities collectively contribute to this stress (Yüzgenç, 2018). Therefore, a comprehensive examination of the mother's mental health following early birth, viewed through a broader lens, would be beneficial. A more detailed exploration of the mother's psychological state will facilitate the identification of potential psychological problems and needs that may arise during this period. This study intends to explore the impact of depression and stress symptoms on maternal attachment in mothers who have given birth prematurely.

1.2. Research Hypotheses

H1: The level of postpartum depression symptoms in mothers who give birth prematurely is significantly higher than that in mothers who give birth at term.

H2: The stress levels of mothers who give birth prematurely are significantly higher than those of mothers who give birth at term.

H3: Maternal attachment in mothers who give birth prematurely may be influenced by the birth process, as well as the elevated levels of postpartum stress and depressive symptoms; these factors may exhibit a reciprocal relationship.

1.3. Premature Birth and Premature Baby

Infants born at term are delivered within the gestational age range of 37 to 42 weeks. Infants born before the completion of the 37th week are classified as preterm, regardless of birth weight (WHO, 2023). Historically, any infant weighing less than 2500 grams was classified as premature, regardless of gestational age. Currently, these infants are categorized as low birth weight infants, with prematurity defined solely based on gestational age. Approximately two-thirds of low-birth-weight infants are considered preterm (Özkars, 2017; Turan, 2004). Preterm birth is further divided into three groups according to gestational age: extremely preterm (less than 28 weeks), very preterm (28 to less than 32 weeks), and moderate to late preterm (32 to 37 weeks) (WHO, 2023). Advances in medical technology have significantly increased the survival rates of premature infants, leading to a decline in infant mortality rates. Nowadays, infants born as early as the 24th week can survive with appropriate medical care and access to neonatal intensive care units. However, the earlier the infant is born, the longer they may require care in such specialized facilities (Özkars, 2017).

1.3.1. Frequency and Causes of Premature Birth

An estimated 13.4 million babies were born prematurely in 2020, accounting for more than 1 in 10 babies overall. According to "Born Too Soon - The Global Action Report on Preterm Birth" published by the World Health Organization (WHO, 2023) covering 184 countries in 2023, the global premature birth rate is approximately 12%. This rate varies significantly across different regions. In our country, this rate has been found to be 12.9% in recent years (Ministry of Health, 2022). On the other hand,

preterm birth, which is the second leading cause of death in children under the age of 5, is the primary cause of infant death in the critical first months of life. The infant mortality rate due to prematurity has been found to be 36% in recent years (WHO, 2023). Some survivors may experience substantial disability.

Prematurity is a condition that can also cause developmental delays. The risk of developing diseases such as mental retardation, developmental delay, learning disabilities, cerebral palsy and lung diseases is higher in premature babies than in full-term babies (Öztürk, 2010). The causes of preterm birth can be very diverse, and the exact cause of approximately half of them is unknown. Most premature births occur spontaneously, but some are attributed to factors such as infections, trauma, or certain pregnancy complications that require cesarean delivery. Other reasons that can be considered as causative factors in premature birth include the mother's age being younger than 17 or older than 35, the mother giving birth frequently and at short intervals, low socioeconomic level, smoking and substance use during pregnancy, problems arising from the shape of the uterus, problems with the placenta, diabetes, chronic conditions such as high blood pressure, multiple pregnancies, and infections. Additionally, genetic predisposition, depression, intense stress, anxiety problems and traumas are also among the factors that play a role in premature birth (Özdemir, 2020; Yüzgenç, 2018).

1.3.2. Consequences of Premature Birth

The effects of being born too early affect not only the newborn period; It manifests itself throughout life. Because premature babies are born without completing many of their anatomical and physiological developments. These deficiencies due to premature birth affect baby health, especially in the neonatal period. (Özdemir, 2020; Yüzgenç, 2018). Babies born prematurely often require special care. Various neurodevelopmental disorders, cerebral palsy, failure to develop the sucking reflex and related feeding problems, vulnerability to infection, low immune system, vision and hearing losses, mental retardation, and learning disorders are more common in premature babies. Infants born moderately and late prematurely are in the higher risk group. These babies have higher rates of hospitalization due to problems such as respiratory distress, feeding problems, and jaundice (Özdemir, 2020). Symptoms of such diseases due to premature birth may also manifest themselves as the infants grow. Cerebral palsy, learning disorders, sensory losses and developmental delays are conditions that occur in these periods and will affect the entire life cycle of the premature baby (Yüzgenç, 2018). Therefore, in addition to risky pregnancy and premature birth processes, parents may also experience difficult care processes and special needs, and new responsibilities in the family may also arise as a stress factor. All of these are important factors that affect maternal mental health, in addition to the difficult birth and postpartum process of the mother.

1.3.3. Premature Birth and Maternal Mental Health

Pregnancy, birth and puerperium are sensitive periods in women's lives. During these periods, women suffer not only physically; they also undergo significant changes in emotional, psychological and social aspects. Premature birth is a process that involves difficult experiences that can bring many negative emotions and effects in a woman's life. Maternal mental health is more vulnerable and sensitive to various risks after birth. Both hormonal changes and concerns about the baby's health can further increase the mother's feelings of stress, depressive mood, anxiety and feelings of inadequacy (Yüzgenç, 2018).

1.3.4. Premature Birth and Stress

For a woman, the end of pregnancy and the birth of her baby is an important event that affects and will continue to affect her life in many physical, social, cultural and psychological aspects (Özdemir, 2020; Güleşen & Yıldız, 2013; Dennis et al., 2007). It can be challenging at times when a new member joins the family and family members take on the responsibilities brought by this little member with new roles and learning. For this reason, pregnancy and the postpartum period can sometimes be considered as a crisis period.

The postpartum period, which spans the first six weeks following childbirth and ends with the end of the anatomical and physiological congenital changes in the mother's body and the return of the genital organs to their pre-pregnancy anatomical state (Özdemir, 2020). In the postpartum period, in addition to all these physical and hormonal changes, the mother also takes care of her baby and copes with the stress of these new responsibilities. On the other hand, changes in the mother's life affect her partner relationship, other family relationships, social life, and business life, and make the mothers worried that they will never be as comfortable as before (Özdemir, 2020).

In addition to the emotional sensitivity caused by the hormonal changes of a woman who has given birth, premature mothers may feel more anxious about their baby's health and more stressed about the uncertainty of the process. Intense stress following this sensitive period can increase anxiety and depressive mood and reduce the psychological resilience of the mother (Özdemir, 2020; Tezel & Gözüm, 2005; Taşkın, 2016). If it is the mother's first birth, it can be more problematic due to both inexperience in caring for a baby and difficulties in meeting the special needs of prematurity. In this case, the feeling of isolation from the social environment, frequent questioning of mothering skills and the feeling of inadequacy can increase the mother's anxiety that "something is not going right" triggered by premature birth.

Factors that contribute to stress in mothers following premature birth can be listed as follows. Firstly, mothers often blame themselves for any negative health outcomes experienced by their newborns and feel inadequate and responsible. Additionally, the intensive care process that the baby undergoes immediately after birth can heighten maternal stress levels. Concerns about the baby's susceptibility to illness, injury, or mortality due to its small and fragile nature further increase maternal distress. Moreover, the failure of the father and other family members to provide adequate attention and support to both the mother and the baby can exacerbate maternal stress. The disruption of care for other children at home, if applicable, during the prolonged hospital period can also contribute to maternal strain. Furthermore, the sight of the baby in the intensive care unit, along with the use of medical equipments such as serums and respirators, may lead the family to perceive the baby's condition as more serious, intensifying parental stress. Additionally, situations such as limited visitation, restricted physical contact, and the inability to breastfeed during the intensive care period serve as additional stressors for parents (Özdemir, 2020; Ayers et al., 2016; Barut et al., 2015; Nambiar et al., 2011).

1.4. Premature Birth and Attachment

1.4.1. Maternal Attachment

According to Bowlby, attachment is a strong bond between two people. Attachment is the tendency of people to establish close and strong relationships with the individuals around them and is a need that is as important as nutrition and reproduction for the struggle for survival (Bowlby, 1973). From the moment it is born, a baby needs more parental care and assistance to survive than the offspring of all other living things. This situation creates a need for more coexistence and attachment for the mother and baby (Özkars, 2017; Soysal et al., 2005). Every child has an innate tendency to form attachment

relationships. Underneath this attachment tendency are desires such as being supported in stressful and/or challenging events, receiving answers when needed, being protected when taking shelter, and being reciprocated when sharing positive emotions (Özkars, 2017; Özdemir, 2020).

According to Bowlby, the first attachments a baby establishes with its mother play a major role in the development of its personality and in determining the dynamics of future relationships (Bowlby, 1982). The quality of the relationships he will establish in adulthood is determined by the interaction he develops with his parents in infancy and early childhood, and it is important that themutual interaction is problem-free. Research on attachment theory suggests that a healthy and strong bond established between mother and baby contributes to the development of the baby by supporting it physically, cognitively and emotionally (Mantymaa et al., 2006).

When "attachment" is considered as "mother-infant attachment", it can be expressed as "the attachment of the baby to the mother and the emotional bond of the mother to her child" (Özdemir, 2020). In 1958, Bowlby began to investigate the relationship between baby and mother, using the term "attachment" for the first time. With this situation, many studies have begun to be conducted on the attachment between mother and baby (Özdemir, 2020; Gereklioğlu et al., 2007; Özdoğan et al., 2014).

According to Bowlby, the foundations of a secure attachment between mother and baby are laid when the stimuli sent by the baby for care and the mother understands these warnings and provides the necessary care for the baby (Bowlby, 1965). According to Winnicot, the other side of attachment occurs when the mother empathizes with her baby and has the sensitivity to meet her baby's needs (Winnicot, 1987). The attachment between mother and baby facilitates the acceptance of the parenting role, allowing the baby to recover more quickly and accelerates its adaptation to the external environment (Özkars, 2017).

The attachment that begins between the mother and baby immediately after birth is manifested by behaviors such as seeking the breast, sucking, turning the head, swallowing, thumb sucking, catching, turning towards the mother, and sensing feeding times. The earlier this attachment between the mother and baby develops, the greater the mother's adjustment to the maternal role. For this reason, it is reported that the baby's interaction and communication with the mother in the first 60-90 minutes after birth, and if this cannot be achieved, establishing this bond, especially in the first three days, will positively affect both the baby's development and the mother's behavior (Özdemir, 2020). Early skin-to-skin contact positively affects mother-baby attachment in prematurely born babies (Endam, 2017).

Early skin-to-skin contact: After birth, the aim should be to place the baby naked, face down, on the mother's bare chest at birth or immediately after birth, and to provide sensory stimuli such as touch, temperature and smell. In this way, maternal oxytocin is released, anxiety decreases, calmness and social sensitivity increases, and attachment behaviors with sucking give results (Özdemir, 2020; Endam, 2017).

1.4.2. The Relationship Between Premature Birth and Attachment

If the consequences of premature birth and maternal attachment are considered together, it is noticed that the effects of premature birth manifest not only after birth, but also in the long term. On the other hand, in the last three months of pregnancy, the period when the mother is preparing to separate from the baby is interrupted by a sudden birth. The baby is born earlier than expected (Özkars, 2017). Since birth occurs before the ideal of the "baby" in the mother's mind transforms into her "own baby" over time and is replaced by reality, the mother feels weak and powerless in the face of the differences between her premature baby and the ideal baby, and may be disappointed (Goutaudier et

al., 2011). Instead of the "ideal baby" image that she dreams of throughout pregnancy, the mother is faced with the reality of a premature baby with developmental weaknesses, and the baby is admitted to the neonatal intensive care unit without being able to contact the mother (Özkars, 2017; Korja et al., 2012). In this process, mothers may not have the chance to touch the baby for days after birth and there is physical distance (Özkars 2017; Baum et al., 2012). Due to long-term hospitalization, premature babies have limited communication with their caregivers in the first days of their lives, but physical closeness and coexistence are necessary to establish parent-child attachment (Coppola & Cassibba, 2010).

Mothers of premature babies are people who could not have the parental role they dreamed of (Özkars, 2017). The extra responsibilities of a baby born before the necessary preparations are completed can further complicate the mother's mood. On the other hand, they may feel that they are guilty of this premature birth and may think that they are responsible for critical situations related to the baby's health (Özkars, 2017). The emotions felt by the mother, especially in the early postpartum period, are predominantly disappointment, guilt, sadness, anger, mourning and inadequacy. In this process, the feeling of self-confidence and competence is low (Singer et al., 1999). When both the baby's health condition due to premature birth and the mother's psychological state due to premature birth are evaluated together; It seems that the failure to provide the physical closeness and contact necessary for attachment between mother and baby in the early period reveals the direct relationship between prematurity and maternal attachment.

1.4.3. Motherhood Blues – Baby Blues

Birth and the postpartum period are considered a special and beautiful period for most women. During this period, women experience many biological, physical and psychological changes. The postpartum period is a period that begins after the placenta separates after birth and lasts until approximately 6 weeks. In addition to physical changes, hormonal changes also occur in women after birth. Due to these rapid hormonal changes, postpartum psychological problems may occur in women. The most important of these problems is increased stress and distress in the mother. The mother may feel different, restless or sad compared to her prenatal state (Yüzgenç, 2018). In this condition, called motherhood blues or baby-blues, temporary and self-limiting behaviors may be observed in the mother (Yüzgenç, 2018; Kurt & Kısa, 2004). Symptoms usually appear within the first 2 weeks, 4-5. It reaches its highest level on days and is expected to resolve within 2 weeks (Kendell et al., 1981).

Since there is no universal definition of motherhood blues, an exact incidence has not been determined. Various studies reveal that it is a mental condition that can be observed in 5070% of mothers who have just given birth (Kara et al., 2001).

Women experiencing motherhood blues usually experience problems such as crying, sleep disturbance, anxiety, tension, rapid mood changes, getting angry easily, fatigue, weakness, disappointment, irritability, crying easily, sensitivity to criticism, and loss of appetite (Öztürk, 2010; Yüzgenç, 2018). However, these problems are at a level that does not directly affect the mother's functionality and care for the baby (Yüzgenç, 2018; Eksi, 1999; Askın, 1999). However, in risky situations, it would be beneficial to evaluate the possibility of postpartum depression and keep the mother under observation by her relatives. Family members should be informed that these symptoms are temporary and the importance of supporting the mother should be emphasized. It should be reminded that if these symptoms persist for more than 2-4 weeks, specialist support should be sought (Özkars, 2017; Karamustafaoğlu & Tomruk, 2000).

1.4.4. Postpartum Depression

Birth is a situation that can lead to very important and versatile changes in a woman's life. After birth, which brings with it many physiological, psychological, social and hormonal changes, women try to adapt to these changes and meet the needs of their baby by taking care of him. In the postpartum period, women are at greater risk of many psychiatric disorders, which can range from maternal blues to depression and even postpartum psychosis (Özkars, 2017).

Postpartum depression is the most common complication, affecting approximately 13% of women (O'Hara et al., 1996). Postpartum depression is a psychiatric disorder with an insidious onset that is likely to begin within the first 4 weeks following birth, but can also begin between 3-6 months (Sadock, 2006). Among women experiencing postpartum depression, the rate of women stating that this was their first depression was determined to be 60%. An increase in depression is often observed within the first 30 days, and in severe cases, this period can last up to 2 years (Karamustafalıoğlu & Tomruk, 2000). It has been determined that 20% of deaths by suicide occur in the postpartum period (Gereklioğlu et al., 2007). The etiology of postpartum depression is unclear and causal factors have not been fully established. However, some studies have shown that the postpartum period is four times riskier for the emergence of serious mental disorders compared to the pregnancy period (Yüzgenç, 2018; Nonacs & Cohen, 1998). On the other hand, it has been found that women who experience postpartum depression are twice as likely to experience depression within five years after birth compared to women who do not experience it (Cooper et al., 1998). Although the exact cause is not known, the factors that may lead to postpartum depression are revealed by studies as follows: socioeconomic problems (unemployment, low income), relationship problems between the mother and her partner, sudden life events such as unexpected pregnancy, death, separation, history of postpartum depression or depression before or after pregnancy, early separation of the baby from the mother due to various health problems (premature birth, jaundice and other medical complications), traumatic birth history, concerns about the care of the baby.

The symptoms of postpartum depression are similar to clinical depression (depressed mood, lack of pleasure, sleep and appetite problems, feelings of worthlessness and guilt, thoughts of death and suicide) (Özkars, 2017). Postpartum depression is accompanied by symptoms such as apathy towards the baby or family, concerns about the baby's nutrition, thoughts about harming the baby, guilt and feelings of inadequacy (Yüzgenç, 2018; Karamustafalıoğlu & Tomruk, 2000). The intensity of symptoms may vary from day to day. Therefore, early diagnosis is important. It has also been determined that the rate of infantile colic in babies of mothers who have experienced postpartum depression is higher than other babies (Yüzgenç, 2018). As such, early diagnosis and early initiation of treatment will contribute positively to the health of the mother and baby.

2. Method

For this research, "tez.yok.gov.tr", "scholar.google.com" and PubMed were used as research engines for literature searching. The keywords used for searching were "Preterm birth, premature baby, attachment, quality of life, stress and depression". A total of 33 relevant articles were selected for review. Although there is a large archive containing these keywords, andother studies on these topics were available, they were excluded due to a mismatch with the research goals. As a result, a review was written in which premature birth, stress and depressive symptoms were examined within the framework of maternal attachment.

3. Discussion

In this section, the findings of the research conducted to examine the relationship between stress and depressive symptoms experienced by mothers with premature babies, and attachment of the mother are discussed in the light of the literature. Additionally, the limitations of the study and suggestions that may contribute to the field of mental health are included.

3.1. Relationship Between Premature Birth and Postpartum Depression

For the pregnant woman, the 9 months and 10 days of pregnancy is a transitional phase to complete the preparations for the baby's delivery. It is important for the pregnant woman to be psychologically ready to welcome her baby and to assume the roles and responsibilities of motherhood. If the birth occurs earlier than expected, it means that the mother takes on new and challenging responsibilities without completing these preparations. While birth is difficult in itself, caring for a baby born with different and special needs becomes an even more stressful situation (Yüzgenç, 2018; Carter et al., 2005). Termination of pregnancy is sudden and premature birth does not give the mother the opportunity to prepare herself for the delivery (Lasiuk et al., 2013). All members of the family are worried about the baby's health. In this process, which should normally be a happy time, parents experience emotions such as sadness, despair, shock, anxiety, guilt, anger and silence rather than the beautiful feelings associated with having a baby (Çalışır et al., 2008; Erdeve et al., 2008; Yıldırım & Gökyıldız, 2010). The process does not end with premature birth; on the contrary, it is just the beginning (Özkars, 2017). According to research, mothers of premature babies experience problems such as postpartum blues, postpartum depression, anxiety and stress more frequently than mothers who give birth at term (Yüzgenç, 2018; Erdeve et al., 2008).

Mew et al. (2003) reported that 20% of mothers with premature babies experienced depression when they reached the 6th month after birth. Davis and colleagues (2003) stated that 40% of mothers of babies born before the 32nd week of pregnancy experienced depression in the first month after birth (2003). Vigod et al. (2010) meta-analysis, which evaluated 26 studies conducted with mothers of 2392 premature babies, found that approximately 40% of mothers experienced symptoms of depression in the early postpartum period.

Miles et al. (1999) found in their study that 45% of mothers of medically fragile premature infants were at risk for depression at the time of discharge from the hospital, and 36% were at risk 12 months later. These findings indicate that nearly half of the mothers carried a significant risk score for depression at discharge, and one-third still carried a significant risk score for depression at 12 months postpartum.

Since the baby's birth is only a few months away, families are not adequately prepared both physically and emotionally. When a pregnancy ends unexpectedly, the mother does not have time to prepare herself for parting with the baby (Lasiuk et al., 2013). Extended family members are often concerned about the health of the mother and baby. Unexpected changes during this process, suddenness of everything, possible risks that the mother and the baby may encounter can take the birth experience, which traditionally should be welcomed with joy, to a different dimension (Goutaudier et al., 2011).

The process does not end after birth, on the contrary, it just begins. The duration of the baby's stay in the incubator and the sometimes-life-threatening situations he experiences there means the continuation of traumatic events for the family. The baby's separation from the mother and hospitalization in the Neonatal Intensive Care Unit (NICU) is a very hurtful process for parents (Özkars, 2017; Greene et al., 2015). In addition to the baby's health, which shows risky changes throughout this process, the mother's long-term separation from her baby is also one of the factors that trigger postpartum

depression in the mother. Premature babies are often in danger in terms of vitality and neurological development. While this situation makes the mother very worried, the time spent in the incubator creates physical and emotional distance (Özkars, 2017; Athanasopoulou & Fox, 2014). Not being able to be around the baby enough and not being able to take part in its care can make the mother feel inadequate as a parent (Özkars, 2018).

3.2. Quality Of Life of Mothers Who Gave Birth Prematurely

According to the World Health Organization, quality of life (QoL) is "the way people perceive their health status within the context of the culture and value judgments in which they live, in connection with their goals, expectations, standards and interests" (WHO, 1995). As expressed in this definition, quality of life is subjective and based on the person's perception and may vary culturally. In other words, what is important in quality of life is how a person perceives himself psychologically, physically, socially and existentially, rather than what the society or age brings or requires. The relativity of the definition also means that it is not universal.

After premature babies are discharged from the NICU, different processes await them compared to term babies. After discharge, eye checks and hearing tests continue until the time of chronic labor. Their weight is closely monitored by pediatricians because not all of them may have acquired the ability to suck and this may cause them to lose weight. They have a more sensitive structure and lower body temperatures than babies born at term. Their weak immune systems can easily cause them to get sick. These show that the care of premature babies is more difficult than the care of term babies (Özkars, 2017).

The process mentioned above is the process of babies being discharged in a healthy manner. Even though they are discharged after months in intensive care, they may be on a ventilator at home. It may take more than a year for them to breathe on their own. They have difficulty moving because their muscles are weak. Many extremely premature babies may need to receive physical therapy support.

While the majority of women of reproductive age are in good health before pregnancy and remain healthy throughout pregnancy, many pregnant women experience significant declines in functionality after birth that may be permanent. The process becomes more complicated when the difficult process after premature birth and a baby who is difficult to care for are included. According to research, premature babies are more difficult to care for. It is more difficult to soothe them and it is more difficult to understand the clues they give than for fullterm babies. Additionally, sleeping and eating problems have been reported in many premature babies (Özkars, 2017).

Premature birth and the process it brings are very tiring for the primary caregivers of the baby -traditionally in our country, these people are mostly mothers. However, premature babies may be more inactive and unresponsive compared to term babies. It can be equally difficult to understand a creature that is in great need of care and to read the clues it sends. While some families can adapt to the situation, some families may experience the stress of health problems caused by premature birth for years (Saigal et al., 1996).

There are studies in the literature about the quality of life of individuals born prematurely.

However, studies on caregivers of premature babies are very limited. Rivers et al. (1987) focused on the personal and family lives of parents of extremely low birth weight infants. In the study, open-ended questions were asked to families about their children and it was observed that the children were between the ages of 3 and 7. 41% of parents of children with neurological problems stated that their children required physical care, 23% stated that it restricted their social life, and 9% stated that it

caused stress in their marriages. Parents of normally developing children with neurological problems emphasized that they appreciated their children more than normal, that premature birth brought family members closer, and that the extended family was important in daily care. Additionally, 40% of both groups of parents are concerned about the costs incurred for their children's health. However, ongoing hospital costs tend to be of greater concern to families of children with neurological problems (Rivers et al., 1987).

In a study conducted by Macey et al. (1987) with parents of very low birth weight babies whose chronological age was 12 months, it was observed that 70% of the parents thought that the birth of their baby had negative effects on the family. On the other hand, 82% of parents of term babies think that the birth of their babies has a positive impact on the family. As a result of this study, researchers said that "premature birth is when expectations come under attack."

In a study conducted on 708 mothers in Turkey and examining the relationship between postpartum depression and quality of life of mothers, the quality of life score of mothers with high postpartum depression scores was lower than those with low postpartum depression scores. Considering that the prevalence of postpartum depression is higher in mothers who gave birth prematurely than in those who gave birth on time, it may be possible that the quality of life of mothers who gave birth prematurely is lower. Quality of life and depression significantly predict each other. The quality of life of a depressed mother decreases, and the depressive symptoms of a mother whose quality of life decreases increase (Durukan et al., 2011).

In the study conducted by Küçükoğlu et al. (2014) at Elazığ State Hospital, it was examined that the anxiety levels of 110 mothers with infants hospitalized in the NICU were high, and various difficulties emerged during the postpartum period along with the burden of parenthood. Parents experience cognitive, emotional, and behavioral difficulties, which also affect their lifestyles. It has been observed that if the mother has a predisposition to depressive personality traits, she struggles to overcome these difficulties, experiences sleep problems, and disrupts the child's feeding.

A study conducted with 78 participants who showed symptoms of postpartum depression in the postpartum period (4–38 weeks) showed that women who were depressed in the postpartum period had significant deteriorations in their health-related quality of life. Findings suggest that experiencing even milder forms of depressed mood significantly reduces physical well-being. The study showed that poor sleep quality worsened mental health status among women who were depressed in the postpartum period, even after controlling for depressed mood (Da Costa et al., 2006). Since the depressive mood of mothers of premature babies is expected to be high, it is possible that their quality of life will decrease (Özkars, 2017).

Long-term Effects of Preterm Birth on Mental Health: Various studies on the long-term effects of preterm birth have identified significant short-term changes in mothers' quality of life, as well as ongoing effects in the long term. According to Janssen et al. (2023), when mothers were asked about their need for psychosocial support, anxiety, and depression symptoms approximately 13 years after spontaneous preterm birth, it was found that even if they did not receive support, they still felt the need for it, experienced the effects of the preterm birth in their lives, and continued to feel anxiety and psychosocial distress related to the preterm birth.

On the other hand, various studies have shown that the symptoms of PTSD in parents following preterm birth can persist for more than two years. Additionally, the rates of anxiety and depressive symptoms caused by traumatic stress are higher in parents of preterm infants compared to parents of full-term infants (Pace et al., 2020). Similarly, the need for various psychoeducational and psychosocial support has also been found to be greater.

Preterm Birth and Maternal Attachment: Maternal attachment is a critical psychological construct that encompasses the emotional bond between the mother and her infant, significantly influencing the dynamics of interaction, emotional responses, and caregiving behaviors. The process of maternal attachment is particularly vulnerable to disruption following premature birth. The unpredictability of preterm labor, the infant's extended hospital stay, and the array of medical interventions can introduce substantial stressors that impede the development of this attachment (Özkars, 2017).

Research indicates a complex relationship between premature birth and maternal attachment. While some studies suggest that mothers of preterm infants often exhibit lower levels of attachment compared to those with full-term infants, other findings propose that these mothers may intensify their caregiving efforts, thereby fostering a strong attachment despite the challenges. This counterintuitive relationship suggests that the effects of premature birth on attachment may be nuanced and context-dependent, reflecting an adaptive response to adversity (Topal & Çaka, 2023).

Factors such as the number of pregnancies can significantly influence maternal attachment and stress levels. For instance, Özden (2019) highlights the lack of statistically significant differences between pregnancy counts and attachment or stress levels. Contrarily, some literature posits that a decrease in the number of pregnancies correlates with heightened attachment levels, potentially reflecting increased maternal investment with each subsequent child (Özdemir, 2020; Walker et al., 1986; Yılmaz & Beji, 2010).

Interestingly, Özdemir (2020) reports that mothers of premature infants exhibit high maternal attachment scores, a finding echoed in studies by Öztürk & Saruhan (2013) and Özkars (2017). This suggests that, despite the inherent challenges associated with preterm birth, many mothers are able to form strong emotional bonds with their infants, potentially as a coping mechanism in response to the stress of prematurity.

Preterm Birth and Family: The arrival of a premature or low birth weight infant plunges families into an emotional crisis, marked by heightened stress and uncertainty. The extended hospital stays and the ambiguous prognosis contribute to escalating levels of anxiety and depression within the family unit (Ertem et al., 2008). Mothers may grapple with feelings of inadequacy and guilt, perceiving their inability to deliver a healthy baby as a personal failure. This diminished self-esteem can lead to reluctance in engaging with their infants, fostering a cycle of negative perceptions that can adversely affect maternal-infant interactions.

Recent studies reveal alarming trends: mothers of preterm infants often delay physical contact, such as touching or holding their babies, which can exacerbate the already tenuous bond (Yüzgenç, 2018). Moreover, the inability of premature infants to communicate their needs can create a feedback loop of misunderstanding and frustration between mother and child. Positive emotional experiences are crucial for the infant's growth and development, underscoring the importance of emotional support from family members. Research consistently highlights that robust family support, especially from first-degree relatives, significantly enhances maternal infant interactions and promotes healthier emotional outcomes.

In light of these dynamics, the pervasive nature of depression within family systems cannot be overlooked. Depression not only affects the individual but can also cascade through familial relationships, especially impacting children (Öztürk, 2010). Implementing effective psychoeducation interventions can be crucial in preventing these distressing dynamics from escalating into more profound familial crises.

3.3. The Other Parent in the Premature Birth Process: The Role of the Father

The challenges posed by premature birth extend beyond the mother, encompassing fathers who are often overlooked in the discourse surrounding perinatal mental health. As awareness of paternal involvement grows, the importance of fathers as emotional supporters and caregivers is increasingly recognized. Research indicates that fathers experience significant emotional and psychological turmoil during this period, grappling with anxiety, fear, and uncertainty related to their child's premature arrival (Özkars, 2017).

The emotional challenges faced by fathers can manifest in various ways, potentially leading to postpartum depression, thereby complicating their role in the family unit. However, the paternal role is not limited to providing emotional support; active involvement in both prenatal and postnatal care has been linked to improved health outcomes for both mothers and infants. Engaging fathers in postnatal care fosters a sense of agency and responsibility, positively influencing maternal recovery and infant development.

In summary, fathers play an indispensable role in the premature birth process that extends beyond mere support for mothers; they are vital components of the family support system in the postpartum period. Their emotional and practical contributions can significantly enhance the health of premature infants and the overall family dynamics. Therefore, it is essential to understand and advocate for the needs of fathers during this critical time, integrating their experiences into a comprehensive family-centered approach that recognizes the multifaceted nature of perinatal mental health.

3.4. Premature Birth and Partner Relationship

Premature birth can be an important turning point in a couple's relationship and can have various effects on the relationship. This situation becomes evident with the difficulties, stress and efforts that couples face to maintain emotional balance. Premature birth can affect the relationship between couples both positively and negatively and determine how couples cope during this process.

Premature birth can be a source of increased stress in the relationship between couples. When couples face factors such as the baby's unexpected health problems and long hospital stays, this can place an intense emotional and practical burden on the relationship. As stress increases, communication and harmony between couples may become difficult. However, premature birth can also strengthen the bond between couples. This process can be a period in which couples have the opportunity to overcome difficulties together and be in solidarity. Shared experiences and challenges experienced together can further strengthen the bond between couples and increase the sense of unity in the relationship.

Another factor that affects the relationship between couples is role changes. Premature birth may require couples to redefine their traditional roles. Fathers, in particular, may have to take a more active role in baby care, which may affect the process of restoring balance in the relationship (Noergaard et al. 2018; Bintaş Zörer et al., 2019).

4.Conclusion

Premature birth significantly affects the psychological and emotional well-being of mothers, disrupting the expected progression of pregnancy and resulting in a challenging postpartum period. The abrupt transition to motherhood leaves many mothers unprepared, increasing the likelihood of postpartum depression, anxiety, and stress. Studies indicate that mothers of premature infants are more susceptible to these conditions compared to mothers of full-term babies.

The difficulties faced by mothers of premature infants are multifaceted. The unexpected birth deprives mothers of the time needed to prepare emotionally and practically for their new role, leading to feelings of inadequacy and overwhelming stress. The extended hospital stays and intensive medical care required for premature babies only add to this burden, as mothers must cope with prolonged separation from their infants and constant concern for their health and survival.

The quality of life for these mothers is significantly affected. Premature babies often require extensive medical care and follow-up, including regular check-ups, monitoring for developmental delays, and potential ongoing treatments. This constant vigilance and care are physically and emotionally draining, reducing the mother's ability to care for herself and maintain a balanced life. The demanding nature of caring for a premature baby, characterized by frequent medical appointments and potential long-term health issues, exacerbates the emotional and physical toll on mothers.

Family dynamics are also strained by premature birth. This unexpected and stressful situation can lead to increased tension and emotional distress within the family. Fathers, while crucial in providing support, also experience significant emotional challenges, including anxiety and fear for their baby's health. Their active involvement is essential in mitigating stress and supporting the mother's mental health, but they too require support to navigate this difficult period.

Maternal attachment is another critical area affected by premature birth. The separation caused by the baby's stay in the NICU and the medical interventions can hinder the attachment process between mother and infant. Despite these challenges, some mothers develop a stronger attachment to compensate for the initial separation, although this varies widely among individuals. High maternal attachment scores are often observed among mothers of premature babies, suggesting that while the bonding process is initially disrupted, it can be strengthened over time with the right support and intervention.

In conclusion, premature birth imposes a complex set of emotional, psychological, and practical challenges on mothers and families. The impact on maternal mental health, quality of life, and family dynamics necessitates comprehensive support systems. Recognizing and addressing the unique needs of these families is crucial for improving their overall well-being and fostering a supportive environment for both the mothers and their premature infants. Understanding the importance of maternal attachment and providing targeted interventions can help mitigate some of the adverse effects and promote healthier outcomes for both mother and baby.

5. Limitations

This review article on the relationship between stress, depressive effects and maternal attachment in mothers who gave birth prematurely faces several important limitations. First, the limited number of studies on this subject may cause the review not to be based on a large database and may affect the generalizability of the overall results. Methodologies used across various studies may differ, making comparison of results difficult. For example, different scales, measurement tools, and participant profiles may lead to incompatible findings. Additionally, the diversity of demographic characteristics (such as age, socioeconomic status, cultural background) of mothers who gave birth prematurely may limit the generalizability of the results, and it is possible that various sample groups may show different results. The fact that most of the studies were conducted over a certain period of time may result in long-term effects not being adequately examined, and there may not be sufficient data on the long-term effects of preterm birth. The complex interactions of psychosocial factors such as stress, depressive effect, and maternal attachment with each other and with external factors can make it difficult to clearly establish causal relationships. Additionally, the fact that studies with positive results are more likely to be published may not reflect the overall trends of the studies included in the

review, making the results of the review misleading. Including only studies in certain languages (e.g. Turkish and English) may exclude important studies in other languages, which may overlook regional or cultural differences.

Finally, other factors that are beyond the scope of the review but may have an impact (e.g., partner support, access to healthcare, genetic factors) may hinder a full understanding of the results. Considering these limitations, readers can be informed about how the article's findings should be interpreted and which areas should be further explored for future research.

6. Recommendations

In line with the data obtained in the research, certain recommendations will be discussed to protect the mental health of women at risk of premature birth. From the moment the mother learns that she will give birth prematurely, receiving support to prepare herself psychologically for this situation will enable her to manage the process better from the very beginning. Likewise, giving information to the mother before birth about premature birth and the health status of the premature baby will help her in terms of better understanding and preparing for what awaits her during the process. It is also important for the mother to be adequately informed about the type of birth and to prepare psychologically for cesarean birth, and to prepare adequately for birth by clearly sharing the possible risk factors during birth. Because most premature births occur by cesarean section. On the other hand, the family should be adequately informed to help the mother get through the process more easily with the support of her partner and family. It is also important to reduce the feeling of unsuccessful birth/without a baby by providing mothers with opportunities to see and touch their babies as much as possible after birth. It will also be beneficial for the mother's mental health to receive professional support during the postpartum period and to be observed by her close circle or mental health professionals against the risk of postpartum depression.

Authors' Contributions & Declaration of Conflict of Interest

The authors contributed equally to the article and no conflict of interest is declared.

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