

**MOTHER TO INFANT BONDING IN PREMATURE
AND FULL-TERM INFANTS' MOTHERS IN
RELATION TO CENTRALITY OF EVENT AND
POSTTRAUMATIC STRESS DISORDER
SYMPTOMS**

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MOTHER TO INFANT BONDING IN PREMATURE AND FULL-TERM INFANTS'
MOTHERS IN RELATION TO CENTRALITY OF EVENT AND POSTTRAUMATIC
STRESS DISORDER SYMPTOMS

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ABSTRACT

MOTHER TO INFANT BONDING IN PREMATURE AND FULL-TERM INFANTS' MOTHERS IN RELATION TO CENTRALITY OF EVENT AND POSTTRAUMATIC STRESS DISORDER SYMPTOMS

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The present study aimed to investigate the mediating role of centrality of event between posttraumatic stress disorder and maternal bonding. There were total 98 mothers whose babies are aged between 1 to 6 months. 53 of them were premature babies' mothers ($M= 29.98$ $SD=4.65$) and 45 of them were full-term babies' mothers ($M=31.73$ $SD=3.84$). The study aimed to investigate the mediating effect of centrality of event on the relationship between posttraumatic stress disorder symptoms and maternal bonding. Furthermore, the second purpose of the study was to make a comparison of demographic information between preterm and full-term babies mothers. The results of the study indicated that centrality of event doesn't mediate the relationship between posttraumatic stress disorder symptoms and maternal bonding. However difference in maternal bonding between full-term and premature groups were found. In addition, type of birth was introduced as a main variable to the study and an interaction effect of centrality of event and emergency cesarean delivery on posttraumatic stress disorder symptoms was revealed.

Keywords: Premature birth, posttraumatic stress disorder, maternal bonding

ÖZ

ERKEN DOĞUM YAPAN VE MİADINDA DOĞUM YAPAN ANNELERDE, TRAVMA SONRASI STRES BOZUKLUĞU SEMPTOMLARI VE MATERNAL BAĞLANMA ARASINDAKİ İLİŞKİDE OLAYLARIN MERKEZİYETİNİN ARACI ROLÜ

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Bu çalışmanın amacı olayların merkeziyetinin , travma sonrası stres bozukluğu ve maternal bağlanma üzerinde aracı etkisini incelemektir. Çalışmanın örneklemini 1 ila 6 aylık bebeği olan 98 annedir. Örneklem 53 erken doğum yapan anne, 45 miadında doğum yapan anneden oluşmaktadır. Çalışmanın amacı olayların merkeziyetinin , travma sonrası stres bozukluğu ve maternal bağlanma üzerinde aracı etkisini incelemek ve erken doğum yapan ve miadında doğum yapan anneler arasında demografik bilgileri karşılaştırmaktır. Çalışmanın sonucunda , olayların merkeziyetinin , travma sonrası stres bozukluğu ve maternal bağlanma üzerinde aracı etkisi bulunamamıştır. Ancak, erken ve miadında doğum yapan annelerin bebeklerine maternal bağlanmaları arasında fark bulunmuştur. Ayrıca, doğum tipi bağımsız değişkeni çalışmaya katılmıştır ve olayların merkeziyeti ve acil sezaryan doğum tipinin travma sonrası stres bozukluğu üzerinde ortak etkisi bulunmuştur.

Anahtar kelimeler: Erken doğum, travma sonrası stres bozukluğu, maternal bağlanma

Dedicated to all strong mothers of premature babies who are fighting everyday for
their children



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CHAPTER 1

INTRODUCTION

1.1. Overview of the research

Birth of a baby is generally perceived as an exciting occasion. It has an important role in a mother's life and could be considered as a turning point since it is the beginning of the transition to the motherhood. It is essential for mothers to go through a healthy pregnancy, delivery in which any problem do not occur and a pleasant postpartum process. The birth and a new member joining the family is a cheerful moment for the mother and also for the other members in the family. Yet, birth is a complex concept, it could also evoke feelings of fear or worry to the family (Lasuik, Comeau & Newburn-Cook, 2013) and especially to mother.

Mothers could be more concerned about their baby since they feel responsible towards their babies because they are the ones who bring baby to the world (Lasuik et al., 2013). Moreover, there is an apprehension of motherhood in the society which is generally has been shaped around the concept of "good mothering". Therefore there is a general expectancy from the mother about being a good mother from the society, which makes mothers feel like they are the ones who are in charge of the care and wellbeing of the baby (Widding & Farooqi, 2016; Rovin; 2017).

With the acknowledgement of the importance of a baby's coming to the world and the complexity of the birth process, one should investigate and address to dynamics of childbirth and mothers experiences.

According to previous studies, the relationship between mother and child is very important for the development and well being of the child (Köse, Çınar, & Altinkaynak, 2013; Hall et al., 2014). Maternal attachment or bonding takes place in an early phase, which is essential for the establishment of mother and baby's relationship, and so it should be investigated. The term 'bonding' is generally accepted as relating to the parent's emotional tie or feeling of connectedness towards their infant (Bowlby, 1982, as cited in Mellow, 2014). Mothers' bonding to their babies begins during mother's pregnancy and continues through the birth and the postpartum phases (Hall et al., 2015; Köse et al., 2013).

There have been several studies exploring the bond between mother and infant (Brody, 1981; Feldman, Weller, Leckman, Kuint, & Eidelman, 1999; Mellow, 2014). Furthermore, particularly mother to infant bonding in premature babies were also discussed (Borghini et al., 2006; Hall, et al., 2014; Forcada-Guex et al., 2011). Premature babies are determined as babies that are born alive before the 37th week of pregnancy. Three sub-groups are listed according to gestation of the baby. Extremely premature babies are the ones born before 28 weeks have ended in pregnancy, very premature babies are considered as born between 28 and 32 weeks of gestation and babies born after 32 to 37 weeks of gestation are called moderate to late premature babies (WHO, 2015).

In the literature it was shown that although childbirth is usually seen as a positive event, it could also be perceived as a traumatic event occasionally (Ayers, Wright, & Ford, 2015). Nevertheless, it appeared that mothers experienced Post-traumatic Stress Disorder (PTSD) after giving birth to their babies and mothers who have given birth to premature babies were found to be at greater risk for developing PTSD after their delivery (Grekin & O'Hara, 2014). PTSD is a common mental health disorder in which the individual who had experienced a traumatic event and had been showing some serious symptoms that disrupt the functionality in life (APA, 2013).

Centrality of event is another concept which should be considered as important while drawing attention to maternal attachment to understand how central the mother perceives their birth experience in their life and how it influences their bonding with their newborn infants. "Centrality of event" concept which was presented by Berntsen and Rubin (2006), which suggests the degree to which a traumatic event or an experience has become central to the persons identification of their self, the traumatic incident is a milestone in their life, and how the event gets in the way of persons understanding of upcoming life events (Berntsen & Rubin, 2006). Studies found out that centrality of event and PTSD is positively correlated (Berntsen & Rubin, 2007; Wright, 2015).

Therefore, PTSD and centrality of event are essential and interrelated for understanding the birth of a child and these concepts are vital to investigate the bonding process of mother and children. Therefore the purpose of this study is to examine PTSD, centrality event and bonding all together. For this purpose, the introduction of the term PTSD, centrality of event and bonding will be introduced along with the literature review in the following section.

1.2. Maternal Well-being and Posttraumatic Disorder after birth

1.2.1. Importance of maternal mental well being after birth

The postpartum period, which implies to the period after the delivery of the baby is a critical period and should be addressed both for the well being of the mother and also the baby (Ayers, Eagle, & Waring, 2006; Mckenzie-Mcharg et al., 2015; Grekin & O'Hara, 2014). Literature has given a large importance on mothers' well being in postnatal period. Foremost among the most common mental disorders experienced by mothers after the childbirth were shown as postnatal depression , and postnatal anxiety. In the literature, the prevalence of postnatal depression in mothers were referred as between 6.5% to 12.9% during pregnancy and within 12 months after the baby is born (Gavin et al., 2005) and the rate of postnatal anxiety was between 15- 20 % (Reck et al., 2008; Kang, et al., 2016). Moreover, studies have revealed that mothers suffering from both depression and anxiety after the birth of their child effected poorly social, physical, emotional and cognitive development of the infant and also relationship between the mother and baby was negatively effected (Comaskey, et al., 2017; Neri, Agostini, Salvatori, Biasini, & Monti, 2015). While investigating the postpartum period researchers haven't given enough attention to mothers' traumatic experiences after birth. However lately, mothers' traumatic experiences after birth and the consequences of these traumatic experiences has taken researchers' interest and many studies have been conducting since (Muller-Nix et al., 2004; Ayers et al., 2006). Therefore the next section will refer to mothers' posttraumatic stress disorder experiences following childbirth in detail.

1.2.2. Definition of PTSD according to DSM- 5

Diagnostic and Statistical Manual for Mental Disorders (DSM-5), suggests that a person could be diagnosed with PTSD if they fulfill the following criteria's. Firstly, “one has to be exposed to actual or threatened death, serious injury, or sexual violence in such ways (1) directly experiencing the traumatic event, (2) witnessing, in person, the event as it occurred to others, (3) learning that the traumatic event occurred to a close family member or close friend. In cases of actual or threatened death of a family member or friend, the event must have been violent or accidental, (4) experiencing repeated or extreme exposure to aversive details of the traumatic event” (As cited in APA, 2013, p. 271).

Moreover, “after the occurrence of the traumatic event 1 or more of the following symptoms related to the event should be present: (1) Recurrent, involuntary, and intrusive distressing memories of the traumatic event, (2) recurrent distressing dreams in which the content and/or affect of the dream are related to the traumatic event, (3) dissociative reactions (e.g., flashbacks) in which the individual feels or acts as if the traumatic event were recurring, (4) intense or prolonged psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event, (5) marked physiological reactions to internal or external cues that symbolize or resemble an aspect of the traumatic event” (As cited in APA, 2013, p. 271).

In addition, “1 or both of the following symptoms related to persistent avoidance related to the traumatic event should be present: (1) Avoidance of or efforts to avoid distressing memories, thoughts, or feelings about or closely associated with the traumatic event, (2) avoidance of or efforts to avoid external reminders (people, places, conversations, activities, objects, situations) that arouse

distressing memories, thoughts, or feelings about or closely associated with the traumatic event’’ (As cited in APA, 2013, p. 271).

Also, in order to be diagnosed with PTSD, ‘‘negative alterations in cognitions and mood associated with the traumatic event, beginning or worsening after the traumatic event occurred, 2 or more of the following symptoms should be present: (1) Inability to remember an important aspect of the traumatic event, (2) persistent and exaggerated negative beliefs or expectations about oneself, others, or the world, (3) persistent, distorted cognitions about the cause or consequences of the traumatic event that lead the individual to blame himself/herself or others, (4) persistent negative emotional state, (5) markedly diminished interest or participation in significant activities, (6) feelings of detachment or estrangement from others, (7) persistent inability to experience positive emotions’’ (As cited in APA, 2013, p. 271-172).

Furthermore, ‘‘2 or more of the behaviors concerning marked alterations in arousal and reactivity associated with the traumatic event such as: (1) Irritable behavior and angry outbursts typically expressed as verbal or physical aggression toward people or objects, (2) reckless or self-destructive behavior, (3) hypervigilance, (4) exaggerated startle response, (5) problems with concentration, (6) sleep disturbance’’ (As cited in APA, 2013, p. 271).

Lastly, DSM-5 suggests these disturbance lead to impairment in social, occupational, or other important areas of functioning and the disturbances should be present more than a month. Furthermore, the disturbance should not be because of any physiological effects of a particular substance such as medication or alcohol (APA, 2013).

1.2.3. Recognition & Concerns of Posttraumatic Stress Disorder following Childbirth

Over the last years, there has been increase in studies concerning the traumatic experience of woman after childbirth. The research has emphasized the broad effects of these experiences on women, the newborn and their families (Mckenzie-Mcharg et al., 2015; Ayers et al., 2006). Therefore, in 2006, clinicians and researchers have joined to investigate the boarder aspects of PTSD right after childbirth concerning the rate, assessment and intervention issues of PTSD after childbirth and argued whether PTSD following childbirth (PTSD FC) should be a diagnostic criteria differing from PTSD. After that, the concept of PTSD after childbirth has been recognized by many researchers and over the last years studies about the understanding of PTSD after childbirth has escalated including PTSD FC in fathers or high risk groups such as preterm babies or still birth. It is generally agreed that the symptoms of PTSD FC are the same as those symptoms' of PTSD as defined in DSM-5.

Furthermore, it is important to keep in mind that once childbirth is perceived as a trauma, it's distinctive than any other traumatic incidents because childbirth is accepted as a positive event, that it consists of two people (mother and baby). There are limits to understand the essence of pregnancy and birth, and the birth appears in an official health care place such as hospital and that the baby often recalls mother of her trauma (Mckenzie-Mcharg, et al., 2015) Moreover, the rate of mothers who suffer from PTSD right after giving birth were referred as 3.1% (Grekin & O'Hara, 2014).

Although many researches has been realized the topic and tried to expand the knowledge on the issue, there is a still room to investigate PTSD FC due to the fact

that there are still some ambiguity about PTSD FC and lack of information understanding the PTSD FC. One problem about diagnostic issue about PTSD FC is that every woman who had labor does not perceive childbirth as a traumatic occasion. It is true that birth experience is perceived as traumatic by most of the women but mothers claim that they perceive birth traumatic due to their subjective encounters (Ayers, 2004), such as; feeling so much pain during the birth of the baby or if they were on their own for a long time feeling that they were not supported enough (Ballard, Stanley & Brockington, 1995). Not being able to label the birth as a traumatic event according to objective encounters gets in the way of diagnostic issues about PTSD FC.

Although there have been issues about identification and diagnosis of PTSD FC, it has been suggested that the recognition of mothers going through post traumatic stress responses after the birth of their baby and providing mothers treatment is essential (Mckenzie-Mcharg et al., 2015). It is important to recognize PTSD after the birth of the child because PTSD FC has impact on mothers, infants' well-being and mothers' relationship with her family (Mckenzie-Mcharg et al., 2015; Ayers et al., 2006).

Ayers et al. (2006) suggested that mothers felt like their emotions, cognitions and behaviors were negatively altered following childbirth. They tend to feel guilty about the events that occurred during the birth, they become afraid of being pregnant again and giving birth to children in long term. Mothers stated that their maternal attachment to their infant in the early phases of the relationship and also their relationship with their infant was affected, also their relationship with their spouses were affected along with experiencing difficulties getting sexually intimate with their husbands. When it comes to the effects of PTSD FC on the infant, although there is

very few studies concerning child's development after mother's posttraumatic stress experiences following childbirth, studies have found out that children had problems concerning sleeping and eating patterns (Pierrehumbert, Nicole, Muller-Nix, Forcada-Guex, & Anserment, 2003; Shaw et al., 2009). Furthermore, it was found that infants' intellectual development was impacted negatively after mothers' traumatic experiences following childbirth (Parfitt, Pike, & Ayers, 2013).

1.2.4. Vulnerability Factors leading mothers to Post Traumatic Stress

Disorder after childbirth

According to the literature there are several vulnerability factors which lead woman to experience PTSD after childbirth. They are categorized as pre-existing risk factors, which are the factors determined before the birth of the baby and other category is defined as risk factors associated with birth. Among the pile of the risk factors leading PTSD after the birth of the child the most important of are pre-existing factors are mothers going through depression while being pregnant, being afraid of bearing the child, having some health problems during pregnancy, being previously diagnosed with PTSD (Ayers, Bond, Bertullies, & Wijma, 2016) or having previous history of sexual trauma (Grekin & O'hara, 2014). Furthermore, the most important risk factors associating with birth include woman's subjective birth encounters such as feeling stressed, feeling adverse emotions related to birth or not being in charge of the situation during birth. Moreover, not getting enough support and information concerning the birth process from the nurses and the doctors in the hospital was other element related to PTSD after the birth of a child (Ayers, et al., 2016).

1.2.4.1. Planned and Emergency Caesarean Delivery as a Risk Factor leading to PTSD

Going through caesarian delivery was one of the potential risk elements, which yield to experiencing posttraumatic stress symptoms in mothers after birth (Ayers et al., 2016; Gondwe & Holditch-Davis, 2015; Noyman-Veksler, Herishanu-Gilutz, Kofman, Holchberg, & Shahar, 2014). Caesarean delivery can be performed in two ways. A scheduled, or planned, cesarean delivery is decided before the delivery process begins by mother's choice or doctors anticipation for possible complications concerning mother or baby's health (Zanardo, et al., 2016; Paterson-Brown, 1998). Emergency caesarian type of delivery, on the other hand, is unplanned forehead and decided once the birth starts. The reason that emergency cesarean is preferred is because the mother or the baby is under an urgent risk (O' Leary et al., 2007), and when doctors are not able to continue the delivery process because mother cannot deliver the baby due to some complications about the mother or the fetus (Zanardo et al., 2016). Furthermore, normal vaginal delivery is a vaginal delivery, which doesn't lead to any immediate or dangerous problems concerning baby's birth (Ryding, Wijma, & Wijma, 1998b). Also, according to the studies besides caesarian delivery unexpected and life threatening vaginal delivery, which included surgery, were also risk factors for mothers experiencing post-traumatic stress symptoms after the birth of their baby (Ayers et al., 2016).

Literature has suggested that cesarean delivery including both planned and emergency cesarean delivery as a potential risk for PTSD (Ayers et al., 2016; Brandon et al., 2011). However, many studies have found that mothers who had gone through emergency cesarean delivery claimed more post traumatic stress symptoms than those who have gone through planned cesarean delivery or normal vaginal

delivery (Söderquist, Wijma, Thorbert, & Wijma, 2009; Ryding et al., 1998b, Andersen, Melvaer, Videbech, Lamont, & Joergensen, 2012). Therefore, emergency cesarean delivery is considered one of the most essential factors that yield to PTSD (Andersen et al., 2012).

The reason why Cesarean delivery (both planned and unexpected) has been found traumatic might be because Murphy et al. (2001) and Raphael-Leff (1991) suggested that mothers reported that they felt more pain after having cesarean delivery, and it took more time and more effort for them to heal for those who have gone through cesarean delivery comparing to those who had vaginal delivery. Moreover, Brandon et al. (2011) discussed that being cut during the surgery made them feel worried about the procedure.

Furthermore, emergency cesarean delivery could be reported as traumatic because, during the emergency cesarean section woman reported being afraid that the baby will be harmed or that the baby's or their life was threatened (Ryding et al., 1998b; Tham, Christensson, & Ryding, 2007). Other possible explanations why cesarean delivery has been found traumatic might be, as mentioned in previous chapter, women's personal experiences about delivery including not being in charge of the situation has found to be highest risk element for developing PTSD (Ayers et al., 2016; Andersen et al., 2012). As expected, according to Ryding. et al. (1998a), emergency cesarean birth is a place where women's perceptions about not being in charge of the situation is fulfilled; since women are surprised with the unexpected problems about the birth process and delivery process is in doctors' and midwives' charge

1.2.5. Premature Birth in the Form of Traumatic Experience

Premature babies are determined as babies that are born alive before the 37th week of pregnancy. Three sub-groups are listed according to gestation of the baby. Extremely premature babies are the ones born before 28 weeks have ended in pregnancy, very premature babies are considered as born between 28 and 32 weeks of gestation and babies born after 32 to 37 weeks of gestation are called moderate to late premature babies (WHO, 2015).

Premature delivery of a child is usually seen as a traumatic experience and a source of stress for the mother (Shah, Clements, & Poehlmann, 2011). Having a preterm baby is stressful and traumatic because (1) premature babies have a great risk of survival (Mckenzie-Mcharg, et al., 2015), (2) they usually have critic health conditions (Widding & Farooqi, 2016), (3) they have frail looks (Miles, Funk, & Kasper, 1991) and (4) their birth weight is lesser than full-term babies (Holditch-Davis, Robin Barlett, Blickman, & Miles, 2003). Moreover babies' severity of prematurity including having health and medical issues, their gestational age were also leading distress factors for the parents (Suttora, Spinelli, & Monzani, 2013; DeMier et al., 2000; DeMier, Hynan, Harris & Manniello, 1996). Furthermore, it was shown that premature newborns being put in NICU was considered as stressful and traumatic experiences by the mother (Öztürk & Saruhan, 2013; Mckenzie-Mcharg et al., 2015) due to the fact that babies were separated from their parents, and that they cannot reach out to their baby and support their babies lead them experiencing distress (Miles et al., 1991).

Preterm babies mothers' were at higher risk at posttraumatic stress disorder than full-term mothers (Ghorbani, Dolatian, Shams, & Alavi-Majd, 2014; Grekin & O'Hara, 2014). Moreover, Grekin O'Hara (2014) suggested that 3.1% of mothers

who suffer from PTSD right after giving birth and the percentage of the mothers who are in a more vulnerable category including mothers who have given birth to premature babies are; 15.7%.

There are several studies, supporting that mothers of premature infants showed more post-traumatic stress responses than mothers of full-term infants (Suttora, Spinelli, & Monzani, 2013). Study conducted by Holditch-Davis et al. (2003), showed that mothers of premature children who had developmental difficulties including babies weight at birth below 1,500 g or having some health concerns including respiratory problems were found to be displaying post-traumatic stress responses at 6 months after their babies expected delivery date. In addition to that, Misund and colleagues (2014) measured mothers stress responses two weeks after delivery of premature children and found that among 35 mothers, more than half of them experienced post-traumatic stress responses. Hence Misund et al. (2014) concluded that their research showed that premature delivery of a child might symbolize traumatic experience to the mother. Moreover, in the literature there are several studies found out that mothers show trauma responses in 6 and even after 18 month after the birth of the preterm infant (Forcada-Guex, Borghini, Pierrehumbert, Ansermet, & Muller-Nix, 2011; Muller-Nix, et al., 2004).

1.3. The Concept Of Centrality Of Event

There are some important occasions in a human's life, which could be also labeled as "turning points". These critical events could be positive such as birth of a baby, getting married, graduation and so on or these occasions could be negative such as having an accident or losing someone close and Berntsen Rubin (2006) suggested that the incident, which has been perceived as traumatic, could be placed

in the center of a person's life. Moreover, if these traumatic incidents are viewed as central in their life, then it becomes a part of the person's identification of their self, the traumatic incident is a milestone in their life, and how the event gets in the way of person's understanding of upcoming life events.

Furthermore, centrality of event concept opposes with the general acceptance of traumatic experience not being well remembered to the person, the traumatic memories are actually very much alive and in the center of one's memory. Thus, these memories being highly remembered is the reason of negative understanding of upcoming life events even though these upcoming events may not be traumatic (Berntsen & Rubin, 2007).

Studies have found out that Centrality of event and PTSD symptoms are related: When the traumatic event was centralized in a person's life it led to higher PTSD symptoms as opposed to people who didn't perceive traumatic events in the center of their lives (Berntsen & Rubin, 2006; Berntsen & Rubin, 2007; Blix, Birkeland, Solberg, Hansen, & Heir, 2016). Berntsen and Rubin (2007) suggested that if the traumatic occasion is centralized in a person's life, it leads to emergence and continuation of post-traumatic stress disorder. Similarly, Boals and Ruggero (2015) suggested that centrality of event is a very important and powerful factor in respect to its role to predict post-traumatic stress disorder symptoms. Furthermore, it has been suggested that events could be centralized and cause PTSD after experiencing any kind of traumatic or stress causing occasion. PTSD could occur after experiencing both serious traumatic events whereas one can experience traumatic symptoms after lighter traumatic events (Berntsen & Rubin, 2007).

Centrality of event could lead both to Post-Traumatic Stress Disorder (PTSD) or Post-Traumatic Growth (PTG) (Groleau, Calhoun, Cann, & Tedeschi, 2013;

Schuettler, & Boals, 2011). According to the literature if the person can find a way of handling the centralized occasion and view the traumatic occasion as a positive incident it will lead to a PTG whereas if the person would not be able to deal with the traumatic occasion and the traumatic event would still be seen as an adverse occasion then PTSD (Groleau et al., 2013; Schuettler & Boals, 2011).

A more important fact in the literature came up as the fact that having a premature infant is not enough to lead mothers to experience distress alone (Suttora et al., 2013). Suttora et al. (2013) suggested that mothers showed more distress if they had perceived their premature delivery as a traumatic occasion whereas those who hadn't perceived the occasion traumatic showed less stress responses. Similarly, mothers who regarded giving birth to a premature baby as a traumatic incident had difficulties in terms of mother-baby relationship pattern (Suttora et al., 2013). Moreover, Iles and Pote (2015) suggested that mothers' perceptions about birth could differ and influence their way of understanding their birth process and give meaning to their motherhood. Therefore in our study we would like to investigate whether mothers post traumatic stress responses and bonding with their infant who perceived their birth as traumatic and who centralized the birth differed then those who didn't centralized the event.

1.4. Mother-Infant Bonding

“The term ‘bonding’ is generally accepted as relating to the parent’s emotional tie or feeling of connectedness towards their infant” (Bowlby, 1982, as cited in Mellow, 2014). In the literature, the term “bonding” is also referred as “maternal attachment”, “mother–infant bonding” or “mother to infant attachment”. Moreover, mother to infant bonding is defined as one of a kind, warm and ongoing

relationship through lifetime between mother and the infant (Herbert, Sluckin, & Sluckin, 1982; Brody, 1981) in which mothers demonstrate affectionate behavior including observing, touching, smiling, cuddling and other loving maternal responses towards their infant (Herbert et al., 1982).

According to Robson and Moss (1970), mother to infant attachment means how important mother places the child in her life. Maternal attachment includes having affectionate feelings towards the child, wanting the prosperity of the child, dedicating herself to the child, having a sense of owning the child, keeping him/her from harm and looking after child also having desire to continue the interaction with her infant as much as possible.

Moreover, maternal bonding is vital because mothers' bonding to their infant affects physical, emotional, intellectual and psychological development of a child as the child grows older (Köse, Çınar, & Altınkaynak, 2013) and also for the establishment of the mother- infant relationship (Ayers et al., 2006).

There has been an emphasis on the child's perspective in the previous literature where the child's attachment to the mother was investigated (Dagan & Sagi-Schwartz, 2017; Zdebik, Moss, & Bureau, 2017; Keyser, Ahn, & Unick, 2017). On the other hand, the studies have more and more started to value the mother's point of view when it comes to exploring the relationship between the child and the mother (Forcada-Guex et al., 2011; Widding & Farooqi, 2016; Korja, Latva, & Lehtonen, 2012). Tüzün and Sayar (2006) suggested that it is highly important to notice the mother's perspective and to understand the mother's own experiences since the baby doesn't have the skills to take care of his/her own and he or she is dependent on their caregiver. They further discussed that the role of mothers has

been suggested as highly crucial in terms of the development and care of the child. Therefore, although research investigates the relationship between the mother and child from children's perspective, the present study will investigate the relationship from mother's perspective.

According to the literature mother's bonding to their babies begins during mothers pregnancy and continues through the birth and the postpartum phases (Hall, et al., 2014; Köse, Çınar, & Altınkaynak, 2013). Mother's bonding during pregnancy is also commonly named as "maternal-fetal attachment". Cranley (1981) claims that the maternal-fetal attachment, mothers' attachment to the fetus, is the first step to the motherhood and the very beginning of the interaction between the mother and the baby. It has been suggested that a good maternal-fetal attachment during pregnancy refers to a good mother-infant bond after the delivery of the baby (Mellow, 2014).

1.4.1. Factors Influencing Mother-Infant Bonding

It has been highlighted that the mother-baby connection right after birth is a crucial element for the beginning of a healthy mother-baby relationship (Klaus et al. 1972; Brody, 1981). Minutes right after the birth of the baby are vital for mother and the baby to adjust to the new situation and establish a good mother-baby relationship (Köse, Çınar, & Altınkaynak, 2013). This connection between the mother and the baby mentioned requires having eye contact with the baby, picking up and holding the baby in their arms, breastfeeding the baby that enhances a better mother-baby bond. It is even claimed that the more immediate the contact between the mother and child the better it is for the growth of the child (Brody, 1981). Moreover, studies emphasized the importance of mother and the newborn should be staying together in a hospital or at home once the baby is born (Brody, 1981; Öztürk & Saruhan, 2013).

On the other hand, when the baby and the mother remain apart within the first hours after birth, it impedes with a good maternal attachment (Klaus & Kennel, 1976, as cited in Brody, 1981). The first 60-90 minutes following the birth are considered as most sensitive period and if the mother and the baby are separated during this sensitive period, it would effect mother's behaviors in a negative way and get in the way of healthy development of the baby (Can G, 2010, as cited in Köse et al., 2013).

Moreover, baby's overall health is considered as another important factor. It has been proven that when the baby is considered as ill or if the baby had some birth deficiencies and medical conditions it affected the mother to child attachment (Mellow, 2014; Widding & Farooqi, 2016). Another important factor influencing mother-baby bond is mother's mental wellbeing in postpartum period. Several studies have concluded that maternal depression (Öztürk & Saruhan, 2013), maternal anxiety (Forcada-Guex et al., 2011) and maternal stress (Muller-Nix et al., 2004) have negatively impacted the relationship between baby and mother. Furthermore, pregnancy plan and willing to be pregnant, health condition during pregnancy (Dereli Yılmaz & Kızılkaya Beji, 2010) and having problems during labor are also related with the quality of mother-baby bonding (Öztürk & Saruhan, 2013).

1.4.2. Prematurity and Mother to Infant Bonding

The premature birth is perceived as an immediate intrusion to the natural shift to becoming a mother (Stern & Bruschweiler-Stern, 1998, as cited in Suttora, Spinelli, & Monzani, 2013). Usually once an infant who is in a good condition without having any health issues is born the mother has to reconcile the ideal image of the baby she had in mind with the actual infant that she gave birth to. Yet, the

familiarization process to the newborn is even harder for mothers who gave birth to preterm babies since having a premature infant is highly stressful for mothers (Correia & Linhares, 2007). Moreover with early delivery of the baby, their usual anticipations and hope about being a parent had to change (Lasuik, Comeau & Newburn-Cook, 2013).

Furthermore, after the birth of the baby, mothers blamed their selves for the early delivery of the child (Lasuik et al., 2013), they felt helpless knowing that there isn't much thing they can do for their baby as a parent (Miles et al., 1991), they worried about general conditions of their baby and became afraid whether their newborn would die (Lasuik et al., 2013). Mother of premature babies reported they doubted their skills in terms of taking care of their premature infants; they were not able to look after their newborns like a mother should (Lasuik et al., 2013), and that both mother and father felt like they differed from typical parents and that mothers were struggling giving right amount of care and being a decent mother to their newborn infants (Widding & Farooqi, 2016). Mother's ambivalent feelings about their babies general health conditions and not feeling as capable parents may effect mothers bonding to their baby and also the relationship between the baby and the mother.

Moreover, literature showed that prematurity negatively affects the mother-baby relationship (Forcada-Guex et al., 2011; Neri et al., 2015; Muller-Nix, et al., 2004) and that mothers of premature babies showed less warmth feelings towards their infants compared to the mothers of full-term babies (Forcada-Guex et al., 2011; Muller-Nix, et al., 2004; Minde et al., 1985). It is understandable since, bonding and the communication between the mother and the baby are linked to each other; mothers behave accordingly to their child's behavior and the level they feel attached

to their babies (Brockington et al., 2001). Premature babies tend to react and tend to look at their mother less than the full-term babies when they are together with their mothers (Korja, Latva, & Lehtonen, 2012). Therefore premature babies style of interaction is less understandable and noticeable for mothers and babies being perceived as unresponsive is among the reason of the hampered bonding process (Özkars, 2017). Consequently, just like prematurity interferes with ideal mother-infant relationship, as expected, prematurity also leads to negative parent-baby bond (Affleck & Tennen, 1991; Köse et al., 2013; Forcada-Guex et al., 2011).

According to Mellow (2014) prematurity is also considered as a factor which influence the mother to baby attachment since young gestational age, medical condition and birth weight of the newborn baby are considered as risk factors in case of prematurity (Gondwe & Holditch-Davis, 2015; Ayers et al., 2016). These risk factors and severity of the infant are known to be affecting the relationship between the baby and mother (Neri et al., 2015; Borghini, et al., 2006; Minde, Perrotta, & Marton, 1985). Minde et al. (1985) suggested that premature babies' medical issues were considered very important element in terms of mother-infant relationship. Furthermore, Zarling et al. (1988) suggested that premature infants who have very low weight at birth lead to less responsive maternal behavior. While investigating the risk factors seen after birth in premature babies, Borghini et al. (2006) has claimed that gestational age, birth weight and other factors associated with infants' health condition have been negatively effecting the mothers bonding to their child.

According to Widding and Farooqi (2016), young gestational age, serious complications related with prematurity make it harder for premature mothers to attach to their infants. In fact they argued it becomes even harder for extremely premature children's mothers whose babies are considered at higher risk. It was

suggested that these mothers might have adverse, conflicting emotions against their babies and have difficulty adjusting to be a mother and interact with their infants (Widding & Farooqi, 2016).

Moreover, usually premature babies are separated from their mothers and placed in NICU (Öztürk & Saruhan, 2013; Korja et al., 2012). Thereby babies held in NICU gets in the way of natural birth process where baby meeting and having physical contact with the mother. Babies time spent in NICU are often considered as stressful and traumatic experiences for the mother (Öztürk & Saruhan, 2013; Mckenzie-Mcharg, et al., 2015). Besides being stressful, babies' early separation from mother and hospitalization affects the interplay between mother and baby (Mellow, 2014) and it may hamper the healthy mother-baby bonding process (Korja et al., 2012).

Moreover, studies have found better maternal-infant bonding in full-term mothers babies than preterm mothers babies (Forcada-Guex et al., 2011; Köse et al., 2013; Feldman, Weller, Leckman, Kuint, & Eidelman, 1999). Borghini et al. (2006) has investigated attachment of preterm babies mothers and full- term babies mothers when babies were both 6th month and 18th month of age and found out that premature babies mothers had higher maternal attachment scores than full-term babies mothers. Moreover, Forcada Guex et al. (2011) has suggested that full-term premature babies mothers had better bonding than premature babies mothers at 6 months of babies corrected age. Feldman et al. (1999) have also found better bonding behaviors in premature infants babies comparing to the full- term mothers babies.

However, some studies have found out that better maternal bonding in mother of premature infants comparing to mothers of full-term infants (Hall, et al., 2014). Mother of preterm and full-term infant's maternal attachment to their newborn babies

were assessed both in first and sixth month after their delivery and mothers of premature babies stated higher maternal bonding than the full-term mothers' babies (Hall et al., 2014). In another study conducted by Crawford (1982); 33 mothers of full-term and preterm mothers, mothers of premature babies reported being together with their babies more than full-term mothers and they gave more attention and demonstrated attitudes including warmth feelings towards their babies than full-term mothers. Premature babies mothers reporting higher maternal attachment could be due to fact that premature infants are usually perceived as sick infants in their mothers' eyes (Camhi, 2005; Mellow, 2014), mainly because of their vulnerable situation concerning their birth weight, severe health issues, young gestational age. Therefore instead of avoiding and decreasing their communication with their infant they tend to increase their contact with their infant in order to give extra care to fulfill the needs of their sick infants (Beckwith & Cohen, 1978).

Particularly as preterm mothers' anxiety level and the PTSD symptoms escalated, it was found out to be impeding with healthy mother-child relationship (Neri et al., 2015; Forcada-Guex et al., 2011). Especially, similar to the aim in the present study, when premature babies' mothers suffer from postnatal mental health issues like depression, anxiety, PTSD a poorer mother to infant attachment was found in the literature (Öztürk & Saruhan, 2013; Forcada Guex et.al, 2011; Widding & Farooqi, 2016).

1.5. Aim of the study

Traumatic birth and prematurity has been receiving a great interest in psychological research area in the last years (Mckenzie-Mcharg, et al., 2015; Ayers et al., 2016; Forcada-Guex et al., 2011). The relationship between PTSD and bonding

had been investigated to increase the knowledge on the birth experience (Forcada-Guex et al., 2011; Muller-Nix, et al., 2004). Moreover, there are several researches that had shown a strong association between centrality of event and PTSD (Berntsen & Rubin, 2007; Wright, 2015). To the knowledge, there were no studies that investigate centrality of event concept and bonding together. Nevertheless mothers perceptions about birth was a concept that had been investigated and it was referred as having a crucial role to understand the nature of mothers' relationship (Suttora et al., 2013) and so, bonding to their babies. It was also shown in the literature that the concept of centrality of event investigates how people view events and places that particular event in their lives (Berntsen & Rubin, 2006). Therefore, in the present study the concept of event centrality, posttraumatic stress symptoms and maternal bonding will be investigated all together and it is aimed to find a significant correlation between these variables. Furthermore, we expect to find a significant mediating effect of centrality of event on the relationship between PTSD and the bonding.

The literature further investigated the relationship between PTSD and bonding in the light of the comparison of premature babies' mothers and full-term babies' mothers to have a better understanding on the birth experience (Forcada-Guex et al. 2011; Muller-Nix, et al., 2004; Hall, et al., 2014). Consistent with the literature, our study also aims to investigate the relationship between PTSD and bonding in regard to the comparison of premature and full-term babies' mothers. Our study aims to examine the comparison between the severity of PTSD, centrality of event and bonding to the baby of premature and full-term babies' mothers. It is expected to understand the difference between premature and full-term babies' mothers' experiences. In light with the previous literature, our hypothesis will be:

H1: There is a significant correlation between post-traumatic stress symptoms, event centrality and bonding of preterm and full-term babies' mothers.

H2: Preterm and full-term babies' mothers' centrality of event will mediate the relationship between post-traumatic stress symptoms and bonding.

H3: Post-traumatic stress symptoms of premature babies' mothers will be higher than post-traumatic stress symptoms of full-term babies' mothers.

H4: Event centralization of premature babies' mothers will be higher than event centralization of term babies' mothers.

H5: Premature babies' mothers' bonding will be poorer comparing to term babies' mothers.

1.5. Importance of the study

The purpose of the present study is to explore the relationship between premature and term babies' mothers bonding, post-traumatic stress symptoms and centrality of event. It was shown that mothers' mental wellbeing after birth is highly important for babies later physical, social and psychological development and for both mothers' and babies' wellbeing (WHO, 2013; Comaskey, et al., 2017; Koen et al., 2017). There has been little research about maternal bonding and mothers' traumatic experience in the research area. In Turkey there are even less studies about the relevant topic. Therefore the importance of this study will be firstly, to contribute further information to the psychology research area by investigating the comparison of demographical information, posttraumatic stress symptoms, event centrality and maternal bonding between preterm and full term babies mothers.

Moreover to the knowledge centrality of event concept has been never investigated about mothers' birth experiences. Therefore, mothers' event

centralization of birth will be studied for the first time and the relationship between centrality of event, posttraumatic stress symptoms and maternal bonding will be investigated all together.

Furthermore, with the help of this study, clinicians in psychology field can better understand the traumatic experiences and its relation to maternal bonding and perhaps outline a guide in order to prevent mothers going through difficult experience in postpartum period and enhance mothers psychological well being.



CHAPTER 2

METHOD

2.1. Participants

The sample of the study consisted of premature and full-term babies' mothers. The participants of the study included a total of 98 mothers who have 1 to 6 month old babies and whose current marital status is married. Participants were grouped into two according to gestational age of the baby: Babies who were delivered before 37 weeks of pregnancy defined as preterm babies, whereas babies who were delivered after 37 weeks of pregnancy defined as full-term babies (WHO, 2015). There were two participant groups as mothers who have premature babies ($n = 53$) and mothers who have full-term babies ($n = 45$). The participants of the study reported living in various cities in Turkey. Except three respondents reported living in USA, Austria and France. Demographic characteristics of the sample are represented in the Table 2.1.

Table 2.1.

Demographic Characteristics of the Sample

Variable	Preterm Mothers (N=53)	Full-Term Mothers (N=45)	Total (N=98)
Age			
Mean	29.98	31.73	30.24
SD	4.65	3.84	4.49
Range	18-42	21-39	18-42
Education Level			
Primary School	1 (1.9%)	0	1(1%)
Secondary School	4 (7.5%)	1 (2.2%)	5 (5.1%)
High School	16 (30.2%)	3 (6.7%)	19 (19.4%)
University	28 (52.8%)	28 (62.2%)	56 (57.1%)
Master's Degree	4 (7.5%)	13 (28.9%)	17 (17.3%)
Monthly Family Income			
1001-2000 TL	14 (26.4%)	2 (4.4%)	16 (16.3%)
2001-4000 TL	19 (35.8%)	13 (28.9%)	32 (32.7%)
4001-7000 TL	16 (30.2%)	10 (22.2%)	26 (26.5%)
7001-12000 TL	4 (7.5%)	10 (22.2%)	14 (14.3%)
More than 12000 TL	0	10 (22.2%)	10 (22.2%)
Employment Status			
Employed	20 (37.7%)	28 (62.2%)	48 (49%)
Unemployed	33 (62.3%)	17 (37.8%)	50 (51%)
Number of Children			
1 Child	30 (56.6%)	32 (71.1%)	62 (63.3%)
2 Children	19 (35.8%)	11 (24.4%)	30 (30.6%)
3 Children	4 (7.5%)	2 (4.4%)	6 (6.1%)

Table 2.1. (Cont.)

Demographic Characteristics of the Sample

Variable	Preterm Mothers (N=53)	Full-Term Mothers (N=45)	Total (N=98)
Having Medical Condition During Pregnancy	35 (66%)	16 (35.6%)	51 (52%)
Not Having Medical Condition During Pregnancy	18 (34%)	29 (64.4%)	47 (48%)
Pregnancy Plan			
Planned and Wanted	41 (77.4%)	34 (75.6%)	75 (76.5%)
Unplanned and Wanted	10 (18.9%)	10 (22.2%)	20 (20.4%)
Unplanned and Unwanted	2 (3.8%)	1 (2.2%)	3 (3.1%)
Type of Delivery			
Unexpected Cesarean Delivery	36 (67.9%)	12 (26.7%)	48 (49%)
Expected Cesarean Delivery	10 (18.9%)	21 (46.7%)	31 (31.6%)
Normal Delivery	7 (13.3%)	12 (26.7%)	19 (19.4%)
Day Spent in Neonatal Intensive Care Unit			
Mean	36.08	3.4	33.26
SD	31.95	2.79	31.89
Range	0-135	0-8	0-135
Medical Condition of the Baby After Birth			
Having Medical Condition after Birth	15 (28.3%)	2 (4.4%)	17 (17.3%)
Not Having Medical Condition After Birth	38 (71.7%)	43 (95.6%)	81 (82.7%)

The gestational age of the babies of both preterm and full-term mothers was asked in the present study. The detailed information regarding gestational age of preterm and full-term babies was presented below in the Table 2.2.

Table 2.2

Gestational Age of Preterm and Term Babies

Gestational Age	N	%
Extremely Preterm Babies (less than 28 weeks)	11	20.8
Very Premature Babies (28 to 32 weeks)	17	32.1
Moderate to Late Premature Babies (32 to 37 weeks)	25	47.2
Full-Term Babies	45	100

2.2. Instruments

Participants filled out a sociodemographic form and three scales: PTSD Checklist for Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (PCL-5), Centrality of Event Scale (CES) and Maternal Attachment Inventory (MAI), respectively.

2.2.1. Socio-Demographic Form

The researcher prepared the socio-demographic form. The form included questions focused on gathering general demographic information such as age, education, and marital status and also questions more related to the pregnancy processes itself such as type of delivery, medical situations during pregnancy and after birth.

2.2.2. PTSD Checklist for Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (PCL-5)

The PTSD Checklist for DSM-5 was developed by Weathers, Litz, Keane, Palmieri, Marx, and Schnurr (2013) to assess the PTSD symptoms according to DSM-5 criteria. PCL-5 was adapted from the original PCL form (McDonald & Calhoun, 2010; Wilkins, Lang, & Norman, 2011) and it includes 20 items whereas the original PCL form includes 20 items to assess PTSD symptoms. This self-report questionnaire is formed as a 5-point Likert scale to rate the severity of the symptoms experienced in the past month from 0 (not at all) to 5 (extremely). In the scale, higher scores indicate higher levels of PTSD. A sample item of the scale is “Repeated, disturbing dreams of the stressful experience?”. PCL-5 demonstrated strong internal consistency ($\alpha = .94$), and test-retest reliability with ($r = .82$).

The Turkish adaptation of PCL-5 was developed by Boysan, Ozdemir, Ozdemir, Selvi, Yılmaz, and Kaya (2016). The reliability coefficient in the Turkish adaptation version of the scale was found to be .76. In the present study, the reliability of PCL-5 scale was measured and the Cronbach alpha level was found as .95.

2.2.3. Centrality of Event Scale (CES)

Centrality of Event Scale was developed by Berntsen and Rubin (2006). The scale contains 20 items and aims to measure how much a person places a traumatic event central to their life and their identity. The reliability coefficient of the CES scale was found out to be .94. “The event tells a lot about who I am” is an example item in CES scale. Each item in the scale is rated on a 5-point Likert scale in which

the score of 5 corresponds to “totally agree” and the score of 1 corresponds to “totally disagree”.

The Turkish adaptation of the Centrality of Event Scale was realized by Egeci (under review; Psychometric Properties of Centrality of Event Scale in a Turkish Sample. *Journal of Anatolian Psychiatry*). In the present study, the Cronbach’s alpha level was .95.

2.2.4. Maternal Attachment Inventory (MAI)

MAI is a self-report questionnaire developed by Muller in 1994 to measure maternal attachment. The inventory measures mothers’ emotions and behaviors towards their baby. A sample item for the inventory is “I feel that I love my baby”. There are 26 items in the scale in which each of items are scored from 1 (never) to 4 (always). Higher scores indicate higher maternal attachment to the infant. Plus the reliability coefficient of the scale was found out to be 0.85.

The validity and reliability of Turkish version of MAI was assessed by Kavlak and Sirin (2009). Cronbach Alpha reliability coefficient was found to be 0.77 in first-month postpartum and to be 0.82 in fourth- month postpartum. Moreover, in the current study, reliability of the scale was measured and Cronbach’s alpha level was .92.

2.3. Procedure

Data collection began after the approval from Ethics Committee Board of Bahcesehir University. The data for premature group was collected via online social media platforms. The link of the survey was shared in several Facebooks and full-

term babies' mothers were reached through both snowball sampling and also from Facebook groups. All of the data was collected through Google Forms.

Participants were given an Informed Consent Form, which shortly described the study. Voluntary participants were asked to complete the study and they were informed that they had the opportunity to discontinue whenever they wanted. Right after the informed consent, participants were asked to fill a socio-demographic form and PCL-5, CES and MAI scales, respectively. The informed consent form and scales presented to both preterm and full-term babies' mothers group were the same, except in the explanation part for the consent form and PCL-5 and CES scales. For the premature babies' mothers it was asked to fill the questions regarding their premature birth process whereas in the full-term babies' mothers group they were asked to fill the questions regarding their birth experiences. Moreover, for the MAI scale, the explanation was same for both groups where mothers were asked to complete the questions regarding the new mothers' experiences.

CHAPTER 3

RESULTS

3.1. Preliminary Analyses

The present study aimed to examine the relationship between posttraumatic stress responses, centrality of event and maternal bonding in full-term and preterm mothers. For this purpose, the first step was to screen the data for missing values. As the second step, both univariate and multivariate outlier analyses were conducted. As the third step, demographic variables were analyzed with maternal bonding, centrality of event and posttraumatic stress responses. Fourth, the Pearson correlation analyses were conducted between maternal bonding, centrality of event and posttraumatic stress responses. Fifth, the mediating role of centrality of event on the relationship between posttraumatic stress responses and maternal bonding was examined in the light of the aim of the present study. Finally, four moderation analyses were conducted since mediation analysis of maternal bonding, centrality of event and posttraumatic stress responses was not found to be significant.

3.1.1. Data Screening

To begin with, data was screened for missing values. There was no missing value since the data was completed online and the survey did not give any chance to respondents to miss any question. Furthermore, first a univariate analysis was

realized for the premature babies' mothers group. Three participants were extracted from the study. Moreover, multivariate outliers were checked in terms of Mahalanobis Distance. Degrees of freedom were taken as 3 and alpha level as .001. The cutoff score was detected as 16.266. There were no scores exceeding the cut-off score. Therefore there was not any multivariate outlier in premature mothers group. Univariate and multivariate analysis was run for the full-term mother group as well, there was not any outlier found for the full- term group. Consequently, the present study performed with 98 participants (53 = preterm mothers, 48 = full term mothers).

3.1.2. Descriptive Statistics for the Instruments

The descriptive statistics for the maternal bonding, centrality of event and posttraumatic stress responses are represented in the Table 3.1.

Table 3.1.

Descriptives for the Main Variables

Measures	N	Mean	SD	Min	Max
Posttraumatic Stress Responses	98	28.42	19.33	0	80
Centrality of Event	98	72.16	20.41	21	100
Maternal Bonding	98	104	4.47	84	104

3.1.3. Demographic Variables Analysis

The present study was generated demographic information on age, education level, monthly family income, employment status and number of children. Then, the demographic information was analyzed in regard to their relationship with maternal bonding, centrality of event and posttraumatic stress responses.

The first examination was on the relationship between age and maternal bonding, centrality of event and posttraumatic stress responses. The results revealed that age was significantly and negatively correlated with maternal bonding ($r = -.34$, $p < .01$), whereas was not significantly correlated with centrality of event and posttraumatic stress responses ($p > .05$). However, a significant imbalanced distribution between the sample sizes of education level and number of children was found in the present study. Therefore, no analyses to examine the differences between education level and number of children on the maternal bonding, centrality of event and posttraumatic stress responses was conducted.

The second investigation was conducted to examine the differences between monthly family income on maternal bonding, centrality of event and posttraumatic stress responses by using t-test. A significant difference between the scores of maternal bonding and monthly family income was found $t(96) = 2.97$ $p < .05$. The average score of bonding was 102 ($SD = 3.12$) for mothers whose monthly family income is less than 4000 mothers and 99.42 ($SD = 5.19$) for mothers whose monthly family income is more than 4000. Therefore mothers whose monthly family income is less than 4000 mothers report higher bonding than mothers whose monthly family income is more than 4000 mothers. However, there was no significant difference of posttraumatic stress responses between mothers whose monthly family income is less than 4000 mothers and mothers whose monthly family income is more than 4000

mothers ($p > .05$) or significant difference of event centrality between mothers whose monthly family income is less than 4000 mothers and mothers whose monthly family income is more than 4000 mothers ($p > .05$).

Finally, employment status differences on maternal bonding, centrality of event and posttraumatic stress responses were examined with the usage of t-test. A significant difference in the scores of centrality of event and employment status was found $t(96) = 2.16, p < .05$. The average score of centrality of event was 76.44 ($SD = 19.57$) for unemployed mothers and 67.70 ($SD = 20.50$) for employed mothers. Therefore, mothers who are not working report higher centrality of event than mothers who are working. Moreover, the difference between scores of maternal bonding and employment status was also found to be significant; $t(96) = 2.45, p < .05$. The average score of maternal bonding was 101.74 ($SD = 3.34$) for unemployed mothers and 99.58 ($SD = 5.20$) for employed mothers. Therefore, maternal bonding scores of unemployed mothers was found to be higher than employed mothers maternal bonding scores. However, there was no significant difference of posttraumatic symptoms between unemployed mothers and employed mothers ($p > .05$).

3.2. Test of the Hypotheses

The hypotheses in the present study were tested with the usage of the Pearson correlation, mediation, moderation and t-test analyses. The following sections will represent the relevant results of the analyses that were used in the present study.

3.2.1. Bivariate Correlations

The relationships between maternal bonding, centrality of event and posttraumatic stress responses were investigated with the use of Pearson correlations. The results showed that among the correlations between maternal bonding and centrality of event was found as significant. ($r = .20$, $p < .05$). The correlations among the variables of the mediation analysis are represented in Table 3.2.

Table 3.2.

Pearson Correlation between Variables

	1	2	3
1. Maternal Bonding	-		
2. Posttraumatic Stress Responses	-.06	-	
3. Centrality of Event	.15	.20*	-

*Correlation is significant at the 0.05 level (2-tailed),

**Correlation is significant at the 0.01 level (2-tailed).

3.2.2. Mediation Analysis

The present study investigated the relationship of premature and full-term mothers' posttraumatic stress symptoms and maternal bonding with the mediating role of centrality of event by using bootstrapped multivariate extension of the MEDiate test of mediation (Preacher & Hayes, 2008). In the study, posttraumatic stress responses were taken as the predictor, centrality of event was taken as the mediator and maternal bonding was taken as the predicted variable.

In the first part of the analysis, there was not a significant total effect of posttraumatic stress responses on maternal bonding ($F(1,96) = .00, p > .05$). In the mediation analysis, there was only a significant direct effect of posttraumatic stress responses on centrality of event ($\beta = .21, SE = .11, t(96) = 2.03, p < .05$), whereas there was no significant direct effect of posttraumatic stress responses on maternal bonding $p > .05$ or significant direct effect of centrality of event on maternal bonding $p > .05$ (see Figure 3.1.).

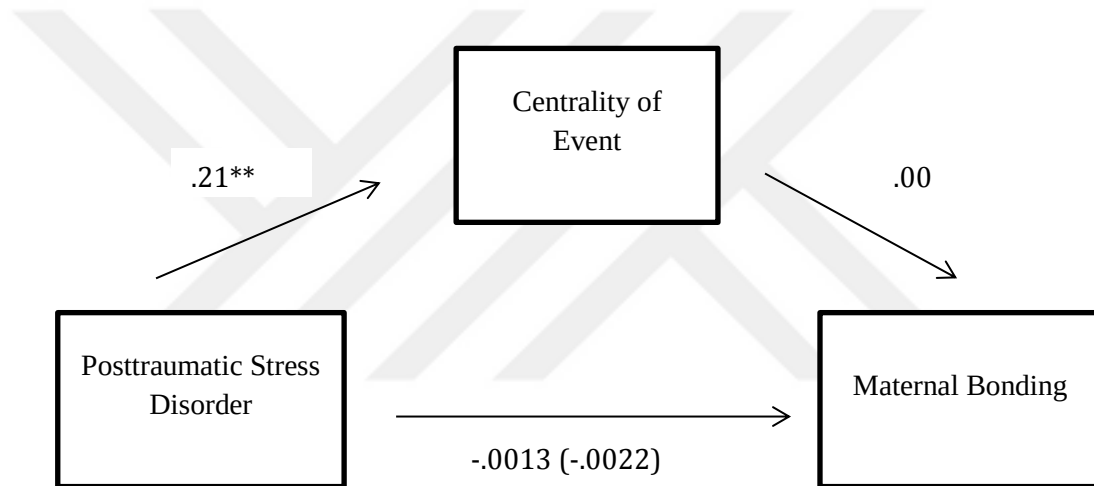


Figure 3.1. The Test of Relationship between PTSD and Maternal Bonding with the Mediating Role of Centrality of Event

Note: $p < .01^{**}$, $p < .001^{***}$

3.2.3. Moderation Analysis

After the realization of the non-significant mediation analysis, it was concerned that in the present study, there might be some other factors predicting centrality of event, posttraumatic stress responses and maternal bonding of preterm and full-term babies mothers'. Therefore, birth type (emergency cesarean delivery, planned cesarean delivery, normal vaginal delivery) and birth week variables were

introduced to our analysis and four separate moderation analyses were conducted in the present study by using the procedure outlined by Aiken and West (1991). The first moderation aimed to investigate whether centrality of event moderate the relationship between birth week and posttraumatic stress responses. The second moderation aimed to investigate whether centrality of event moderates the relationship between birth type and posttraumatic stress responses. The third moderation aimed to examine whether posttraumatic stress responses moderate the relationship between birth week and maternal bonding. Finally, the fourth moderation analysis was conducted to examine whether posttraumatic stress responses moderate the relationship between birth type and maternal bonding. However, the only significant interaction effect was found in the moderation analysis in which moderator effect of centrality of event on the relationship between type of birth and maternal bonding was investigated. Therefore, among the four moderation analyses, one moderation analysis was reported in the part of the present study. The correlations among the variables of the moderation analysis are represented in Table 3.3.

Table 3.3.

Pearson Correlation between Variables

	1	2	3	4	5
1.Posttraumatic Stress Responses	-				
2. Centrality of Event	.20*	-			
3.Maternal Bonding	-.01	.02	-		
4. Emergency Cesarean Delivery	.16*	-.10	.19*	-	
5. Planned Cesarean Delivery	.07	.08	-.07	-.66**	-

*Correlation is significant at the 0.05 level (2-tailed)

**Correlation is significant at the 0.01 level (2-tailed).

3.2.3.2. The Test of Relationship between Type of Birth and Posttraumatic Stress Responses with the Moderating Role of Centrality of Event

Before the analysis, type of birth variable was dummy coded in the analysis. Therefore three groups were reduced to two groups so that comparison could be performed. First, emergency caesarean delivery was separated as reference group whereas planned caesarean delivery and normal birth were clustered together as second group. Moreover, planned caesarean delivery was separated as reference group whereas emergency caesarean delivery and normal birth was clustered as a second group so that comparison between these two groups could be performed.

In this moderation model, type of birth was taken as the predictor variable, centrality of event was taken as the moderator, and finally posttraumatic stress responses was taken as the predicted variable. Whether the relationship between type of birth and posttraumatic stress responses depends on the centrality of event was tested. For this purpose, centrality of event was centered to test interaction model. Then, type of birth and centrality of event were multiplied to create interaction term.

In the first step in which type of birth and centrality of event were taken as the predictors, the model was found to be significant ($F(3,97) = 3.34, p < .05$). In the model, 10% of the variances were explained by the birth type and centrality of event. The results indicated that centrality of event significantly predicted posttraumatic stress responses ($\beta = .22, SE = .05, t = 2.22, p < .05$). It was also found that emergency caesarean significantly predicted posttraumatic stress responses ($\beta = .32, SE = .07, t = 2.40, p < .05$), whereas posttraumatic stress responses were not predicted by planned caesarean ($p > .05$).

In the second step, interaction between type of birth and centrality of event were entered into the model, the model was found to be significant ($F(5,97) = 3.57$, $p < .01$). Moreover, it was found that second step explained 7% of the variances.

Among the interactions, emergency cesarean and centrality of event interaction was found to be a significant predictor of posttraumatic stress responses ($\beta = .42$, $SE = .27$, $t = 1.97$, $p < .05$) suggesting that the effect of emergency cesarean on posttraumatic stress responses depended on the level of centralization of the event. However, it was found that planned cesarean and centrality of event interaction did not significantly predict posttraumatic stress responses ($p > .05$). Simple slopes for the relationship between emergency cesarean and posttraumatic stress responses were tested for low, and high levels of centrality of event. Among the simple slope tests, emergency cesarean was strongly associated with posttraumatic stress responses for the high levels of centrality of event ($B = .42$, $\beta = .44$, $SE = .13$, $t = 3.47$, $p < .01$). Examination of the interaction plot (Figure 3.2.) showed that emergency cesarean with higher levels of the centralization of the event shows higher posttraumatic stress responses, whereas emergency cesarean without a centralization of event shows lower posttraumatic stress responses.

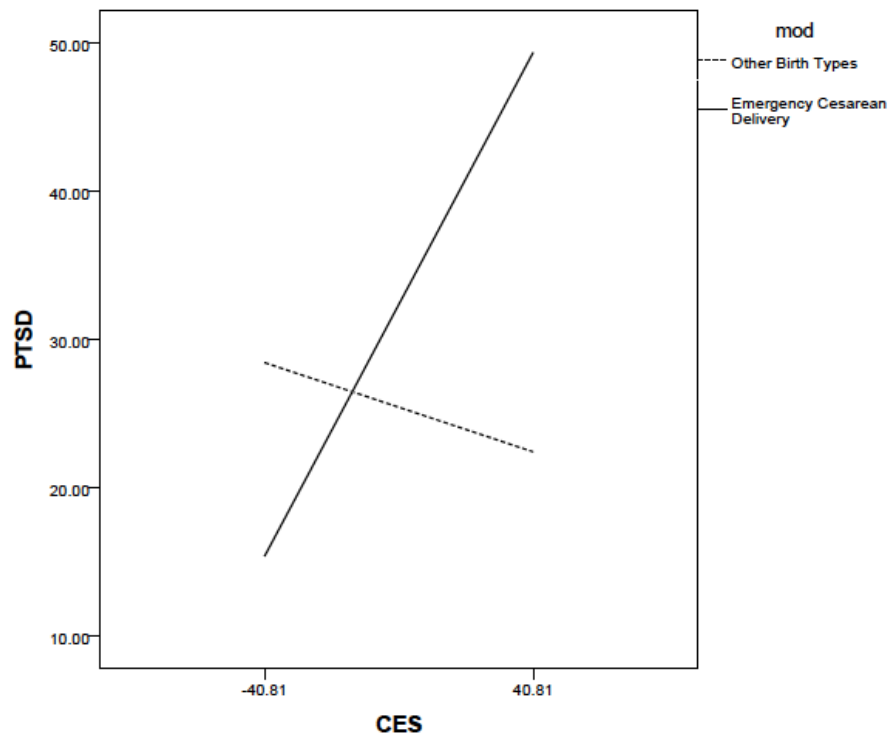


Figure 3.2. Interaction of Emergency Cesarean Delivery and Centrality of Event on Posttraumatic Stress Responses

3.3. The Test of Posttraumatic Stress Disorders and Maternal Bonding among Mothers who have Higher Event Centrality and who have gone through Emergency Cesarean Delivery

Moreover, once emergency cesarean and centrality of event interaction was found to be a significant predictor of posttraumatic stress responses, whether posttraumatic stress disorder symptoms predicted maternal bonding among mothers who had emergency cesarean delivery and high event centrality was also investigated. However no correlations were found between posttraumatic stress responses and maternal bonding among mothers who have had emergency cesarean delivery and had high event centrality. ($r = .14$)

3.4. T- Test Analyses

Three independent-samples t-tests were conducted to investigate the comparison between posttraumatic stress symptoms, centrality of event and bonding of mothers of premature infants and mothers of term infants. A significant difference in the scores of bonding was found $t(96) = 4.21, p < .05$. The average score of bonding was 102.30 ($SD = 3.00$) for premature infants mothers and 98.78 ($SD = 5.16$) for full-term infants' mothers. Therefore, premature infants mothers report higher bonding than full-term infants' mothers. However, there was no significant difference of posttraumatic symptoms between full term infant's mothers and premature infants mothers ($p > .05$) or significant difference of event centrality between full term infants mothers and premature infants mothers ($p > .05$).

CHAPTER 4

DISCUSSION

The purpose of the present study is to investigate the relationship between posttraumatic stress responses, centrality of event and maternal bonding among premature and full-term babies mothers. In addition, differences of posttraumatic stress symptoms, event centrality and maternal bonding between premature and full-term babies' mothers. In the following section, the findings of the current study will be discussed along with the literature review. Furthermore contributions and the clinical implications of the current study will be discussed.

4.1. Interpretation of Demographic Information

The present study, first of all investigated the demographic variables on age, monthly income, and employment status of both preterm and full-term babies' mothers. The findings revealed that there is a significant relationship with age and maternal bonding. According to the literature, several studies haven't found any association between mothers age and mothers bonding to their babies (Mutlu,

Yorbik, Tanju, Çelikel, Sezer, 2015; Bilgin & Alpar, 2017). Other studies have found out that younger mothers had poorer bonding compared to older mothers (Akkoca, 2009; Najman, Morrison, Williams, Andersen, & Keeping, 1991). Akkoca (2009) suggests that younger mothers tend to have feelings of anger and rejection towards their infants since probably because they were not ready to become a mother yet. Similarly, it has been found out that as mothers' age increases, mothers were observed to be showing more positive behavior towards their child. For example they were showing more of affectionate behavior such as holding and smiling more to the infant (Çalışır & Karaçam, 2011). Yet, in the present study, it was found out that there was a negative relationship between mother's age and maternal bonding. Kinsey, Baptiste-Roberts, Zhu, and Kjerulff (2014) had investigated the bonding process in mothers and consistent with our study, they found out that as the maternal age increases the maternal bonding decreases. It was concluded that the reason older mothers had lower scores of maternal bonding was perhaps older and better-educated mothers have responded more truthful to the questions about their feelings and experiences about their babies. Similarly in the present study, being well educated and being older may have helped mothers being more truthful about their answers as well.

Our second investigated demographical variable was monthly family income. According to the literature, several studies haven't found any association between family's economic situation and mother to infant bonding (Forcada-Guex et al., 2011; Moehler, Brunner, Wiebel, Reck, & Resch, 2006). Akkoca (2009) have found that as the worse financial circumstances of the family results with worse mother to infant bonding. Akkoca (2009) have suggested that perhaps in their study, worse financial circumstances might provoke anxiety in mothers and lead to poor maternal

bonding. Similarly, Perry, Ettinger, Mendelson and Le (2011) investigated the relationship between maternal depression, bonding among Latina mothers who are considered in disadvantaged socioeconomic group and found out that their financial burdens might be among the reasons why they are poorly bonded with their infants. However, in our study we found out that as monthly family income increases, maternal bonding gets poorer. Kinsey et al. (2014) has also found that wealthy mothers had poor bonding with their child compared to mothers who have problems financially. A possible explanation to our finding might be that mothers who have no financial burden might have hired babysitters and perhaps they don't spend much time with their babies and they might not be their babies primary caregiver which leads to poor maternal bonding.

There isn't much of research about maternal bonding and their employment status. However, Schachere (1990) investigated the mother-infant relationship among full time working mothers and found out that full time work got in the way of mother-infant relationship and argued that perhaps because mothers could spend time with their babies the little time, which remains from their work hours. However they have noted that hours spent with the baby cannot be the only reason hampering the mother baby relationship but content of time spent together should be also investigated. Huston and Aronson (2005) have found out that working mothers spend more time and effort to compensate that they are not around during the day and they found out that mothers were more sensitive towards their children. Our findings are consistent with Schachere (1990)'s research where maternal bonding is higher among non-working mothers. It might be true that mothers may not find the opportunity to be with their child when they work. Also it is known that mothers cuddling, holding the baby, breastfeeding has important part among mother to baby

bond (Brody, 1981; Köse et al., 2013) Thus it maybe plausible that if mothers don't have the opportunity to breastfeed and cuddle their baby it might negatively influence the bonding process.

Finally, the present study investigated the relationship between mother's employment status and centrality of event and revealed that unemployed mothers had higher event centralization compared to employed mothers. This finding is parallel with the current research indicating that that the birth and responsibility of the baby is a very demanding process for the mother (Widding & Farooqi, 2016; Forcada-Guex et al., 2011). The majority of the mothers contributed to current study were not employed so they did not have restricted time with their baby. Therefore, the relevant finding in the study seems to be plausible since the fact that the mother doesn't have an occupation which takes her time during the day, they could perceive the event more centrally than working mothers.

4.2. The Relationship Between Posttraumatic Stress Responses, Centrality of Event and Maternal Bonding

Studies have found out that centrality of event and PTSD symptoms are related: When the traumatic event was centralized in a person's life it lead to higher PTSD symptoms as opposed to people who didn't perceived traumatic events in the center of their lives (Bersten & Rubin, 2006; Bernsten & Rubin, 2007). One possible explanation could be that when a traumatic occasion has been centralized, it will facilitate the remembrance of distressing memories and escalate PTSD responses (Blix et al., 2016). Consistent with the literature, in the present study we have found a positive association between centrality of event and posttraumatic stress responses.

There hasn't been any study that investigates the centralization of birth and PTSD symptoms before. However it has been suggested that mother's subjective encounters and their perceptions about birth have an important role leading mothers experiencing posttraumatic stress symptoms (Ayers et al., 2016; Suttora et al., 2013; Ayers, 2004).

According to the literature posttraumatic stress symptoms and maternal bonding have a negative relationship (Ayers et al., 2016; Muller-Nix et al., 2004). Ayers et al. (2016), suggest that mothers experiencing posttraumatic stress disorder after birth may avoid from their child which in result could alter the bonding process between the mother and the baby. However, in our study there wasn't a relationship between mothers posttraumatic stress symptoms and maternal bonding. One possible explanation could be, although the Turkish culture is consisted of eastern and western cultures characteristics due to the country's geographical location, Turkish culture could be still defined as traditional (Ataca, Kagitcibasi & Diri, 2005). Moreover having close relationship between the members of the family, particularly between the parents and children is very important in Turkish families (Ataca, et al., 2005).

Since 1970's, Kağıtcıbaşı has studied the value of children, in Turkish families, which refers to the importance and attributions given to children by parents (Kagitcibasi & Ataca, 2005; Ataca et al., 2005). Psychological value of children is among one of the values attributed to child and it means "the value of the children refers to the psychological benefits of having children such as the joy, fun, companionship, pride, or sense of accomplishment that parents gain from having children" (as cited in Kagitcibasi & Ataca, 2005, p. 318). Furthermore it was found out that, over the last years psychological value of children has been considered more

important than financial or other values given to the child (Kagitcibasi & Ataca, 2005; Ataca et al., 2005). In addition Sunar (2002) has suggested that over the years, in Turkish families, expressing positive feelings were encouraged whereas showing negative feelings were restrained.

Therefore, in line with the literature, firstly, in Turkish families, positive notions attributed to having a child such as being happy and proud about owning a child and being a parent become more and more important over the years. Secondly, expressing negative feelings inside the family were mostly restrained, in the present study, mothers may not have objectively reflected their own feelings and thoughts about their babies, thus the questions about maternal bonding.

Furthermore, according to the literature previously centrality of event and maternal bonding was never been investigated. Robson and Moss (1970) describes maternal bonding as how important mother places the child in her life. Furthermore, sense of owning the child, dedicating their self to the child and also acknowledging the maternal role (Köse et al., 2013) is vital for maternal bonding. However in our study, we haven't found any relationship between centrality of event and maternal bonding. Perhaps one possible explanation could be that mothers not giving objective answers about their bonding process could have altered the results of the study.

4.3. The Mediating Role of Centrality of Event on the Relationship between Posttraumatic Stress Symptoms and Maternal Bonding

It was hypothesized in the present study that centrality of event would mediate the relationship between posttraumatic stress responses and maternal bonding among both preterm and full-term mothers. However the results of the

relevant mediation model revealed that centrality of event does not mediate the relationship between posttraumatic stress responses and maternal bonding. In the literature, it was shown that the higher levels of posttraumatic stress responses significantly predict a lower maternal bonding (Forcada-Guex et.al, 2011; Ayers, 2006). Ayers et al. (2016) claimed that mothers experiencing posttraumatic stress disorder after birth might avoid from their child, which in result could result with poor maternal bonding. Moreover, the literature has shown that there is a strong association between centrality of event and PTSD (Berntsen & Rubin, 2007; Wright, 2015). Bersten and Rubin (2007) explained this relationship with the notion if the traumatic occasion is centralized in a person's life; it leads to emergence and continuation of post-traumatic stress disorder. Furthermore, the relationship between centrality of event and maternal bonding hadn't been examined in the literature before. However, Robson and Moss (1970) describes maternal bonding as how important mother places the child in her life. Furthermore, sense of owning the child, dedicating their self to the child (Robson & Moss, 1970) and also acknowledging the maternal role (Köse et al., 2013) is vital for maternal bonding. In the light of the aforementioned results, it was thought that the reduction effect of posttraumatic stress responses on maternal bonding was fully based on centrality of event but did not maintained. There are several explanations to this outcome. First, the sample does not have severe cases to lead mothers to experience posttraumatic stress responses. Second, as mentioned earlier, the importance of psychological value of children in Turkish families, and, restriction of expressing negative feelings inside the family may get in the way of mothers reporting their bonding process objectively.

4.4. The Relationship Between Emergency Cesarean Delivery, Centrality of Event and Posttraumatic Stress Responses

Since there was not mediating effect of centrality of event between posttraumatic stress responses and maternal bonding, it was suggested that perhaps in the present study some other factors such as type of birth might have influenced mothers' bonding and posttraumatic stress responses. Therefore a moderation analysis, which investigates the interaction effect of type of birth and main variables, was conducted. The literature suggests that emergency cesarean delivery has a positive relationship with women's posttraumatic stress responses (Söderquist et al., 2009; Ryding et al., 1998, Andersen et al., 2012). Consistent with the literature, in the present study, positive association was found between emergency cesarean delivery and mother's posttraumatic stress symptoms. One possible explanation to these findings can be that procedures like emergency cesarean delivery, which includes emergencies and death risk, are factors leading to posttraumatic stress symptoms among mothers (Andersen et al. 2012).

Previously, emergency cesarean delivery and centrality of event concept hasn't been investigated together. However, since it is known that emergency cesarean leads to PTSD (Söderquist et al., 2009; Ryding et al., 1998, Andersen et al., 2012), and that mothers' subjective encounters and perceptions have an important role on developing post traumatic stress responses (Suttora et al., 2013; Ayers et al., 2013), it is expected that emergency cesarean delivery is perceived as central. However in the present study no correlations were found between emergency cesarean delivery and centrality of event.

The literature has indicated that there is a positive relationship between centrality of event and PTSD symptoms (Bersten & Rubin, 2006; Bernsten & Rubin, 2007). As it was explained in the mediation analysis section, it has been suggested that when the traumatic event was centralized in a persons life it lead to higher PTSD symptoms (Bersten & Rubin, 2006; Bernsten & Rubin, 2007). Consistent with the previous findings, in our study we also found a positive relationship between Centrality of Event and PTSD responses.

4.5. The Moderating Role of Centrality of Event on the Relationship between Emergency Cesarean Delivery and Posttraumatic Stress Responses

As mentioned in the mediation analysis section, studies have found a positive relationship between Centrality of event and PTSD symptoms (Bersten & Rubin, 2006; Bernsten & Rubin, 2007), since when a traumatic occasion is centralized; it facilitates the remembrance of distressing memories and escalates PTSD responses (Blix et al., 2016). Consistent with the literature, in the present study we have found a positive association between centrality of event and posttraumatic stress responses.

Moreover, it has been suggested that emergency cesarean delivery is a factor leading to PTSD (Ayers et al., 2016; Brandon et al., 2011), in the present study we also found a strong association between emergency cesarean delivery and post traumatic stress symptoms. According to the studies emergency delivery is perceived as traumatic because emergency cesarean delivery is performed when the mother or the baby is under an urgent risk (O' Leary et al., 2007), moreover mothers feel like they are not in charge of the situation (Ayers et al., 2016; Andersen et al., 2012) and they became afraid that the baby will be harmed or that the baby's or their life was threatened (Ryding et al., 1998; Tham, Christensson, & Ryding, 2007).

Moreover, in the moderation analysis, there was an interaction relationship between emergency cesarean delivery and centrality of event. It was found out among preterm and full-term babies' mothers who have had emergency cesarean type of delivery, the ones who had centralized the event had experienced more posttraumatic stress responses than those who hadn't centralized the event. Since emergency cesarean delivery and centrality of event have positive associations with posttraumatic stress responses separately both in the literature (Ayers et al., 2016; Brandon et al., 2011; Bersten & Rubin, 2006; Bernsten & Rubin, 2007), and also in the present study, its no surprise that posttraumatic stress responses are higher among women who had delivered their baby with emergency cesarean section and also who have centralized the event.

4.6. The Relationship between Posttraumatic Stress Disorders and Maternal Bonding among Mothers who have Higher Event Centrality and who have gone through Emergency Cesarean Delivery

After conducting the moderation analysis, since we have found that the mothers who had emergency cesarean delivery and centralized the event had high posttraumatic responses, we wanted to investigate the relationship between posttraumatic stress symptoms and maternal bonding among mothers who have gone through emergency cesarean delivery and who have centralized the delivery. In the literature an association between maternal bonding and CES was shown as mentioned in the mediation analysis section. Moreover it has been suggested that emergency cesarean delivery had associations with poor maternal bonding since the type of delivery changes at the last minute from normal vaginal delivery to emergency cesarean delivery get in the way of mothers' positive feelings towards the

birth occasion and their feelings towards their babies (Zanardo et al., 2016). However, in the present study, there wasn't any significant relationship among correlations between having emergency cesarean delivery and also centralizing the event with posttraumatic stress responses.

4.7. Comparison of Posttraumatic Stress Responses between Preterm and Full-Term Babies' Mothers

Additional to the mediation and moderation analysis, in the present study, a comparison of posttraumatic stress responses, centrality of event and maternal bonding was investigated between premature babies mothers and full-term babies mothers.

Body of research have found out that mothers of premature infants experienced more post-traumatic stress responses than mothers of full-term infants (Suttora et al., 2013; Ghorbani, et al, 2014; Ghorbani, Dolatian, Shams, Alavi-Majd, & Tavakolian, 2014). According to the literature, premature delivery of a child is a source of stress for the mother and usually seen as a traumatic experience (Shah, et al., 2011). The though conditions coming along with the prematurity like being separated from the infant, infants medical conditions are source of stress for the mothers of the premature babies (Öztürk & Saruhan, 2010; Suttora et al., 2013; DeMier et al., 2000). Moreover, it was also suggested that, as the severity of infants' condition gets more serious, it escalates the PTSD responses of mothers (Suttora et al., 2013; DeMier et al., 2000).

However, in our study there wasn't any difference of posttraumatic responses between preterm and full-term mothers babies. One possible explanation to our finding could be the fact that premature babies mothers didn't show more posttraumatic responses is that in our premature group sample nearly half of the group were moderate to late premature babies (babies born after 32 to 37 weeks of gestation) (WHO, 2015); which could be almost considered as full term babies. The most risky premature group leading mothers excessive posttraumatic stress responses, which is: extremely premature infants (Widding & Farooqi, 2016) were very little in our sample. Therefore, it could be concluded that, our premature data may not represent the general conditions of premature babies (including critic health conditions, severity of prematurity and so on). Another possible explanation could be, according to Ayers and colleagues (2016), mothers' subjective encounters are the most important factors among many other elements explaining mothers posttraumatic stress responses after childbirth no matter how risky their health conditions are (Suttora et al. 2013) Therefore, it could be concluded that premature babies' mothers didn't perceive having a premature baby as a traumatic event or perhaps even if they have considered having a premature baby as traumatic, they could not have admit perceiving their birth process and babies conditions as a source of stress or traumatic because of the norms of being a mother in Turkish culture. Moreover, according to the literature, in Muslim belief God has the power over the health conditions and sicknesses. People don't have any control of what is happening to them. If it's written on their forehead and if God wants things to happen that way, (Zahr & Hattar- Pollara, 1998), it is plausible in the present study that mothers of preterm babies may have thought there is no reason to question the misfortunes of prematurity and accept the things the way they are.

4.8. Comparison of Event Centralization between preterm and full-term babies' mothers

Previously, centrality of event concept and mothers' birth experiences was never been studied together. In the present study the aim was to compare centralization of the event between full-term and preterm babies mothers. Furthermore, it was expected to find higher centralization among mothers of the preterm babies since, as it is explained in the previous chapters and the paragraph above that; as the premature babies' overall health condition is more risky than full-term babies, taking care of premature infants are regarded as being more demanding for the mother (Forcada-Guex et al., 2011). Moreover it has been suggested that premature babies' mothers tend to give extra care to fulfill the needs of their infants (Beckwith & Cohen, 1978). Therefore it is plausible that birth of premature babies is more centered in mother's lives. However, in our study there wasn't any significant difference of centralization of event between full-term and preterm babies' mothers. One possible explanation could be that it is known that birth in general is an important, life-changing event for the mother (Bernsten & Rubin, 2006). Therefore it is possible that mother perceive the birth of their babies as central no matter the condition of the infant. Another possible explanation could be that in the present data, premature babies were mostly consisted of moderate to late premature babies. These babies may not be perceived as very needy or demanding and perhaps wasn't seen as more central to mothers.

4.9. Comparison of Maternal Bonding between preterm and full- term babies' mothers

Body of research has shown that maternal bonding among mothers of premature babies were poorer than maternal bonding of full-term babies mothers. (Forcada-Guex et al., 2011; Köse et al., 2013; Feldman et al., 1999). According to the studies, premature birth was perceived as an immediate intrusion to becoming a mother (Stern & Bruschweiler-Stern, 1998, as cited in Suttora, Spinelli, & Monzani, 2013), and that familiarization to their babies was harder for premature babies' mothers (Correia & Linhares, 2007). Moreover parents of premature babies struggled giving right amount of care to their babies (Widding & Farooqi., 2016) and they tend to neglect their infants (Brody, 1981). These findings are among the reasons explaining poor mother to infant bond in premature babies' mothers.

On the other hand, there are several studies who have found out that better mother baby relationship (Korja et al., 2012; Korja et al., 2008) and better maternal bonding (Hall, et al., 2014) among mother of premature infants comparing to mothers of full-term infants. In the present study, preterm mothers maternal bonding was better compared to full-term mothers maternal bonding. Some studies have explained better mother-infant relationship since mothers perceived their premature infants as sick babies (Camhi, 2005; Mellow, 2014) mainly because of their vulnerable situation concerning their birth weight, severe health issues, young gestational age. Therefore, they tend to increase their contact with their infant in order to give extra care to fulfill the needs of their sick infants (Beckwith & Cohen, 1978). Moreover, another explanation could be that understanding of caregiving and maternal to infant relationship may change from culture to culture (Donovan & Williams, 2015; Symanski, 1990). According to one study investigating how

Vietnamese people care the sick and needy members in their family, it was found out that Vietnamese people had a collectivist kind of position while looking after their family members. They approached to caregiving as something so natural and that they have to do without questioning it (Donovan & Williams, 2015). In addition, Symanski (1990) it's important to keep in mind the cultural norms while investigating mothers bonding process. Hence it is normal in some cultures in which women give extra care to the child. Similarly, in the Turkish culture just like the Vietnamese culture, family members have a position where they value caregiving to other family members, and mothers tend to take extra care of their children.

Plus, the apprehension of motherhood in the society generally has been shaped around the concept of “good mothering” since there is a general expectancy from the mother about being a good mother from the society (Widding & Farooqi, 2016; Rovin; 2017). Additionally, its important for Turkish parents to feel proud and happy about their children and that its not acceptable to show negative emotions towards their children (Kagitcibasi & Ataca, 2005; Ataca et al., 2005; Sunar, 2002). Therefore mothers may not be reporting their negative feelings and experiences about their babies .

4.10. Clinical Implications and Contributions of the Present Study

Preterm and full-term mothers were chosen as the sample group in the present study since the birth experience plays a critical role in the both mothers' and babies' well-being (Ayers, Eagle, & Waring, 2006; Mckenzie-Mcharg et al., 2015; Grekin & O'Hara, 2014). The aim of the present study was to expand the knowledge on premature and full-term babies' bonding by investigating the mediating effect of

event centrality between mothers' posttraumatic stress responses and maternal bonding. However, it was found that there was not a significant mediation. Therefore, a need for a deeper examination was occurred in the present study. A moderation model was conducted with the inclusion of birth type birth type (emergency cesarean delivery, planned cesarean delivery, normal vaginal delivery) as a new variable. It was found that a significant interaction effect of emergency cesarean delivery and centrality of event on mothers' posttraumatic stress symptoms were found.

In the theoretical level, the present study investigated centrality of birth event for the first time in the literature and its relations with birth type, posttraumatic stress symptoms. The findings have expanded the knowledge in the literature about maternal bonding, traumatic experiences of premature and full-term babies mothers.

In the clinical level, it's vital for clinicians to be competent to work with mothers who suffer from trauma after birth or if they have bonding problems with their babies. Therefore, as suggested in the literature review, it's important that mothers and also the clinicians, doctors, nurses and midwives should be informed and trained that mothers may experience traumatic symptoms after birth and that it may hamper their relationship with their babies (Köse et al., 2013). Moreover, the present study would enhance the awareness and readiness of psychologists in hospital to make interventions if mothers needed any help in terms of their of difficult birth experiences or their relationship with their babies.

4.11. Limitations and Implications for Further Research

Although the study has a significant contribution to the research area, there are also some limitations. The premature sample in the present study was mostly consisted of moderate to late term babies, which had the lowest health risks among the premature baby subgroups and could be almost considered as full-term babies. Therefore not having equal premature subgroups could have biased the results about making inference about prematurity. Secondly, in the literature health conditions of the babies have both impact on maternal posttraumatic symptoms and also maternal bonding. However, in our study the medical risks of the children weren't fully assessed to make assumptions about the influences of babies' health conditions on maternal posttraumatic stress symptoms and also maternal bonding. Another limitation of the study was that our data was consisted of mostly mothers who were graduated from bachelor's degree, there was only one participant graduated from primary school and very few mothers who were graduated from the middle school. Therefore the data of the present study may mostly represent the birth experiences of well-educated women in Turkey. Moreover, accessibility to the data was another problem. Originally data was aimed to recruit from the mothers who had doctor controls in hospitals in Istanbul but accessibility to mothers was a problem, therefore the data was recruited from social media. However it was concluded that in general birth process and especially prematurity is a sensitive concept. Some of the mothers often reported feeling stressed or feeling unpleasant while completing the survey or some mothers felt concerned talking about their premature birth process and didn't want to join the survey.

In light of those limitations, the present study has some recommendations for future studies. First of all, group sizes among premature subgroups should be equal.

Secondly, infants' health conditions should be assessed with a scale so the appropriate interpretations could be made about infants' prematurity level and their health conditions. Thirdly, participants graduated from middle school and primary school should also participate to the study so that information about education level of the mothers could be derived. Lastly, perhaps besides from using quantitative self-report measures to assess the traumatic symptoms, centralization of the event and maternal bonding, qualitative measures such as interview or mother-child interaction observation could be made in order to better understand mothers' bonding process. With the help of the qualitative measures, and mothers expressing their experiences freely it could be understood the reasons whether mothers report higher bonding scores because of the cultural bias or whether they felt like they had to give compensatory care to their premature babies or perhaps they had other explanations regarding their answers.

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APPENDIX A

INFORMED CONSENT FORM

Değerli Katılımcı;

Bu araştırma Bahçeşehir Üniversitesi Klinik Psikoloji Yüksek Lisans Programı öğrencisi Aslı Yaman tarafından, Yrd. Doç. Dr. Ayşe Meltem Budak danışmanlığında, yüksek lisans tezi kapsamında yürütülmektedir. Bu araştırmanın amacı annelerin (erken) doğum tecrübelerini incelemek ve yeni doğum yapan annelerin erken doğum tecrübeleri hakkında bilgi edinmektir.

Araştırmanın anketleri sizin yaklaşık olarak 15-20 dakikanızı alacaktır. Araştırmanın amacı kapsamında, görüşme formunda bazı sorular bireysel özellikleriniz ve şu anki yaşantınız ile ilgilidir.

Toplanan veriler kesinlikle gizli tutulacaktır. Lütfen görüşme formlarına kimlik bilgilerinizi (isim, soy isim vb.) yazmayınız.

Araştırma kapsamında elde edilen bilgiler sadece çalışma kapsamında kullanılacaktır.

Bu araştırmaya katılmak tamamen gönüllülük esasına dayanmaktadır. Araştırmaya katılmama hakkınız da mevcuttur. Formdaki soruları yanıtlarken, istediğiniz zaman ve herhangi bir sebep göstermeden geri çekilme imkânına sahipsiniz.

Sorulara sizin için doğru olan cevapları vermeniz araştırmanın sonuçları açısından önemlidir.

Çalışmayla ilgili her türlü soru ve çalışma hakkında daha fazla bilgi almak için, Aslı Yaman (asliyaman03@gmail.com) ile iletişime geçebilirsiniz.

Katılımınız ve katkılarınız için şimdiden teşekkür ederim.

Yukarıdaki yazıyı okudum anladım ve araştırmaya katılmak istiyorum ()

Hayır Katılmak istemiyorum. ()

Şu an 1- 6 aylık (prematüre) bebeğim olduğunu kabul ediyorum ()

APPENDIX B

SOCIO DEMOGRAPHIC FORM

1. Yaşınız: _____

2. Yaşadığınız şehir: _____

3. Eğitim düzeyiniz: İlkokul ()

Ortaokul ()

Lise ()

Üniversite ()

Yüksek Lisans ()

Doktora ()

4. Çalışma durumunuz: Çalışıyorum () Çalışmıyorum () Emekliyim ()

7. Evinize giren aylık toplam gelir:

a. Ayda 1000 TL'nin altında ()

b. 1001-2000 TL ()

c. 2001-4000 TL ()

d. 4001-7000 TL ()

e. 7001-12000 TL ()

f. Ayda 12000 TL'nin üzerinde ()

6. Evlilik türü : Resmi nikah () İmam nikahı () Diğer ()

7. Çocuk sayısı : 1 () 2 () 3 () 4 () 5 () 6 ve üzeri ()

8. Gebelikte annede tespit edilen tıbbi durum (Örn, diabet, hiperemesis gravidorum, diğer....):

Var () Yok ()

9. İstenen/planlı gebelik olup olmadığı :

Planlı-istenen ()

Plansız-istenen ()

Plansız-istenmeyen ()

10. Doğum tipi : Normal doğum () Sezaryen doğum ()

11. Sezaryen doğum ise önceden planlanmış sezaryen doğum mu , ani sezaryen doğum mu belirtiniz:

Sezaryen ani () Sezaryen planlı ()

12. Bebeğin hastanede kalış süresi (Lütfen gün olarak belirtiniz) : _____

13. Bebek annenin hamileliğinin kaçınıcı haftasında doğdu: _____

14. Bebeğin doğum sonrası tıbbi sıkıntısı:

Var () Yok ()

Var ise belirtiniz: _____

APPENDIX C

**PTSD CHECKLIST FOR DIAGNOSTIC AND STATISTICAL MANUAL OF
MENTAL DISORDERS, FIFTH EDITION (PCL-5)**

Aşağıda, (erken) doğum tecrübesi karşısında annelerin yaşayabildikleri problemlerin bir listesi yer almaktadır. Bu sürecinizi düşündüğünüzde, DOĞUM SONRASINDA bu olayın size ne kadar sıkıntı verdiğini, sağdaki kutuların içindeki size en uygun rakamı yuvarlak içine alarak gösteriniz.

DOĞUMDAN SONRA aşağıda yer alan durumlar sizi ne ölçüde bunalttı:	Hiç	Çok az	Orta derecede	Oldukça fazla	Aşırı
1.Stresli olayın tekrarlayan, rahatsız eden ve istenmeyen anıları sizi ne kadar bunalttı?	0	1	2	3	4
2.Stresli olaya ilişkin tekrarlayan, rahatsız eden rüyalar sizi ne kadar bunalttı?	0	1	2	3	4
3.Aniden stresli olayı sanki gerçekten bir daha yaşıyormuş gibi hissetmek veya davranmak (sanki gerçekten olayın yaşandığı ana geri dönmüş, yeniden yaşıyormuş gibi) sizi ne kadar bunalttı?	0	1	2	3	4
4.Bir şeyler size stresli olayı anımsattığı zaman yaşadığınızı üzüntü hissi sizi ne kadar bunalttı?	0	1	2	3	4
5.Bir şeyler size stresli olayı anımsattığı zaman güçlü fiziksel tepkiler vermek (örneğin, kalp çarpıntısı, nefes almada güçlük, terleme gibi) sizi ne kadar bunalttı?	0	1	2	3	4
6.Stresli olayla ilişkin anılardan, düşüncelerden ve duygulardan kaçınmaya çalışmak sizi ne kadar bunalttı?	0	1	2	3	4
7.Stresli olayı anımsatan etraftaki hatırlatıcı şeylerden (örneğin, insanlardan, yerlerden, konuşmalardan, etkinliklerden, nesnelerden veya durumlardan) kaçınmaya çalışmak sizi ne kadar bunalttı?	0	1	2	3	4
8.Stresli olaya ilişkin önemli kısımları hatırlamada yaşanan güçlükler sizi ne kadar bunalttı?	0	1	2	3	4
9.Kendiniz, diğer insanlar veya dünya hakkında olumsuz düşüncelere sahip olmak (örneğin, kötü biriyim, bende ciddi bir şekilde yanlış olan bir şeyler var, kimseye güvenilmez, dünya tümüyle tehlikeli bir	0	1	2	3	4

yerdir gibi düşünceler) sizi ne kadar bunalttı?					
10.Stresli olay veya bu olayın sonrasında ortaya çıkan durumlar için kendinizi veya bir başkasını suçlamak sizi ne kadar bunalttı?	0	1	2	3	4
11.Korku, dehşete kapılma, öfke, suçluluk veya utanç gibi güçlü olumsuz duygular sizi ne kadar bunalttı?	0	1	2	3	4
12.Daha önce yapmaktan keyif aldığımız etkinliklere olan ilginizi kaybetmek sizi ne kadar bunalttı?	0	1	2	3	4
13.Başka insanlardan uzak veya kopmuş hissetmek sizi ne kadar bunalttı?	0	1	2	3	4
14.Olumlu duyguları yaşayamamak (örneğin, mutluluğu hissetmemek veya size yakın insanlara sevgi dolu hisler duyamamak) sizi ne kadar bunalttı?	0	1	2	3	4
15.Asabi davranışlar, öfke patlamaları veya öfkeli hareketler sizi ne kadar bunalttı?	0	1	2	3	4
16.Çok fazla risk almak veya size zarar verebilecek şeyler yapmak sizi ne kadar bunalttı?	0	1	2	3	4
17.Aşırı tetikte olmak veya temkinli davranmak veya hazırda beklemek sizi ne kadar bunalttı?	0	1	2	3	4
18.Yerinden sıçramak veya kolayca irkilmek sizi ne kadar bunalttı?	0	1	2	3	4
19.Dikkati toplamada güçlükler sizi ne kadar bunalttı?	0	1	2	3	4
20.Uykuya dalma veya uykuyu devam ettirme güçlükleri sizi ne kadar bunalttı?	0	1	2	3	4

APPENDIX D

CENTRALITY OF EVENT SCALE

Lütfen (erken) doğum tecrübenizi düşünün ve aşağıdaki soruları, dürüst ve samimi bir şekilde 1'den 5'e kadar yer alan numaralardan birini işaretleyerek yanıtlayın.

1-----2-----3-----4-----5

Hiç katılmıyorum
katılıyorum

Tamamen

1. Bu olay, yeni deneyimlere anlam vermemde bir dayanak noktası haline geldi.	1	2	3	4	5
2. Otomatik olarak, bu olayla şimdiki hayatımdaki deneyimler arasındaki bağlantıları ve benzerlikleri görüyorum.	1	2	3	4	5
3. Bu olayın kimliğimin bir parçası haline geldiğini hissediyorum.	1	2	3	4	5
4. Bu olay, hayatımdaki önemli temaların sembolü veya izi olarak görülebilir.	1	2	3	4	5
5. Bu olay hayatımı, diğer birçok insanın hayatından daha farklı kılıyor.	1	2	3	4	5
6. Bu olay, kendime ve dünyaya anlam vermemde bir dayanak noktası haline geldi.	1	2	3	4	5
7. Bu tür bir olay yaşamamış kişilerin benden daha farklı şekilde düşündüklerine inanıyorum.	1	2	3	4	5
8. Bu olay, kim olduğumla ilgili çok fazla şey söylüyor.	1	2	3	4	5
9. Sıklıkla, bu olay ve diğer kişilerle halihazırda var olan ilişkilerim arasında bağlantılar ve benzerlikler görüyorum.	1	2	3	4	5
10. Bu olayın, hayat hikayemin merkezi bir parçası haline geldiğini hissediyorum.	1	2	3	4	5
11. Bu tür bir olay yaşamamış kişilerin, kendilerine bakışlarının benimkinden daha farklı olduğuna inanıyorum.	1	2	3	4	5
12. Bu olay, diğer deneyimler hakkında düşünme ve hissetme şeklimi renklendirdi.	1	2	3	4	5
13. Bu olay, geleceğime bakışıma bir dayanak noktası haline geldi.	1	2	3	4	5
14. Eğer hayatımın halısını dokuyacak olsam; bu olay, birçok başka deneyime çıkan iplerle tam ortada olurdu.	1	2	3	4	5
15. Hayat hikayem iki ana bölüme bölünebilir: biri bu olaydan önce ve biri de, bu olay olduktan sonra.	1	2	3	4	5
16. Bu olay, kalıcı olarak hayatımı değiştirdi.	1	2	3	4	5
17. Sıklıkla bu olayın geleceğim üzerinde sahip olacağı etkiler hakkında düşünüyorum.	1	2	3	4	5
18. Bu olay hayatımda bir dönüm noktasıydı.	1	2	3	4	5
19. Eğer bu olay hiç başıma gelmemiş olsaydı, bugün başka bir insan olurdu.	1	2	3	4	5
20. Geleceğim hakkında kafa yorduğumda, sıklıkla dönüp bu olayı düşünüyorum.	1	2	3	4	5

Yukarıdaki sorulara, hangi olayı düşünerek yanıt verdiğinizi kısaca yazınız. -----



APPENDIX E

MATERNAL ATTACHMENT SCALE (MAI)

Aşağıda yeni annenin durumu ile ilgili tecrübeleri, hisleri ve duyguları tanımlanmaktadır. Lütfen her ifadede tanımlanan duygu ve düşüncüyü ne sıklıkta hissettiğinizi ve düşündüğünüzü her biri için tek bir kutucuğu işaretleyerek belirtiniz.				
	Her Zaman	Sık Sık	Bazen	Hiçbir Zaman
1. Bebeğimi sevdiğimi hissediyorum.	1	2	3	4
2. Bebeğimle birlikteyken mutluluk ve içimde bir sıcaklık hissediyorum.	1	2	3	4
3. Bebeğimle özel zaman geçirmek istiyorum.	1	2	3	4
4. Bebeğimle birlikte olmak için sabırsızlanıyorum.	1	2	3	4
5. Sadece bebeğimi görme bile beni mutlu ediyor.	1	2	3	4
6. Bebeğimin bana ihtiyacı olduğunu biliyorum.	1	2	3	4
7. Bebeğimin sevimli olduğunu düşünüyorum.	1	2	3	4
8. Bu bebek benim olduğu için çok memnunum.	1	2	3	4
9. Bebeğim güldüğünde kendimi özel hissediyorum.	1	2	3	4
10. Bebeğimin gözlerinin içine bakmaktan hoşlanıyorum.	1	2	3	4
11. Bebeğimi kucağımda tutmaktan hoşlanıyorum.	1	2	3	4
12. Bebeğimi uyurken seyrediyorum.	1	2	3	4

13. Bebeğimin yanımda olmasını istiyorum.	1	2	3	4
14. Başkalarına bebeğimi anlatıyorum.	1	2	3	4
15. Bebeğimin gönlünü almak zevklidir.	1	2	3	4
16. Bebeğimle kucaklaşmaktan hoşlanıyorum.	1	2	3	4
17. Bebeğimle gurur duyuyorum.	1	2	3	4
18. Bebeğimin yeni şeyler yapmasını görmekten hoşlanıyorum.	1	2	3	4
19. Düşüncelerim tamamen bebeğimle dolu.	1	2	3	4
20. Bebeğimin karakterini biliyorum.	1	2	3	4
21. Bebeğimin bana güven duymasını istiyorum.	1	2	3	4
22. Bebeğim için önemli olduğunu biliyorum.	1	2	3	4
23. Bebeğimin hareketlerinden ne istediğini anlıyorum.	1	2	3	4
24. Bebeğime özel ilgi gösteriyorum.	1	2	3	4
25. Bebeğim ağladığında onu rahatlatıyorum.	1	2	3	4
26. Bebeğimi içimden gelen bir duyguyla seviyorum.	1	2	3	4