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ERCIYES UNIVERSITY

INSTITUTE OF HEALTH SCIENCES

Department of Nursing

Obstetrics and Gynecology Nursing

EFFECTS OF AWARENESS-BASED PARENTING AND BIRTH PREPARATION EDUCATION GIVEN TO COUPLES ON MATERNAL-PATERNAL BONDING, BIRTH PARAMETERS AND POSTPARTUM SLEEP

Preparer

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DOCTORATE THESIS

JULY 2025

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COMPLIANCE WITH SCIENTIFIC ETHICS

I declare that this thesis is my own work, and that all information has been obtained in accordance with academic and ethical rules. I also state that I have fully transferred all materials and results as required by academic and ethical rules, and that in case of use of the works of others, I have referred to the relevant works in accordance with scientific rules and shown them in the list of sources.

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The Doctoral Thesis titled "The Effect of Mindfulness-Based Parenting and Childbirth Preparation Education Given to Couples on Maternal-Paternal Attachment, Birth Parameters and Postpartum Sleep" was prepared in accordance with the Erciyes University Graduate Thesis Proposal and Thesis Writing Guidelines.

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THANKS

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KAYSERI, JULY 2025

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Erciyes University Health Sciences Institute
Department of Nursing
PhD Thesis, July, 2025
Advisor: Prof. Dr. Salime MUCUK

SUMMARY

THE EFFECT OF MINDFULNESS-BASED CHILDBIRTH AND PARENTING EDUCATION TO MATERNAL AND PATERNAL ATTACHMENT, BIRTHING PARAMETERS AND POSTPARTUM ADAPTATION

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ABSTRACT

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1. INTRODUCTION AND PURPOSE

1.1 . Problem Status

The research question was formulated as “What is the effect of Mindfulness-Based Parenting and Childbirth Preparation Education on maternal-paternal attachment, birth parameters and postpartum sleep?”

1.1.1. Sub Problems

- What is the effect of mindfulness-based parenting and birth preparation education on parents' conscious awareness levels?
- What is the effect of mindfulness-based parenting and childbirth preparation education on prenatal maternal and paternal attachment?
- What is the effect of mindfulness-based parenting and childbirth preparation education on postpartum maternal and paternal attachment?
- What is the effect of mindfulness-based parenting and childbirth preparation education on fear of childbirth in parents?
- What is the effect of mindfulness-based parenting and childbirth preparation education on pain during birth?
- What is the effect of mindfulness-based parenting and childbirth preparation education on the type of birth that occurs?
- What is the effect of mindfulness-based parenting and childbirth preparation education on postpartum sleep?

1.1.2. Hypotheses of the Research

H_{01} : Mindfulness-based parenting and birth preparation training has no effect on parents' conscious awareness levels.

H_{11} : : Awareness-based parenting and birth preparation education has an effect on the conscious awareness levels of parents.

H_{02} : Mindfulness-based parenting and birth preparation education has no effect on prenatal maternal and paternal attachment.

H_{12} : Mindfulness-based parenting and birth preparation education has an effect on prenatal maternal and paternal attachment.

H_{03} : Mindfulness-based parenting and birth preparation education has no effect on postpartum maternal and paternal attachment.

H_{13} : Mindfulness-based parenting and childbirth preparation education has an effect on postpartum maternal and paternal attachment.

H_{04} : Awareness-based parenting and childbirth preparation education has no effect on the fear of childbirth in parents.

$H_{14:}$ Mindfulness-based parenting and childbirth preparation education has an effect on the fear of childbirth in parents.

H_{05} : Mindfulness-based parenting and childbirth preparation education has no effect on pain during childbirth.

H_{15} : Mindfulness-based parenting and childbirth preparation education has an effect on pain during childbirth.

H_{06} : Awareness-based parenting and childbirth preparation education has no effect on the type of birth that occurs.

H_{16} : Mindfulness-based parenting and childbirth preparation education has an impact on the type of birth that occurs.

H_{07} : Mindfulness-based parenting and childbirth preparation education has no effect on postpartum sleep.

H_{17} : Mindfulness-based parenting and childbirth preparation education has an effect on postpartum sleep.

1.2. Purpose of the Research

The aim of the study is to evaluate the effects of Mindfulness-Based Parenting and Childbirth Preparation Education given in childbirth preparation classes on maternal-paternal attachment, birth parameters and postpartum sleep.

2. GENERAL INFORMATION

2.1.Childbirth Preparation Education and Its Historical Process

Pregnancy, birth and the postpartum period are physiological processes, but they are also periods when health care needs increase. Prenatal care services meet this increasing need (Demirci and Şimşek, 2018; Ferguson et al., 2013). Prenatal care includes education, counseling, screening and treatment to provide the best possible health care for the mother and baby, and provides an opportunity for systematic monitoring and evaluation of mothers during this process (Al Ateeq and Al Rusaiess, 2015 ; Aji et al., 2019) .

Birth preparation training given during the antenatal period is of primary importance among prenatal care services (AlDughaishi et al., 2023). Healthcare workers providing prenatal care are expected to conduct childbirth preparation education activities in order to achieve positive pregnancy and birth outcomes, to ensure early diagnosis and timely treatment of pregnancy-related diseases, to prevent complications during pregnancy, birth and the postpartum period, to develop strategies to cope with negative situations such as anxiety, fear and worry experienced throughout the process, to increase self-efficacy regarding the birth process, and to help couples adapt to parenthood by raising awareness on their journey to becoming a parent (Agrati & Lonstein, 2016; AlDughaishi et al., 2023; Gluck et al., 2020; Herval et al., 2019; Levett et al., 2020; Okumuş & Mete, 2014; Özgan Çelikel, 2022; Rashed et al., 2023; Sezgin & Aydın Kartal, 2021; Gökçe İsbir et al., 2016; Serçekuş & Başkale, 2016). It has been reported that couples who receive childbirth preparation training feel safer during birth, prefer vaginal birth more, feel competent in parenting and baby care, and the bond between parent and baby is strengthened (Soğukpınar and Karaca Saydam, 2018).

Childbirth preparation education is an important component of prenatal care services and enables couples on their way to becoming parents to adapt to the prenatal, birth and postnatal process and to complete the process with positive experiences (Sezgin & Aydın Kartal, 2021). According to the recommendations of WHO (2018), NICE and RCOG **(add source),** effective childbirth preparation education goes beyond measuring the physiological changes in pregnancy and enables the formation of a safe pregnancy, birth and postpartum process. Thanks to the education provided, pregnant women make conscious decisions during this process, advocate for their unborn babies, and develop their self-confidence by understanding how to manage the process. The most important gain of positive experiences is that it contributes to the reduction of perinatal morbidity and mortality (Grussua & Quatraro, 2020 ; Lothian, 2016 ; Levett et al., 2020 ; Janicka-Kubiak et al., 2022; Setyaningsih & Zakiyah, 2019). Most maternal and infant deaths in developing countries can be prevented with prenatal care (Sevil and Ertem, 2016). It has been

reported that qualified childbirth preparation training has the potential to reduce the neonatal mortality rate by 10-20% (Tekelab et al., 2019). According to studies, childbirth preparation training reduces fear of childbirth (Hong et al., 2020; Buran et al., 2020; Serçekuş and Başkale, 2016), increases postpartum adaptation (Doğan and Merih, 2017), maternal self-efficacy (Hong et al., 2020) and vaginal birth rate (Buran et al., 2020; Esencan et al., 2018). In studies conducted with fathers, it has been concluded that fathers increase their functional status and marital harmony by activating their support systems (Güngör, 2015; Şayık et al., 2019). It has been concluded that positive outcomes will occur with the participation of couples in the training together (Başgöl and Koç, 2021). According to the Turkey Demographic and Health Survey (TDHS) data, almost all women (96%) received prenatal care from expert healthcare personnel in their last birth. Although the data show us that prenatal care in Türkiye is sufficient, the cesarean section rate of 52% contradicts this situation (TDHS, 2018). In the same report, a cesarean section decision is made before labor pains begin for 38% of births. The World Health Organization (WHO) reports the ideal cesarean section rate as 10-15% (WHO, 2024). According to 2022 data, Turkey has the highest cesarean section rate in the world. While the rate is 78% in private hospitals and 75% in university hospitals, it has exceeded 46% in Ministry of Health hospitals despite preventive measures (Topaktaş and Beylik, 2024). In order for cesarean section rates to be at the desired level, it is important to manage fear of birth and stress. Childbirth preparation education is the most common intervention used for this purpose (Kahyaoğlu Süt et al., 2025).

Although antenatal education and services are provided through standard programs in developed countries, well-established programs currently do not exist in many developing countries (Heen et al., 2022 ; Isbir et al., 2016).

Childbirth preparation education, which has such importance in the prenatal, birth and postnatal processes, has gone through a historical process. Childbirth preparation education classes were established in the early 1900s in America in order to educate women about health care, hygiene and baby care during pregnancy and to enable women to cope effectively with labor pain

without the use of analgesia or anesthesia (Barimani et al., 2018). Prenatal preparation classes began to be opened in the 1930s and have increased in number since the 1970s (Coşar et al., 2012; McKee et al., 2018; Sevil and Ertem, 2016). The founder of the first formal course was the British doctor Grantly Dick Read. Dick Read, who introduced the concept of "Educated Childbirth", emphasized that fear could negatively affect labor pain and suggested that relaxation exercises had a positive effect on labor pain. Towards the end of the 1940s, this method was used by Robert Bradley and Margaret Gamper. In 1970, Dr. Robert Bradley founded the Department of Childbirth Coaches at American University and drew attention to the key role of fathers-to-be in childbirth. In the same years, the philosophy of active childbirth was introduced by Janet Balaskas. In 1951, French obstetrician Fernand Lamaze developed a method that provided muscle relaxation with respiratory control and developed the method he called the "Psychoprophylactic Method" by observing the techniques used by women giving birth (Rathfisch, 2018; Sevil and Ertem, 2016). In the 1980s, the philosophy of water birth was put forward by Dr. Michel Odent (Odent, 2014). The Mongan method (hypnobirth), which is the product of nearly 40 years of work and special interest, was introduced by hypnotherapist Marie Mongan in the early 1990s to provide women with a comfortable and natural birth experience free of fear and anxiety (Mongan, 2020). In 1999, Pam England introduced the philosophy of internal birth, which emphasizes creativity and choices and advocates that couples participate in training together (England and Horowitz, 2019).

In Turkey, childbirth preparation education began in the 1980s and became widespread in the 2000s (Serçekuş and Yenal, 2015). Childbirth preparation education classes in Turkey emerged to increase maternal and child health and to increase women's right to receive qualified care during pregnancy and childbirth . The first studies in this area were carried out under the leadership of Oktay Kadayıfçı, Ayşe Öner and Hülya Okumuş. The first educations were given at the Gynecology and Obstetrics Clinic of Çukurova University Faculty of Medicine and at the Incirlik Air Base Hospital in the United States based on the Lamaze philosophy (Okumuş et al., 2015). The first childbirth preparation

center consisting of antenatal classes was established in Istanbul in 1991 under the name of Pregnant Education Center. Then, after the 2000s, the number of childbirth preparation education classes was increased by opening pregnancy schools in centers affiliated with private hospitals and clinics. The Ministry of Health emphasized the importance of childbirth preparation training for the first time in the 2000s under the title of “Safe Motherhood”. However, the trainings could only be implemented in 2011 with the mother-friendly hospital practice initiated by the Ministry of Health to reduce cesarean rates (SHGM, 2024; Uzun Aksoy and Gürsoy, 2016). Later, the “Ministry of Health, Public Health Agency of Turkey, 2014/28 numbered Pregnant Information Class Circular” was published in order to provide these trainings within the framework of certain standards. In line with this circular, the aim of the pregnant information classes was to inform all pregnant women about the pregnancy and birth process, to gain awareness that they can play an active role in their birth, and to acquire knowledge and skills regarding newborn care (Sökmen, 2025). Today, the training provided in childbirth preparation classes continues to be provided within the scope of the "Working Procedures and Principles of Pregnant Information Classes, Pregnant Schools and Childbirth Preparation and Counseling Centers in Health Services No. 2018/23 of the General Directorate of Health Services of the Ministry of Health" in order to ensure standardization and ensure that the training is of the same quality and condition (SHGM, 2024).

2.2.Philosophies of Childbirth Preparation Education

Preparation for birth Although their training is based on models based on different philosophies, all models are based on breathing exercises that support natural birth, active participation of the pregnant woman in the act of birth, fearless, painless and intervention-free birth, and adaptation to the transition to parenthood (Mongan, 2020).

2.2.1. Dick Read Model

British doctor Grantly Dick Read watched a mother give birth silently without anesthetic in London in 1913 and was very impressed by the mother's experience. His studies show that when there is no fear during birth, there is no

pain. Based on this, he defined the fear-tension-pain triangle. In this method, he emphasizes the importance of deep relaxation so that the expectant mother can get rid of her fears of birth and discover her instincts for giving birth (Mongan, 2020; Dick Read, 2004).

2.2.2. Lamaze Model

Arguing that birth is a completely controlled process, French obstetrician Fernand Lamaze developed the controlled breathing technique. Lamaze developed this model following Russian scientist Ivan Pavlov's conditioned response theory. Lamaze's application of this theory to the field of birth went down in history as the first major success for women who wanted to have a non-invasive birth. This method consists of techniques based on regulating breathing during contractions during birth. Lamaze called this method psychoprophylaxis, or mental prevention. By including education in the birth process, he provided women with the opportunity to learn about their bodies' reactions. Today, the modern Lamaze method encourages women to do what they already know how to do, namely, birth, by trusting their instincts (Rathfisch, 2018).

2.2.3. HypnoBirthing-Mongan Model

The Mongan method is a method that is the result of nearly 40 years of work and special attention.

Developed by Marie Mongan in the early 90s, the aim of this method is to enable women to experience a comfortable and natural birth without fear or anxiety, and to allow partners to take part in the process. Arguing that fear of birth lies in the person's subconscious, Mongan stated that the sympathetic nervous system is activated, causing tension and pain. The aim of teaching self-hypnosis before birth is to get rid of fears of birth and have a comfortable and positive birth experience. This philosophy, which is now called hypnosis birth, includes a mixture of education about the process, imaging, hypnosis, relaxation techniques, touching and breathing assistance, and pushing the baby. It consists of four lessons in total and the lessons last two and a half hours. In order to be qualified to provide training, it is necessary to receive certified

training from HypnoBirthing International (Mongan, 2020; Rathfisch, 2018; Shorey, 2022).

2.2.4. Active Birth Model

The active birth philosophy, developed by British childbirth educator Janet Balaskas, is based on creating an environment where women can feel safe by protecting their privacy during birth, allowing hormones to be secreted effectively, and ensuring that birth occurs comfortably in the correct position. She also argues that emotional and physical support for women and eliminating their lack of information contributes significantly to this process. She states that when women are not given enough support during birth, when the environment is not conducive to birth, and when women are not allowed to choose their own birth position, stress hormones called catecholamines come into play, causing vasoconstriction that reduces uterine blood flow and can slow down labor. (Balaskas, 1992).

2.2.5. Bradley Model

The philosophy, which emerged by American obstetrician Robert Bradley, has now become a 12-week training program. It was created to teach fathers how to take an active role in birth and how to coach their wives. In this way, wives will provide both physical and emotional support during birth. Bradley argued that giving birth is like swimming and that the person who delivers should only intervene when necessary, just like a lifeguard. He argued that birth has its own timetable and that it should not be interfered with, and that the birth environment should be quiet and dim. (Rathfisch, 2018; Varner, 2015).

2.2.6. Kitzinger Model

This model, developed by Kitzinger , has developed a psychosexual approach in prenatal education by seeing birth as an individual, sexual and social situation. Therefore, it is also called the Psychosexual Method. This model, which is based on teaching women how to express their feelings, also focuses on the use of sensory memory, body image, relaxation techniques and breathing exercises. Adapting to birth contractions, control ability and concentration, as well as actively responding to pain have been adopted (Şeker and Sevil 2015).

2.2.7. Instinctual Birth-England Model

In the model developed by Pam England, individuals' creativity, choices, past births, fears, knowledge level and needs are prioritized, and a holistic approach is adopted regarding preparation for birth and the postpartum period. Since information about birth is learned from the environment, observation and trial and error methods are frequently used. In addition, an external perspective is provided by what the professional narrator teaches during the training. Training is usually given to couples (England and Horowitz, 2019).

2.2.8. Odent Model

This model, developed by Michel Odent, is completely instinctive and health professionals are in the position of observers, not intervening in the physiology of birth. According to Odent, birth is a special experience and couples should live this experience with love in a suitable physical environment (Odent, 2020).

2.2.9. Leboyer Model

This model, developed by Frederick Leboyer, is applied to reduce the negative effects of practices that can cause pain and trauma to the baby, such as light, sound, interventions for the baby, and early cutting of the umbilical cord. It advocates wrapping the newborn in a blanket and making the delivery room suitable for the newborn (Şeker and Sevil, 2015; Uzun Aksoy and Gürsoy, 2018).

2.2.10. Mindfulness-Based Birth and Parenting Model

The basis of the model known as Mindfulness-Based Childbirth and Parenting, developed by Nancy Bardacke in 1985; It is an innovative program developed to reverse the negative effects of high stress and fear on maternal and newborn outcomes, to improve the mental health of both parents, to support self-efficacy at birth, to improve partner relationships and parental sensitivity, and to keep the baby's development at an optimum level (Duncan and Bardacke, 2009; Çiçek, 2021). The application includes awareness development, meditation and yoga, coping with stress, focus, breathing, group dialogues and natural birth (Duncan and Bardacke, 2009; Onat Bayram and Hotun Şahin 2010).

2.3. Conscious Awareness (Mindfulness)

Conscious awareness (mindfulness) is a seemingly simple way of relating to experiences that has been practiced for more than 2,500 years to alleviate human suffering, and has continued to develop from ancient times to the present day, encompassing Eastern and Western cultures. As used by Western psychotherapists , *mindfulness* is a psychological term based on Buddhism. It is used as a translation of the Pali words *sati* and *smriti* , which were used in the teachings of Buddha, the founder of Buddhism, and sati includes the effects of the words awareness, attention, and remembering (Pollak et al., 2021; Uzun, 2020). Smriti, on the other hand, means to call something or to remind the mind in Sanskrit. These terms were translated into English by Tomas Williams Rhys Davids in 1881 (Lucena et al., 2020).

Mindfulness is being aware of the present experience by accepting it (Germer, 2013) and paying attention to our experiences that develop from moment to moment in a conscious and non-judgmental manner (Kabat Zinn, 2003). It states that consciousness and attention are focused on the moment, and remembering is related to remembering consciousness and attention in the moment (Gündüz, 2016). The acceptance attitude underlying mindfulness, which has a special importance in psychotherapy, means embracing experiences that occur here and now without judgment (Hayes, 2004).

Mindfulness was first introduced into literature by American Doctor Jon Kabat-Zinn by combining words meaning “full mind” (Çatak and Ögel, 2010). According to Kabat-Zinn (2015), among all the meditative wisdom practices developed in traditional cultures throughout the world and throughout history, mindfulness is perhaps the most basic, most powerful, most universal, easiest to grasp and incorporate, and arguably the most needed practice right now. Awareness is nothing more than the capacity we all already have to know what is really happening as it is. Vipassana teacher Joseph Goldstein describes this as “the quality of mind that notices what is present without judgment or intervention, a mirror that clearly reflects what comes before it.” Another vipassana teacher, Larry Rosenberg, calls this “the mind’s power of

observation, a power that changes according to the maturity of the practitioner" (Kabatt-Zinn, 2015). Buddhist scholar and priest Nyanaponika Thera explained the concept of mindfulness as "the infallible key to knowing the mind and therefore the starting point, the perfect tool for shaping the mind and therefore the focal point, and the supreme manifestation of the freedom achieved by the mind and therefore the culmination point" (Kabat-Zinn, 2015). According to Flavell, conscious awareness consists of concepts such as seeing, noticing and bringing together (Akın et al., 2007).

Kabat-Zinn defined the concept of mindfulness as a meditative state defined as the conscious bringing of the mind to the moment and focusing on it. Awareness is an innate quality of the mind and can be developed through systematic practice. With the systematic and conscious development of awareness, wisdom and compassion emerge, and the delusions and permanent blindness of the mind and emotions are liberated (Kabat-Zinn, 2015). With this meta-awareness area, cognitive flexibility increases (Shapero et al., 2018). The essence of mindfulness is universal and is related to the nature of the human mind rather than ideology, belief, philosophy or culture (Baer, 2003; Kabat-Zinn, 2015).

The concept of mindfulness is briefly defined as focusing on the moment, the focus of attention or internal rotation. In addition, attention being aware of breath, focusing on physical perceptions, feelings and thoughts is seen as a healing intervention (Çatak and Ögel, 2010). Mindfulness emerges as the ability to strengthen a person's awareness of not only their skills but also what they can do. In this context, the individual becomes aware of their own power and has the ability to move themselves without any stimulus (Akın and Çeçen, 2015). In summary, conscious awareness is a skill that allows a person to question what they know, control their cognitive skills, take responsibility for themselves, strengthen their self-management skills and manage the process in the best way (Bağçeci et al., 2011).

Conscious awareness is a very applicable intervention, but it is necessary to focus on it and develop it like doing brain exercises or a sport. For this, practice is essential (Aktepe and Tolan, 2020; Kabat-Zinn, 2003).

Clinical interventions related to mindfulness were first performed by Prof. Dr. Jon Kabat-Zinn at the Massachusetts Institute of Technology in 1979. Kabat-Zinn is also the person who created the Mindfulness-Based Stress Reduction (MBSR). According to Kabat-Zinn, a person needs to develop certain attitudes in order to get out of automatic pilot and stay in the moment and effectively benefit from mindfulness practices (Kabar-Zinn, 2013).

2.3.1. Conscious Awareness Attitudes

Conscious awareness teaches us experientially how to handle what we notice. In other words, it includes noticing our judgments, seeing the past and future effects of our perceptions, being compassionate towards ourselves and others in times of pain, and acceptance. The seven basic attitudes for awareness are; being able to stay in the moment, noticing our judgments, acceptance, patience, compassion, letting go, and the spirit of beginning (Atalay, 2021; Hall et al., 2016).

2.3.1.1.Being Able to Stay in the Moment

Mindfulness aims to not stay in the present moment all the time, but to notice our attention, which tends to go to the past and the future, and to gently bring it back to the present moment, to live the present moment. Some moments are neutral moments, outside the category of pleasant or unpleasant. Especially moments in which daily life activities are performed are spent thinking about another moment. Stopping at such times, realizing that we are on automatic pilot and gently bringing our attention back to the present moment is an important mindfulness practice (Atalay, 2021).

2.3.1.2.Noticing Our Judgments

The term used in the mindfulness literature as non-judgment has been updated by Atalay (2021) as noticing our judgments. The mind tends to categorize everything it sees. This categorization tendency of the mind can facilitate the

recognition of perceived events, but it is also necessary to be aware of judgments in order to clarify the perspective. It is important to be aware of automatic reactions resulting from the habit of judgment. Non-judgment does not mean not expressing an opinion about anything, loving everything, not criticizing anything, or not seeing the bad aspects. It is noticing judgments and noticing our reactions to situations we like or dislike. Non-judgment is the ability to ask the question "How would I perceive it?" if I were experiencing this experience for the first time right now, without the influence of the past and future (Atalay, 2021). Conscious awareness helps to see thoughts, even the thoughts that a person judges himself, as mental events that appear and disappear like clouds in the sky. This perspective allows us to understand that we are not made up of thoughts, and this is an extremely liberating insight. One antidote to the judgmental mind is to be kind to oneself and others (Bardacke, 2017).

2.3.1.3.Acceptance

Acceptance adds sincerity and compassion to conscious awareness. Processing experiences with an accepting attitude is perhaps the most difficult and important aspect of mindfulness practices. In order for a person to change, they must accept themselves as they are. Acceptance makes it easier to be equally open to pleasure and distress, to accept gain and loss in the same way, and to stop before overreacting to mistakes. In other words , it allows accepting both the ever-changing life and existential realities. Acceptance is a prerequisite for being able to realize life as it is (Atalay, 2021 ; Bardacke, 2017).

2.3.1.4.Patience

Patience is accepting and understanding that events happen according to their own timing, not according to a timetable chosen by the person. In the process of life, everyone has an impatience to get what they want as soon as possible. There is always patience in mindfulness practices. In meditation, there is patience, waiting, tolerating emptiness, and being patient with the shortcomings of development and change. Even if there is no result from

mindfulness practices, the process should be continued with patience (Atalay, 2021; Kabat-Zinn, 2013).

2.3.1.5.Compassion

In order to cope with challenging life experiences, an attitude is taken to eliminate the difficult situation or replace it with a more pleasant one. Compassion offers an alternative path to these, an attitude of understanding the pain and its nature and staying with it. Pain is universal and the person who suffers is not deficient, different, disadvantaged or unlucky. Compassion is the ability to accept challenging emotions and situations that cause distress without suppressing, ignoring or identifying with that situation. This attitude includes being compassionate not only towards others but also towards ourselves. Being able to receive help from others during difficult times without closing ourselves off also nourishes compassion (Atalay, 2021).

2.3.1.6.Letting it flow

One of the important points of acceptance and making peace with the way things are in time is to let go. There is a tendency to hold on tightly to things in life, to get stuck on certain thoughts, feelings or situations, and to be dependent. Letting go is to see that everything is temporary, not to think, forget or not feel, but to not identify with whatever we are holding on to. Letting go is not to let go or not to care, but to be able to realize whatever is being held on to, to understand the past and future connections and to distance ourselves from them. The way to do this is to focus on the present moment. Instead of thinking too much about the experiences we have, it is to be in the flow of the present moment (source).

2.3.1.7.Spirit of Beginning

In order to get out of automatic pilot in conscious awareness and stay connected to the present moment, it is necessary to have the ability to live each experience as if it were the first. The captivity of knowing the experiences we live can go beyond understanding and enjoying them better. This can lead to a transition from awareness to automatic pilot. Having a beginner's mind helps

develop a fresher, more unprejudiced and open perspective on the moments experienced. By directing curiosity towards what is being experienced at that moment, a mind that is less filled with fear about the future or sad thoughts about the past is achieved. The most important motivation for exploring the present moment is curiosity. The spirit of being a beginner is a purposeful process of wondering as if discovering many things in life for the first time (Atalay, 2021; Bardacke, 2017; Kabat-Zinn, 2013).

2.4. Conscious Awareness Based Practices

The concept of mindfulness has gone beyond the framework conceptualized by Sati and has become a broad concept that includes areas such as health and industry. The Dalai Lama, one of the leading names of Buddhists living in Tibet, has contributed to the scientific development and spread of mindfulness with his leadership in opening the Mind and Life Institute (Moniz & Slutzky, 2015). Prof. Dr. Jon Kabat-Zinn, one of the scientific pioneers of mindfulness, opened the Mindfulness-Based Stress Reduction Clinic in the late 1970s, which allowed the concept to go beyond the eastern borders and the boundaries of religious teachings and increase its popularity in the west (Schmidt, 2011). The Mindfulness Center at Oxford University has been conducting research and education activities since 2008 under the department of psychiatry. In addition, Mindfulness-Based Cognitive Therapy (MBCT) was developed by researchers at Oxford University. The University of Exeter has also been providing education and research services at the university's Mindfulness Center since 2004. The Bangor University Mindfulness Center was established in 2001 by Prof. Mark Williams at Bangor University and operates under the Department of Psychology. There are also Mindfulness application and research centers at Stanford, UCLA, Nottingham, Utah, New Castle and IOWA Universities. In Turkey, there is a YÖK-approved mindfulness application and research center at MEF University, directed by Zümra Atalay (Atalay, 2021). With the increasing prevalence in the West, there are many structured mindfulness-based applications that can be used in different situations and populations, such as the Mindfulness-Based Stress Reduction Program, Mindfulness-Based Cognitive Therapy, Acceptance and

Commitment Therapy, Self-Compassionate Awareness, Mindful Awareness-Based Childbirth Education, Mindful Awareness-Based Childbirth and Parenting Program (Davis & Hayes, 2011).

2.4.1. Mindfulness Based Stress Reduction Program [Mindfulness Based Stress Reduction (MBSR)]

MBSR is a group program that focuses on teaching mindfulness within meditation teachings. MBSR is applied to patients with different characteristics who have physical or mental complaints. In addition to being able to manage stress and difficulties in daily life, it is used to be able to cope with anxiety, anger or many other challenging situations and emotions, to regulate emotions, to accept life difficulties and to provide well-being (Atalay, 2021) . This program was developed by Prof. Dr. Jon Kabat-Zinn and was first implemented in 1979 at the Massachusetts Institute of Technology (MIT) Mindfulness Center. It first emerged as a program that focused on healing patients with chronic pain and changing their relationship with pain rather than reducing their pain. It was later used to cope with stress, challenging situations or emotions. The MBSR program can be used as supportive, preventive, complementary or as a method in itself. When this capacity is integrated into daily life, it becomes easier to cope with physical symptoms and difficult emotions (Kabat-Zinn, 2003; Kabat-Zinn, 2013; Atalay, 2021). The program

aims to be more aware of what is happening at any given moment through an accepting attitude. It helps people avoid negative thoughts, feelings and behavioral patterns that have become habits. Increased awareness and acceptance help create new ways of responding and help people cope with their own and wider world (Atalay, 2021).

Mindfulness training is linked to changes in brain regions responsible for emotion regulation and stress responses. These changes in turn affect biological processes such as breathing, heart rate, and immune function (Davidson et al., 2003; Lazar et al., 2005; Hölzel et al., 2010).

MBSR is currently offered in many health care institutions in the United States and Europe. Target groups include those experiencing chronic physical pain, cancer patients, and those experiencing anxiety, depression, and burnout. The program has also been applied to non-clinical students, therapists, and prisoners (Atalay, 2021; Santamaria-Pelaez et al., 2021).

The MBSR program is a group program that is created within an education-oriented, individual-centered and systematic plan, varying between 10 and 40 participants, consisting of 2.5 hours each week and implemented for 8 consecutive weeks. There is a 6-8 hour silence (retreat) day between the 6th and 7th weeks. Repeating all meditation practices applied throughout the program on this silence day contributes to the deepening of the understanding of mindfulness. MBSR includes a series of physical, spiritual and mental practices and homework. Audio recordings are given to participants to guide their routine meditation studies, and according to the program protocol, homework is done through yoga and meditation sessions that last 45 minutes a day, 6 days a week, and they are encouraged to do their daily activities with awareness (Atalay, 2021; Grossman et al., 2004; Santorelli, 2014; Srour and Keyes, 2024). People with active substance addiction, suicidal ideation, psychosis, post-stress trauma disorder, acute depression or major psychiatric disorders are not suitable for participation in the MBSR program. The practices applied in the program flow are divided into two as formal and informal. Formal practices include body scan, mindful movement (yoga), focusing on

breath, breathing and body exercises, sitting meditation, mindful walking, compassion meditation, pleasant and unpleasant moments calendar, and vision exercise. Informal practices include daily life activities such as mindful eating, mindful communication, mindful teeth brushing (Atalay, 2021; Bailey et al., 2018). The aim of the practices is to enable the person to stay in the moment. When the person's attention is directed to any emotion or thought other than their breath, they are expected to accept all emotions and thoughts as they are, without judgment, with compassion, and direct their attention back to the breath (Atalay, 2021).

Figure 1. Conscious Awareness-Based Education Scheme (Srour and Keyes, 2024).

When the literature is examined, it is seen that MBSR is effective in behavioral regulation, especially for psychological problems such as stress, anxiety, and depression (Zarenejad et al. 2020, Güney et al. 2022), developing mindfulness and compassion (Huberty et al., 2019), relieving pain due to chronic diseases and improving health and preventing diseases in healthy individuals (Khoury et al., 2015; Khoo et al., 2019); relieving cancer-related fatigue and pain (Ngamkham et al., 2019; He et al., 2020), reducing depressive and sleep disorder symptoms by alleviating rumination and anxiety in patients

with breast cancer (Shao et al., 2021), reducing systolic and diastolic blood pressure in people with hypertension (Solano Lopez, 2018; Intarakamhang et al., 2018); It is reported to play an effective role in improving symptoms of irritable bowel syndrome (Gaylord et al., 2011), multiple sclerosis (Grossman et al., 2010), attention deficit and hyperactivity disorder (Zhang et al., 2018), cognitive disorder (Farhang et al., 2019), fibromyalgia (Schmidt et al., 2011), and eating disorders (Turgon et al., 2019). A meta-analysis examining the effect of MBSR on cortisol levels was found to have a beneficial effect on healthy adults (Sanada et al., 2016). The number of randomized controlled trials and meta-analyses revealing that MBSR provides significant and persistent reductions in generalized anxiety disorder symptoms has increased (Blanck et al., 2018; Kim et al., 2022). It indicates that it provides not only symptom reduction but also long-term improvement in areas such as emotional regulation, cognitive flexibility, self-compassion and general quality of life (Guendelman et al., 2017; Blanck et al., 2018). Many mechanisms have been proposed to explain the effect of mindfulness-based interventions on psychological disorders. The most important of these are emotional regulation, cognitive flexibility, acceptance, self-compassion and metacognitive awareness (Guendelman et al., 2017). It has been shown that the constant and repetitive anxiety cycle is broken with mindfulness practices, and the individual can continue his/her existence without identifying with them by observing negative automatic thoughts (Roemer and Orsillo, 2008). At the neurobiological level, mindfulness practices have been reported to reduce amygdala reactivity, increase prefrontal cortex activity and provide regulation in the level of stress hormones. In addition, functional brain imaging studies have shown that it leads to improvements in the ability to maintain attention, shift attention to different stimuli, and self-regulation skills (Hölzel et al., 2011; Hoge et al., 2013).

2.4.2. Mindfulness Based Cognitive Therapy (MBCT)

MBCT emerged from the study of cognitive processes that make depressed individuals vulnerable to relapses (Teasdale et al., 2000). It has been presented as the best method for preventing depression from recurring in the

National Institute for Health and Clinical Excellence (NICE), which is affiliated with the international health system in England and includes the best examples (NICE, 2009). MBCT integrates the elements of cognitive-behavioral therapy for depression with the MBSR program. (Sipe & Eisendrath, 2012). MBCT teaches how to get out of the ruminative thinking (repetitive negative thoughts) pattern. It primarily does this by consciously focusing on body sensations, ensuring that we are not here and now, and shifting the source of our attention away from ruminative thoughts. It provides the ability to observe thoughts without identifying with them and to notice avoided experiences (Atalay, 2021; MacKenzie & Kocovski, 2016). Studies have concluded that MBCT is as effective as maintenance antidepressant medications in reducing the risk of recurrent major depression (Piet and Hougaard, 2011; Kuyken et al., 2015; McCartney et al., 2021). MBCT has been found to contribute to significant improvements not only in the recurrence of depression but also in secondary outcomes such as health anxiety (Surawy et al., 2015), insomnia (Heidenreich et al., 2006), reduction of anxiety and mood disorders, increase in quality of life and social functioning and a significant decrease in the relapse rate (Kim et al., 2022), self-compassion, and emotional regulation (Craigie et al., 2016). The NICE (2020) guideline also states that it would be more beneficial to prefer non-pharmacological approaches such as MBCT in the treatment of depression seen in the perinatal and postpartum period. However, studies have reported that these interventions not only reduce psychological problems in the perinatal and postpartum period, but also have positive effects on mother-baby health (Liu et al. 2022, Safi-Keykaleh et al. 2022).

MBSR and MBCT are mostly referred to as first generation mindfulness-based programs with evidence-based mindfulness practices (Crane et al., 2017). MBSR and MBCT are group intervention programs. MBCT consists of 75% MBSR and 25% Cognitive Behavioral Therapies. MBSR practitioners in the world are generally experts in meditation, yoga and spiritual practices that come from the practice. MBCT, on the other hand, consists of clinicians since it emerged in the mental health center affiliated with

Oxford University. MBCT is applied in more clinical contexts compared to MBRS. Although it is applied with all kinds of groups today, its main focus is on relapse of depression. MBSR, on the other hand, is used in wider applications and contexts. MBCT consists of 2-hour applications per week, while MBSR consists of 2.5-hour sessions. While MBSR can be applied to larger groups, it is recommended that MBCT consists of a maximum of 12 people, especially in clinical applications. Since MBCT is applied in clinical settings and by clinicians, the psycho-educational process and theoretical information including cognitive processes and mechanisms in its content are more than MBSR. MBSR is more traditional and presented with applications, the theoretical part is more implicit (Atalay, 2021).

2.4.3. Acceptance and Commitment Therapy (ACT)

ACT is a psychotherapy model developed by Hayes, Strosahl, and Wilson in the late 1980s (Hayes et al., 2011). The aim of ACT is to increase the psychological flexibility of individuals by accepting negative emotions and thoughts without judgment, based on the concepts of conscious awareness and acceptance. ACT consists of processes such as acceptance, contact with the present moment, self, cognitive deficit, determined action, and values (Harris, 2022; Kul & Türk, 2020; Yavuz, 2015).

With ACT, unwanted emotions, thoughts, impulses and sensations are seen as guests and allowed to come and go. Being in touch with the moment and being conscious of the moment experienced is provided (Harris, 2022; Hayes et al., 2011; Kul and Türk, 2020). It allows individuals to determine their own value by choosing actions that are in line with their life values and to take action for this value. The person who takes action lives a more satisfying life when they achieve their goals (Harris, 2022).

2.4.4. Mindful Self Compassion (MSC)

Compassion is a term that refers to how to behave when suffering. Self-compassion is the directing of compassion towards oneself when faced with a life challenge, feeling inadequate, or making a mistake. In this way, a person

can deal with failures in a gentle and understanding way, instead of harshly judging and criticizing oneself for various inadequacies or flaws (Germer & Neff, 2019).

MSC is a program developed by Kristin Neff and Christopher Germer in 2010 as a combination of mindfulness and compassion training, personal development training, and psychotherapy. Learning to be self-compassionate is a process of progress towards embracing one's experiences and the person one is rather than trying to change oneself. The feelings of security and self-worth provided by self-compassion are more stable; at the same time, self-compassion plays a redemptive role in situations where one's self-esteem has decreased. MSC aims to put aside self-criticism, which reduces the quality of life, and to teach one how to be kinder to oneself (Germer & Neff, 2019; Han & Kim, 2023). When the literature was examined, it was found that the MSC program was effective in reducing depression, anxiety, and stress (Luo et al., 2023).

2.4.5. Mindfulness Based Childbirth Education (MBCE)

The MBCE program was developed by Fisher and colleagues in 2012 as a program that combines two distinct areas of evidence-based practice, skill-based education and mindfulness, to improve emotional functioning and well-being in pregnancy, birth, and early parenting. Parent-centered pedagogy guided the development of workshop-style sessions rather than didactic presentations about pregnancy, birth, and early parenting information. MBCE actively engages pregnant women and their partners during education through group work, role-playing, and decision-making (Fisher et al., 2012).

The 8-week program, consisting of 2.5-hour weekly sessions, includes a workbook and homework CD to guide potential parents in their daily practice of mindfulness meditation (Hauck et al., 2016; Shorey et al., 2019).

2.4.6. Mindfulness Based Childbirth and Parenting Program [MBCP]

Pregnancy is a remarkably dynamic period of growth and development that can present significant physical and psychological life challenges for

pregnant women and their partners. There is variability in how people respond to the same situations, and individual interpretations or assessments of chronic or acute stressors can shape the physiological stress response. When the developmental challenges of the transition to parenthood are evaluated as stressful and are not met with effective coping, expectant parents have the potential to pose risks to their own health and well-being, as well as the health and well-being of their developing child (Duncan & Bardacke, 2010). Learning about coping with stress and other challenging emotions from pregnancy onwards, receiving prenatal education, and receiving support during and after birth supports the parenting experience (Öztürk & Aydın, 2018) and is an important factor in increasing prenatal attachment and reducing anxiety, depression, and worry. One of the birth preparation programs created for this purpose is the Mindfulness-Based Birth and Parenting Program (MBCP) (Fındık et al., 2025).

in traditional birth preparation programs , is a guided and formal birth preparation program specific to the birth preparation and early parenting process developed by Nancy Bardacke in 1998 and adapted from the MBSR program, in order to contribute to both mothers and their partners experiencing this process in a more conscious, acceptance-oriented and compassionate way (Duncan & Bardacke, 2010).

The aim of MBCP is to improve the health and well-being of families by enabling parents to cope with challenging and stressful situations through mindfulness meditation practices during pregnancy, birth, and the first weeks of parenthood and to support expectant parents in preparing for birth and parenthood through mindfulness practices. The aim is to increase mental flexibility, stress coping skills, and awareness of parenting in the birth preparation process (Duncan & Bardacke, 2010; Shorey, 2019). Childbirth education and parenting practices are intertwined with MBCP training (Van der Meulen et al., 2023). Existing research has shown that MBCP reduces perceived stress levels and depressive symptoms in pregnant women and expectant fathers; It has been concluded that it increases positive mood, mindfulness skills, self-compassion levels, self-efficacy for parenting and body

awareness (Duncan and Bardacke, 2010; Duncan and Shaddix, 2015; Lönnberg et al., 2020; Lönnberg et al., 2018; Pan et al., 2019; Sacristan-Martin et al., 2019; Sarbandi, 2015). Mindfulness-based practices during pregnancy include protective skills that allow parents to better regulate their emotions during parenting and establish a secure relationship with their babies. MBCP practices applied starting from the pregnancy process are very important in improving the quality of parent-baby interaction in the postpartum period and positively affecting the child's development (Fernandes et al., 2022).

MBCP is a group education program consisting of 9 sessions, each lasting approximately 2.5 hours. Eight sessions are administered during pregnancy, while the last session is held as a postpartum meeting after all women have given birth. A full-day silent mindfulness retreat, approximately 7 hours, is also part of the program between weeks 6 and 7. Participants can begin MBCP at the end of the second trimester or the beginning of the third trimester. The recommended class size is 8–12 couples. Although the course is specifically designed for couples to attend together, pregnant women who are not partners or whose partners are unable to attend are also welcome to attend and may invite a support person if they wish. In addition to teaching mindfulness practice, a key element of the course is to foster a sense of community among parents in order to reduce the potential negative impact of social isolation on the mental health of new parents during the postpartum and early parenthood period. To this end, each class includes a 15-minute snack break to allow for relationship building among participants (Duncan & Bardacke, 2010).

In each session, formal mindfulness meditation training is provided, including sitting meditation, body scan, mindful yoga, and loving-kindness meditation, all designed to pay attention to the mental and physical aspects of pregnancy. Throughout the program, couples learn to observe their mental and emotional processes by practicing mindfulness-based practices both individually and together (Duncan & Bardacke, 2010). During the training, parents are taught formal and informal practices and are provided with the opportunity to practice them. Formal practices are structured and focused on a

specific period of time. They focus on meditation and include exercises such as body scan, sitting meditation, mindful movement (mindful yoga), breathing meditation, and compassion meditation. Informal practices are designed to develop the ability to maintain awareness during daily life activities, such as mindful walking, mindful eating, mindful teeth brushing, mindful listening, and communicating. These applications enable the integration of formal practices into life (Cigolla and Brown, 2011; Duncan and Bardacke, 2010; Goyal et al. 2014).

MBCP training consists of intertwined themes applied for 9 weeks. The first session includes getting to know each other, introducing awareness, sharing the training content, and mindfulness practices (breath awareness meditation, raisin meditation, being with the baby practice). The second session focuses on understanding labor, pain, fear, and hormones from a mind-body perspective, and mindfulness practices (body scan practice, breath awareness practice, being with the baby practice) are performed. The third session discusses methods for coping with pain, and mindfulness practices (body scan practice, pleasant events calendar) are performed. The fourth session covers the role of the spouse/partner during birth, pain management, and mindfulness practices (yoga practice, three-minute breathing break, unpleasant events calendar). The fifth session covers the needs of the newborn and new parents, secure attachment and baby development, and mindfulness practices (yoga practice, formal pain practice). The sixth session includes mindful communication and mindfulness practices (yoga practice, formal pain practice). A one-day silent meditation practice is applied between the sixth and seventh sessions. The seventh session included mindful breastfeeding, the effects of stress and anxiety on breastfeeding, and mindfulness practices (compassion meditation, yoga practice). The eighth session included reviewing the training, the importance of using mindfulness practices in the postpartum period, setting a reunion date, and ending the session with mindfulness practices (compassion meditation). The ninth session included meeting after birth and sharing birth and early parenting experiences and mindfulness

practices (endings and beginnings: last lesson) (Bardacke, 2017; Fındık et al., 2025).

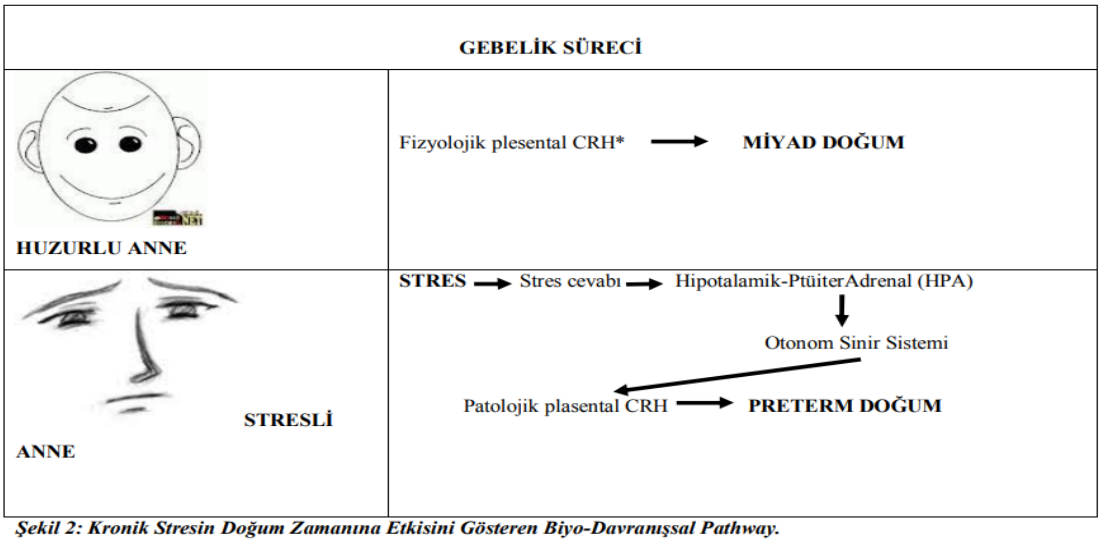
Throughout the course, parents are asked to practice meditation at home with guided meditation audio recordings for 30-45 minutes a day, 6 days a week (Duncan & Shaddix, 2015).

2.5. Conscious Awareness During Pregnancy

2.5.1. MBCP Training and Birth Experience (Pain, Fear, Self-efficacy, Self-compassion, Awareness)

Labor pain, a common but subjective experience, is a positive experience for some women, while for others it is the most painful and challenging event in their lives, causing much more intense pain than they expected (Boorman et al., 2014; Ngai and Xiao, 2021). Although labor pain is defined similarly to acute pain, it is different from acute pain (Madden et al., 2016). Labor pain has visceral components related to uterine contractions and cervical dilation, and somatic components resulting from distension of the pelvic floor, perineum, and vagina, and fetal descent (Labor and Maguire, 2008). The intensity of labor pain increases with increasing frequency and intensity of regular uterine contractions (Hu et al., 2021).

Uncontrollable severe labor pain poses a risk for both the mother and the newborn. Labor pain can evoke sympathetic activity and neuroendocrinal stress response, the hypothalamic axis can be stimulated, and pathological

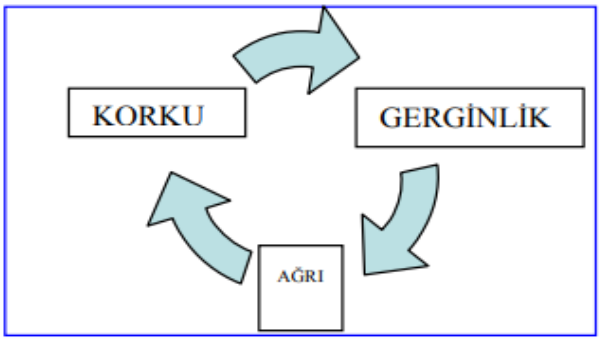


Şekil 2: Kronik Stresin Doğum Zamanına Etkisini Gösteren Biyo-Davranışsal Pathway.

*CRH = corticotrophin-releasing hormone

corticotropin-releasing hormone (CRH) secretion can lead to ineffective and maladaptive uterine contractions, leading to a more intense perception of pain. It can also prolong the duration of labor. These conditions can lead to a series of physiological conditions, including increased oxygen consumption, increased cardiac activity, hyperventilation, respiratory alkalosis, and metabolic acidosis (Ebirim et al., 2012; Koutras et al., 2021; Zagami et al., 2015). This, in turn, causes dystocia and labor complications, increasing the risk of perinatal mortality (Martínez-Burnes et al., 2021). Prolonged labor is the primary indicator for instrumental delivery or emergency cesarean section (Issac et al., 2023)

(Figure 2. Hormonal Effects of Stress on Birth. Mete, 2013).



Şekil 1. Doğumda Korku, Ağrı ve Gerginlik Döngüsü

Beyond clinically indicated cesarean delivery, labor pain itself has become an important factor in women's decision to have a cesarean delivery (Colomar et al., 2021). Reduced self-efficacy due to pain and fear leads to increased elective cesarean delivery (O'Connell et al., 2019) and complications such as maternal anesthesia complications, hematoma, infection, premature birth, low birth weight, respiratory distress in the newborn, delayed development of mother-infant bonding, and behavioral and neurological developmental delays in children may develop (Smith et al., 2019 **;** Huizink et al., 2003; Nicholls and Ayers, 2007; Accortt et al., 2015; Grigoriadis et al., 2018; Dencker et al., 2019; Faleschini et al., 2019; Grigoriadis et al., 2019; Nath et al., 2019).

Since labor pain is a process that cannot be fully controlled and predicted, it not only affects the physiological well-being of the mother and the newborn, but also has psychological effects such as fear of birth, anxiety, and post-traumatic stress disorder (Martínez-Burnes et al., 2021; Uçar and Gölbaşı, 2019). Therefore, effective management of labor pain is very important for women's health. Women experience fear, anxiety and negative birth experiences due to frequent vaginal examinations, induced labour, instrumental delivery, emergency and unplanned cesarean delivery and inadequate support system during birth, lack of trust, fear of the unknown (especially first-time mothers), negative experiences in previous births, feeling of lack of control and inadequate information about birth (Berhanu et al., 2022; Fenwick et al., 2015; Hosseini Tabaghdeehi et al., 2020; Imakawa et al., 2022). Based on a systematic review conducted by Nilsson et al. (2018) that included 24 articles measuring fear of childbirth in nine countries in Europe, Australia, Canada, and the United States, the authors found prevalence rates of fear of childbirth to be between 6.3% and 14.8%. In Turkey, one study found that women had a fear of childbirth of 42.4% (Gökçe İşbir et al., 2024), while another study found that women had a fear of childbirth of 82.6% and their husbands had a fear of childbirth of 54.3% (Serçekuş et al., 2020). Since childbirth is a physiological, psychological, and social event, it is normal for rates to differ between countries (Huang et al., 2021). Despite the increasing fear of childbirth and the parallel increase in elective cesarean section rates, the World Health Organization has called for a reduction in non-emergency obstetric interventions (WHO, 2018). At the same time, high fear of childbirth also affects adaptation to pregnancy and mother-baby bonding (Golmakani et al., 2021; Challacombe et al., 2021).

High rates of fear of childbirth are reported to be due to labor pain. A prospective cohort study showed that women with higher fear of childbirth tended to experience more intense labor pain and were more likely to choose epidural analgesia and elective cesarean section (Haines et al., 2012). Additionally, cognitive factors such as fear, anxiety, and self-efficacy (e.g., belief in the ability to successfully manage labor pain) may influence women's

perception of labor pain (Asselmann et al., 2021; Whitburn et al., 2019). Transforming the cognitive functions of childbirth from a challenging and threatening event to a productive and satisfying experience may help women cope with the pain of childbirth (Whitburn et al., 2019).

Women's ability to recognize their perception of labor pain appears to be a factor that can affect a positive pregnancy and birth experience (Hulsbosch et al., 2021 **;** Oskoui et al., 2023). **It has** been reported that preparation with awareness from pregnancy to birth increases control during birth (Fisher et al., 2012), awareness levels (Duncan, 2017; Pan et al., 2019) and self-efficacy (Byrne et al., 2014; Pan et al., 2019 ; Rasmusson, 2022). It has been hypothesized that increased mindfulness reduces fear of childbirth (Byrne et al., 2014; Veringa-Skiba et al., 2022) and acts as a protective buffer against negative perceptions of childbirth (Hulsbosch et al., 2021; (Lönnberg et al., 2020).

The implementation of mindfulness-based programs such as MBCP in the perinatal period is also recommended by the National Institute of Health and Clinical Excellence (NICE) guidelines (NICE, 2009). MBCP training increases self-confidence and reduces fear of birth, provides access to deep inner resources to cope with pain, improves communication, connection and collaboration between couples, and provides stress-reducing skills for greater joy and well-being (Mindfulbirthing, 2025). In this way, the person can have a positive birth experience by trusting their strength and ability to give birth together with their support systems (Karsltrom et al., 2015). Women who act with mindfulness can have a more positive birth experience (Hulsbosch et al., 2021).

Evidence has shown that mindfulness-based programs facilitate women's ability to overcome adverse situations by increasing awareness and improve perinatal mental health markers (Lönnberg et al., 2020; Oyarzabal et al., 2021). The potential benefits of these programs extend to the birth itself. Feelings of being overwhelmed by pain, fear of not being able to cope, or fear of losing control are commonly reported by women during labor. Conversely,

there are women who are able to manage their pain during labor without the need for analgesia. These women appear to have more positive experiences than those who are resistant to labor pain. These experiences describe the phrases “going with the flow,” “an emotionally transformative experience,” “being in the moment,” “being present,” “working with the pain,” and “pain is your friend instead of your enemy” (Walsh, 2007; Walsh, 2008; Walsh & Byrom, 2009; Leap, 2008). When the literature is examined, the MBCP program has been reported to have outcomes such as reducing the fear of anticipated birth, paying attention to present-day experiences during birth, increasing acceptance of labor pain, reducing non-emergency obstetric interventions , increasing psychological well-being levels, and higher birth satisfaction (Abdolalipour et al., 2023; Van der Meulen, 2023). At the same time, it was found that women increased their vaginal birth rates, experienced less labor pain, and therefore used less analgesic medication (Veringa-Skiba et al. 2021a, Oskoui et al. 2023).

An important indicator of women's coping skills during labor and birth is childbirth self-efficacy. Therefore, increasing self-efficacy during childbirth is extremely important. Studies have shown that psychoeducational interventions such as MBCP statistically improve childbirth self-efficacy and alleviate pregnant women's fears about childbirth (Toohill et al., 2014; Duncan et al., 2017; Byrne et al., 2014; Tanke et al., 2025). Studies have found that mindfulness-based interventions applied to women in the perinatal and postnatal period increase the levels of mindfulness, self-compassion, and psychological well-being (Byrne et al., 2014; Pan et al. (2019), Duncan and Bardacke (2010) and Duncan et al. (2017) found that women's awareness and childbirth self-efficacy levels increased significantly as a result of MBCP training. It is known that childbirth preparation training, especially for first-time mothers, increases birth success and maternal satisfaction (Gottfredsdottir et al., 2016; Wang et al., 2023). Shorey et al (2019) systematically reviewed studies evaluating both the physiological and psychological effects of mindfulness interventions implemented in pregnancy education classes to improve maternal outcomes and found that the mindfulness intervention

implemented by nurses in pregnancy education classes had positive effects on maternal well-being.

In a study of women who received MBCP training, significant improvements in mindfulness levels were seen, and this level of mindfulness continued to increase six weeks after the completion of the intervention (Beattie et al., 2017). Pan et al. (2019a), Zarenejad et al. (2020), Lönnberg et al. 2021, Veringa-Skiba et al. 2022b, Zhang et al. 2023b , Warriner et al., 2018 and Guo et al. (2020) The study also supports the increased level of awareness. Negative emotions during pregnancy have a strong negative impact on the quality of life of pregnant women, while positive emotions and an optimistic attitude are associated with increased quality of life and self-compassion (Lagadec et al., 2018). In the study conducted by Hulsboch et al. (2023), it was found that the levels of conscious awareness and self-compassion increased significantly as a result of the training given to pregnant women with high symptoms of depression and pregnancy distress.

Partners may also experience fears related to the effects of birth on their partner's well-being and their partner's death during childbirth (Hanson et al., 2009). Mindfulness-based training increases the psychological and spiritual well-being of women and their partners and improves the birth experience (Shorey & Ng, 2020). A study found a significant difference in the mean mindfulness scores of fathers who received MBCP training before and after the training (Sian Warriner, 2018).

2.5.2. MBCP Education and Delivery Method

There is a need for policies and practices to be developed within the scope of the statement of the World Health Organization, which has been saying for almost 30 years that “there is no justification for the cesarean rate to be above 10-15% in any region”, and it is anticipated that studies to be conducted within this framework will contribute to the literature. Cesarean section constitutes more than 1 in 5 of all births worldwide (21%), and this number will continue to increase in the coming years, and approximately one-third of all births (29%) will be by cesarean section by 2030 (WHO, 2021). The

total number of births recorded in Türkiye between 2018 and 2023 was 6,161,976, and the cesarean rate was 57.55% (National Health Data, 2023). The cesarean rate determined per 1000 live births in Türkiye was reported as 573, making it the country with the highest cesarean birth rate in Europe (OECD, 2023). The increasing fear of childbirth worldwide (Nilsson et al., 2018) may be a contributing factor to the increasing cesarean requests globally (Olieman et al., 2017; Smith et al., 2019; Vogel et al.,2015). Induction of labor, emergency cesarean, elective cesarean, and instrumental delivery are more common in women with severe fear of childbirth (Mortazavi and Agah, 2018).

There are two opposing behavioral responses to fear of childbirth: avoidance and approach (Veringa et al., 2016). An example of avoidance, which is a maladaptive and harmful behavior, is when women request a cesarean section due to fear of childbirth. This behavioral response is strongly supported by empirical findings showing that women with high fear of childbirth are more likely to request interventions such as cesarean section or epidural anesthesia (Dencker et al., 2019; Badaoui et al., 2019). They also hold myths about labor pain (Rondung et al., 2019; Kwissa-Gajewska and Dołęgowska, 2017) and focus on potentially threatening aspects of childbirth (Kwissa-Gajewska and Dołęgowska, 2017; Veringa et al., 2011). On the other hand, balanced emotions, realistic beliefs, increased awareness, and approaching birth difficulties with positive emotions lead to more adaptive behaviors for natural birth to occur (Veringa et al., 2016).

Women's perceived low self-efficacy, or their confidence in their ability to handle certain situations, is another important reason for wanting to have a cesarean delivery (Soltani et al., 2017). While people with high self-efficacy fantasize about success, those with low self-efficacy visualize failure and focus on what could go wrong (Bandura, 1997). Given the difficulties of childbirth for women, MBCP training is particularly helpful in approaching rather than avoiding the challenges of natural birth (Veringa et al., 2011). In studies of MBCP applied to pregnant women with high levels of fear of childbirth, it was found that women in the intervention group had a better birth experience (Van der Meulen et al., 2023; Hassanzadeh et al., 2021; Hong et al.,

2021), increased vaginal birth rates (Veringa-Skiba et al., 2022a, Veringa-Skiba et al., 2022b; Guo and Lei, 2022; Zhang et al., 2023; Hassanzadeh et al., 2021; Hong et al., 2021), had less labor pain and therefore less analgesic use (Veringa -Skiba et al. , 2022a; Hassanzadeh et al., 2021; Hong et al., 2021), and gave birth with less medical intervention. (Veringa-Skiba et al., 2022). The results of these studies suggest that awareness interventions can be effective in increasing natural birth rates. The World Health Organization (2018) has also emphasized the need for non-clinical interventions to reduce cesarean sections.

2.5.3. MBCP Education and Maternal/Paternal Attachment

Parental love and care are fundamental to optimal child development. Maternal health, behavior, and well-being during pregnancy shape fetal growth and provide a foundation for the child's lifelong physical, social, and emotional development (Berg, 2016; Armstrong-Carter, 2020). By implementing strategies (redirecting attention, providing reassurance during distress), a caring parent develops their infant's capacity to understand and self-regulate emotions, adjust their behavior, be empathetic, and establish and maintain relationships with others (Rutherford et al., 2015; Behrendt et al., 2019). Nurturing compassionate feelings and thoughts toward the infant supports the child through healthy prenatal behavior (Lindgren, 2001) and positive parenting after birth (Medina et al., 2021).

Attachment describes the emotional bond between parent and child. It is the first relationship in which a newborn baby develops a sense of trust (Lang, 2018). The first study in history on attachment experiences that are passed down from generation to generation through narrative was conducted by Bolby (Bowlby, 1969). Mary Ainsworth stated that in order for newborns and young children to be able to maintain healthy interactions and relationships with the external environment in an unfamiliar environment and to be ready for this, they must first establish a bond of trust with their families and be sure of this trust relationship (Ainsworth, 1979).

Attachment is not a situation in itself but a process. In this process, parents are affected by their own upbringing styles as well as their experiences during pregnancy, birth, puerperium and the first months of infancy. In a

biological sense, the bond between parents and their children is the most important and strongest bond in a person's life. The strength of the attachment depends on the newborn's lack of ability to meet their own needs. The bond between the parent and child becomes so strong that it allows them to fulfill all the sacrifices required for child care (Lang, 2018). A successful parent-child relationship affects the child's social, emotional and cognitive development in later life, which in turn affects the child's relationship with their own child. The way the newborn is cared for and raised will determine how they will care for their own child in the future (Murray, 1993 ; Stanley et al., 2004).

The body protects the mother and baby from great pain by secreting its own opiates and endorphins during birth and prepares the ground for bonding. Thus, good birth support develops in coping with pain during birth and assumes a key role in bonding (Lang, 2018). The highest beta-endorphin level is reached after vaginal birth without analgesic intake (Vogl et al., 2006). If analgesics are given during birth, the body's own endorphin secretion is suppressed and the secretion of hormones necessary for bonding by the mother and baby is prevented. Effective contractions cannot occur and serotonin and noradrenaline are suppressed, increasing the level of pain perception. In epidural anesthesia applications where labor contraction pain is absent, oxytocin release in the blood is low. The low number of oxytocin receptors, which is the bonding hormone, also prevents mother-baby bonding (Lang, 2018). Studies have also found high oxytocin levels in fathers in the postpartum period. This supports the father's bonding with the baby (Lang, 2018; Bowen and Miller, 1980). Changes begin to occur in the hormonal balance of men due to living with their partners during pregnancy. It is believed that body odors, also called pheromones, emitted by pregnant women are responsible for this situation. It has been proven that prolactin, cortisol and estrogen levels increase in the salivary secretions of fathers in the pre- and post-natal period. All three hormones support maternal care and bonding. For this reason, testosterone levels of fathers were found to be significantly lower in the first weeks after birth (Lang, 2018; Hüter, Krens, 2005). Fathers who attended the training together with mothers felt more confident and secure about baby care after

birth. They participated more actively in the care and upbringing of the child, played more with their children, exercised more control and made learning suggestions to their children with more emotional attention (Wöckel et al., 2007).

Neurobiologists, behaviorists, psychologists and stress researchers draw attention to the results of their studies that mental development begins in fetal life. The fetus can respond to stimuli given through the abdomen during pregnancy. Many fathers state that the fetus slides under their hands when they touch the mother's abdomen. Babies can perceive the voices of their mothers and fathers before they come into the outside world. The fetus has the ability to learn before it is born and its brain development continues in parallel with its experiences (Lang, 2018). The fetus also has the ability to be emotional. Thanks to maternal fetal circulation, it is affected by the mother's stress hormones as well as the release of oxytocin and endorphins. In other words, it can learn different emotions by being affected by the mother's emotional state. When a woman experiences and copes with all human emotions during pregnancy, she teaches this to the baby in her womb and enables it to gain emotional competence (Deyringer, 2008; Lang, 2018).

Attending childbirth preparation courses is a good start to establishing a relationship with the newborn. Couples are preparing for the unborn baby, the birth and the first days they will spend with the baby after birth. Even experiencing this situation encourages bonding. In childbirth preparation courses, health professionals can provide bonding by having families do practices such as guiding journeys to feel their babies. For example; “Can you feel your baby under your hands? Is he/she moving or sleeping right now? Now imagine the inside of your belly, this is your baby’s house right now. Now go to your baby in your thoughts and tell him/her: when the time comes and you want to be born, I will help you, I will open myself and push you out of me.” In this way, parents can be directed to talk to their unborn babies regularly. At the same time, childbirth preparation courses provide an opportunity for expectant mothers and fathers to share information and experiences in terms of different interactions and seeing that similar fears and anxieties are actually

normal and that many families experience this. In studies, parents who came to childbirth preparation classes were given certain practices to establish contact with their babies, and after the practices, these mothers showed signs of attachment such as a significantly better prenatal relationship with their babies, being able to better recognize their babies' needs after birth, enjoying breastfeeding and cuddling their babies, and talking to their babies more after birth (Bellieni et al., 2007; Eckstrom and Nissen, 2006).

Becoming a parent adds new roles and responsibilities to an individual's life. While most people see parenthood as a meaningful part of life, some experience parenthood as a stressful and difficult period (Martincs, 2019). Mindfulness teaches individuals to regulate their emotions during the parenting process, to accept the roles and responsibilities of parenting with a non-judgmental attitude, and to use mechanisms to cope with the stress of parenting (Corthorn & Milicic, 2016), and it also allows the individual to show compassion to themselves and their child (Duncan, Coatsworth, Greenberg, 2009). Pregnancy is seen as a period of psychological and emotional preparation for parenthood (Van Vreeswijk, Broersen, Schurink, 2014). Prenatal attachment, which begins during this period, affects the formation of parents' attachment and attachment styles in the postpartum period (Hicks et al., 2018; Fernandes et al., 2022; Gioia et al., 2023; Howland et al., 2020). Children of mothers who reported quality attachment during pregnancy and up to 12 months after birth had an easier temperament (Davies et al., 2021; Capelli et al., 2023) are reported to be less angry and more cooperative (McDonal et al., 2022), and not socially shy children (Le Bas et al., 2022).

MBCP training may be potentially effective in improving parent-child attachment for pregnant women and their partners (Duncan and Bardacke, 2010; Veringa et al., 2014; Duncan and Shaddix, 2015; Lonnberg, 2018; Teskereci et al., 2021; Sansone et al., 2024). MBCP training may facilitate healthy parent-child attachment by promoting present-focused, non-judgmental mindfulness and compassion, allowing parents to accept challenging pregnancy-related symptoms or life experiences without judgment and attributing them to the unborn child (Duncan and Shaddix, 2015). Studies

have suggested that participation in a prenatal MBCP program may help pregnant women develop a positive and meaningful relationship with their babies (Beattie et al., 2017; Körükcü and Kukulu, 2017; Kantrowitz-Gordon et al., 2018). Additionally, two qualitative studies (Duncan and Bardacke, 2010; Lonnberg et al., 2018) and a study protocol (Veringa et al., 2016) suggested evaluating the effects of MBCP training on maternal attachment. A qualitative study reported that participation in an antenatal MBCP program may contribute to women's acceptance of maternal emotions as an effective strategy to cope with stressful situations (Roy Malis et al., 2017) and significant improvements in maternal sensitivity were observed (Potharst et al., 2017).

Negative repetitive thoughts due to high levels of anxiety and fear can negatively affect parents' feelings towards the fetus. (Schmidt, 2017; Özcan et al., 2019 ; Özdemir et al., 2020 ; O'Dea et al., 2023; Jacka et al. 2013, Liu et al. 2022b). Parent-infant bonding begins during pregnancy (de Waal et al., 2024; Le Bas, 2021; Tichelman et al., 2019) and that maternal awareness developed through education during pregnancy can promote more positive feelings towards the fetus and promote prenatal and postnatal mother-infant bonding. Evidence is provided that (de Waal et al., 2024; McDonald et al., 2022; Brassel et al., 2020; Gheibi et al., 2020; Shreffler et al., 2019; Golmakani et al., 2021 ; Öztürk and Erci, 2016). At the same time, families with high levels of parent-infant attachment reported fewer social and emotional problems in their children in later periods **(** de Waal et al., 2024) . The level of mindfulness that developed during pregnancy has been associated with better maternal mental health (Hulsbosch et al., 2022) and better attachment quality in the 3-18 months after birth (McDonald et al., 2022; Brassel et al., 2020). In the study by Fındık et al. (2025), it was observed that MBCP significantly increased prenatal attachment compared to routine prenatal education. In the literature, many sources emphasize that birth and parent-focused awareness programs can support maternal-fetal attachment (Duncan and Bardacke, 2010; Duncan and Shaddix, 2015; Lönnberg et al., 2018; Veringa et al., 2016). However , apart from the study by Fındık et al. (2025), only one study was found examining the claim regarding the effect of MBCP on attachment. This study, similar to the

study by Fındık et al. (2025), showed that maternal-fetal attachment increased significantly after the intervention in women who participated in the MBCP program compared to women who received routine prenatal care (Gheibi et al., 2020). MBCP appears to have a positive effect on maternal-fetal attachment. However, more evidence is needed on this subject.

As parents experience birth differently, it is important to consider fathers' experiences (Belanger-Lévesque et al., 2017). Fathers have been increasingly present at the birth of their babies since 1990 (Draper, 1997; Johansson et al., 2012a; Plantin, 2007). Being present at birth has been associated with more emotionally connected, mature fatherhood and has been described as beneficial to the health of fathers, their partners and their children (Johansson et al., 2012a; Plantin, 2007). Fathers play a key role in pregnancy and birth, and this role can strengthen the couple's relationship and facilitate bonding with the baby (Zhang et al., 2020; Calister, 1995; Johansson et al., 2012a). Fathers' involvement in children's lives is associated with a variety of outcomes, including improved cognitive function and mental health (Allport BS 2018). First-time fathers appear to need more information about the birth process, including a tour of the delivery room, compared to those who have had children before (Eggermont et al., 2017). First-time fathers experience a variety of emotions, including anxiety, due to the unknown they will experience (Labrague et al., 2013).

Mindfulness interventions can be offered to parents to strengthen the parent-infant bond and improve infant outcomes after birth (de Waal et al., 2024). Therefore, learning about coping with stress and other challenging emotions from pregnancy onwards, receiving education, and receiving support during and after birth are important in supporting the parenting experience (Öztürk & Aydın, 2018). These mindfulness practices can continue as a life skill in parenting and may benefit parental emotion regulation and the parent-infant relationship (Duncan & Bardacke, 2010).

2.5.4. MBCP Training and Postpartum Adjustment

The postpartum period is an important developmental transition period in which physical, social and emotional changes occur in the family. During this process,

the mother and father need to prepare and adapt to new roles and responsibilities due to the addition of a new member to the family. In the postpartum (PP) period, the father and mother need to adapt to the physiological and psychological changes they experience, the role of motherhood, accept their baby and gain the necessary knowledge and skills to care for themselves and their baby when they go home. During this period, it is important to determine the needs of the mother and the baby and to provide care, education and consultancy services in line with these needs (Taşkın, book; Vural and Akan, 1995). In the postpartum period, women try to cope with postpartum discomfort and changes in body image, and get used to the fact that the pregnancy has ended. This period is also the period of transitioning to a family with children and adapting to being a mother (London et al., 2003). In the postpartum period, women experience the process of attachment to the role of motherhood, which is a developmental and interactive process. During this process, the new mother learns motherhood behaviors and accepts her identity as a mother (Mercer, 2006). Lederman and Lederman (2009) determined that the woman's preparation for the role affects postpartum adjustment and satisfaction with the role of motherhood. In a different study, it was found that women with high prenatal adjustment also have high postpartum adjustment. Women with high adjustment are more prepared for birth, have more control in their birth experiences, have better spousal relationships, and their husbands are more likely to participate in baby care. The study also found that women who took on the role of motherhood better during pregnancy had higher self-confidence in coping with maternal duties in the postpartum period, higher satisfaction with life, and higher satisfaction with the role of motherhood (Kiehl & White, 2003). Similarly, Shin, Joo-Park, and Kim (2006) found that mothers who had a stronger bond with their babies during pregnancy had an easier time accepting their maternal identity in the postpartum period.

> Pregnancy, birth, and motherhood are challenging processes that require adaptive responses to maintain the mother's mental health, establish a relationship with the baby, and adapt to a new role (McLeish and Redshaw, 2017). According to Mercer (2004), maternal role adaptation is characterized by "an event in which the mother bonds with the baby and feels harmony, self-confidence, competence, pleasure, and satisfaction from performing tasks

related to child care and the establishment of a maternal identity." The first year after birth is the most challenging period in the process of adapting to the maternal role, especially for new mothers (Slomian et al., 2017), and it is during this period that a woman begins to connect the maternal role to her personality (Asadi et al., 2021).

The maternal role is influenced by many factors, including variables related to the mother, child, and social environment. The mother's problems in balancing her roles as a wife, mother, and employee are related to a general sense of inadequacy, and role conflict is the most important predictor of maternal role acquisition in this context (Ahmadpour et al., 2022). Given the close relationship between a child's physical and psychological health and the mother's health, improving the mother's mental health can play an effective role in protecting the health of the family and society (Frosch et al., 2021). Mothers who cannot adapt appropriately to their roles will have reduced maternal function, especially in terms of their attachment to the child, and thus increase the risk of exposing the child to developmental delays (Khandan et al., 2018). Since infant development is sensitive to the quality of mother-infant interaction, infancy (0-12 months) is a good time for healthcare providers to assess and improve maternal role adaptation (Rayce et al., 2017). The implementation of interactive and reciprocal interventions by health care professionals is one of the most important ways to promote maternal role acquisition (WHO, 2020).

Parent education programs have been shown to have positive effects on the development of secure attachment, the development of reflective functioning of parents in infancy and childhood, and the psychosocial well-being and empowerment of parents in terms of the co-parenting relationship (Izett et al., 2021). Some studies have provided evidence for the effect of using methods such as self-efficacy and self-confidence-enhancing strategies on improving maternal role adaptation (Azmoude et al., 2014 , Fasanghari et al., 2019).

It is widely accepted that adapting to any new role, including the transition to parenthood, is often accompanied by stress, and this stress can lead

to certain difficulties in adapting to new roles (Izett et al., 2021 ; Kim, 2021). Previous studies have reported that trainings such as MBCP have beneficial effects in reducing anxiety and stress and supporting psychological well-being in mothers during pregnancy, childbirth, and the postpartum period in clinical settings (Shi and MacBeth, 2017). In addition to supporting maternal mental health, increasing mindfulness can improve social and psychological development and facilitate adaptation. Increased mindfulness has been found to increase self-confidence and self-esteem in breastfeeding mothers (Perez-Blasco et al., 2013), improve mothers' mental health, and have a positive effect on reducing problems related to mother-infant adaptation (Potharst et al., 2017). In another study on MBCP training, a significantly higher increase in the awareness scores of the mothers in the intervention group during the follow-up period was observed, indicating that the application of MBCP training had a positive effect to support this process (Sajadian et al., 2022).

Mindfulness is also associated with improved parental satisfaction with their new roles as parents (Duncan & Bardacke, 2010). Increased conscious awareness leads to a better parent-child relationship (Orue et al., 2020). Mindfulness practices can support the adjustment process in the postpartum period and adaptation to new parenting roles. These practices help parents cope with the challenges they face after birth and allow them to easily adapt to increased responsibilities (Dimidjian et al., 2016).

2.6. WOMEN'S HEALTH NURSING AND CONSCIOUS AWARENESS

Mindfulness is a new concept emerging in the health care and research communities that has shown significant value for holistic health promotion, but is relatively underdeveloped in nursing. The concept of mindfulness has similar theoretical perspectives to holistic nursing practice and needs conceptual clarification for further development in the discipline. The concept of mindfulness encompasses a complex set of interconnected attributes: It is a transformative process in which a person increasingly experiences awareness, acceptance, and mindfulness. Mindfulness can support improved physical, emotional, psychosocial, and spiritual well-being and can help translate holistic health promotion from theory to practice. Integrating mindfulness into

education and practice can enhance therapeutic nursing skills and support the transition from a purely theoretical form of knowledge acquisition to a more concrete and holistic knowledge . Through access to education, nurses can gain personal experience of being mindful and applying mindfulness, and thus have the tools to promote holistic health practice in a variety of clinical settings and healthcare communities. As an emerging concept in nursing, mindfulness has great potential to support practitioners and, by extension, the healthcare communities they serve. However, rigorous methodological research designs are needed to ground this concept in nursing practice. There are important gaps and directions that nursing can explore to contribute to the science of mindfulness (White, 2014).

It is known that conscious awareness interventions provide improvements in the emotional and social well-being of healthcare professionals and increase the quality of healthcare (Conversano et al., 2020; Kriakous et al., 2021), and it is noteworthy that they are also being implemented in the field of women's health (Aghamohammadi et al., 2022; Kuo et al., 2022; Van der Meulen et al., 2023).

The use of mindfulness-based interventions is increasing day by day and its clinical benefits are proven by studies. In the light of current data, high-level evidence-based studies have been found that show that mindfulness-based interventions are an effective method that women can use to combat stressors in every period of their lives. In the light of these studies, it can be said that the method can be used in women not only to reduce stress but also as an effective method with physiological benefits. It is recommended to increase basic-level mindfulness training for nurses, to include mindfulness-based interventions in care, to develop intervention programs for problems specific to women's life periods by providing the necessary collaborations, and to evaluate their results (Bilgiç and Can Gürkan, 2021).

In order to better understand these effects of MBCP, multicenter, larger sample and repetitive studies on the subject are recommended to establish the evidence base. In addition, studies are recommended to evaluate maternal

mood and mother-infant bonding in the postpartum period and their impact on child development. A large number of factors that may affect this area can be included in future studies. For example, studies that evaluate the impact of paternal mood and couple relationships on maternal mental health, mother-infant bonding, and even child development and health economic assessments will contribute to a more comprehensive understanding of the subject.

Nieminen and colleagues (2017) compared the healthcare use and costs of 43 women with severe fear of childbirth with those of 107 women with severe fear of miscarriage. They found that, on average, women with severe fear of childbirth used more healthcare resources and had higher societal costs. More specifically, postpartum costs, including longer delivery room stays and sick leave costs, were higher, suggesting that societal costs could be reduced if severe fear of childbirth could be effectively managed.

Women's health nurses fulfill their role of education and counseling by being with the pregnant women and their partners during the pre-pregnancy, pregnancy and post-pregnancy processes and reflecting the most up-to-date evidence in their care (Erickson et al., 2017).

Birth is a physiological event, but it is also related to managing pain, happiness, and expectations regarding birth. This can sometimes lead to women being alone during the process (Dereje et al., 2023). At this point, women need care services that allow them to share their feelings and express their expectations (Wigert et al., 2020). Negative birth experiences should be addressed by increasing women's awareness, identifying negative experiences in prenatal care, and providing the necessary prenatal care (Massae et al., 2021).

in maternal and infant health, take action with evidence-based practices to reduce fear of childbirth, encourage natural birth, and improve negative pre-pregnancy, pregnancy, and post-pregnancy outcomes caused by fear (Souto et al., 2022). Considering the increasing rates of elective cesarean sections in developed countries, interventions for fear of childbirth have become more important. The negative effects of cesarean section on both maternal and infant

health and the damage it causes to the health system due to increased costs are clear (Weaver et al., 2012). For all these reasons, the inclusion of awareness-based interventions such as MBCP in childbirth preparation class education programs not only aims to reduce the increasing cesarean section rates, but also aims to provide awareness that women and their partners can benefit from not only during pregnancy, birth, and parenthood, but throughout their lives.

3. MATERIALS AND METHODS

3.1. Research Design

In this research The experimental design of the quantitative research method was used. Quantitative research is a research that involves the process of observing and measuring numerical values objectively and systematically in order to obtain information about the current situation and facts, and the measurements can be repeated (Burns and Grove, 1993). Quantitative research focuses on the relationships and differences between variables, makes predictions about the future and has the aim of generalization (Başol, 2008). In

quantitative research based on the positivism approach, hypotheses are clearly determined and tested (Fraenkel and Wallen, 2006).

Since the study examined the effects of awareness-based parenting and childbirth preparation training given in the childbirth preparation class on maternal-paternal attachment, birth parameters and postpartum sleep of a sample group that had the power to represent the universe, an experimental design with a pre-test and post-test control group was used in this study (Büyüköztürk, 2007).

3.2. Universe and Sample of the Research

The universe of the study consisted of pregnant women who applied to the Pregnancy School and Pregnancy Polyclinic of Kayseri City Education and Research Hospital between June 1 and September 1, 2023. The number of pregnant women who attended the Pregnancy School in these three months was approximately 130, and the number of pregnant women who applied to the Pregnancy Polyclinic was 900. In determining the number of pregnant women to be included in the sample of the study, in the study of Duncan and Bardacke (2010), the mean difference of pre and post Mindfulness values (0.30) was taken as basis, and 95% confidence (1-α), 95% test power (1-β) and d=1.111 effect size were calculated with the Gpower program and as a result of the paired samples t test, it was found that a total of 13 couples should be included in the study (Figure 1). It was anticipated that there may be data losses in the study and at least 15% more couples should be included. Therefore, 26 couples will be included in the study. In the study, couples were assigned to two groups using a web-based randomization program (https://www.randomizer.org) according to the following randomization list (Figure 2). The first 13 assignments in the randomization list constitute the intervention group participants, and the last 13 assignments constitute the control group participants. The sample group consists of 26 couples who were selected between June 1 and September 1, 2024 , met the inclusion criteria, and accepted

the study . The trainings were provided between September 2024 and November 2024.

Figure 1. *Number of samples calculated with G*Power program*

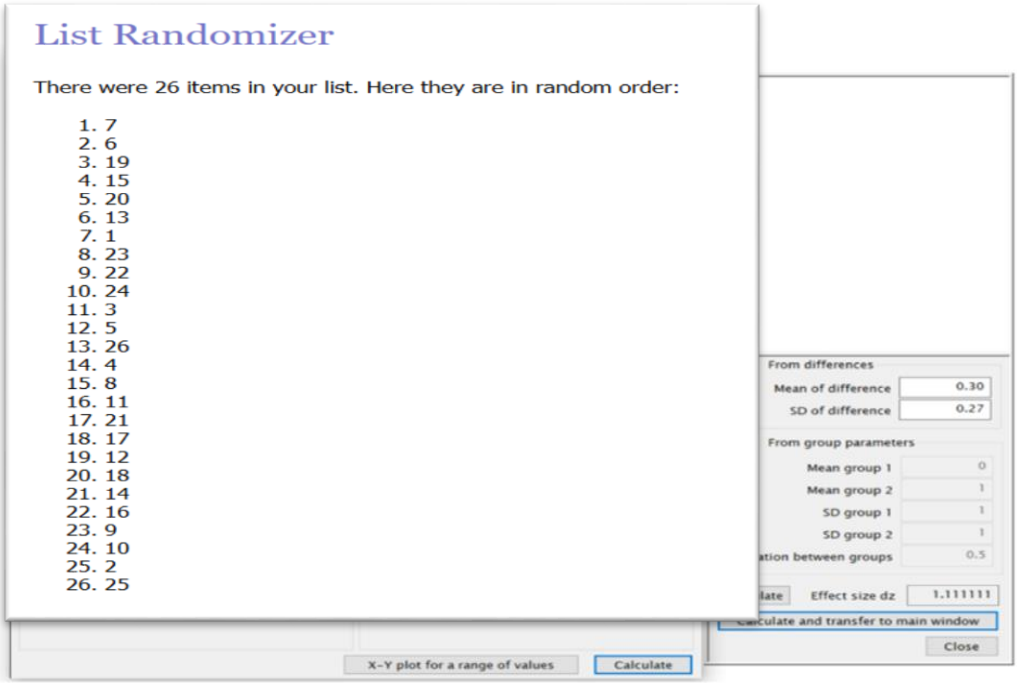


Figure 2. *Randomization list of groups*

3.3. Location and Characteristics of the Research

The study was conducted in the Pregnancy School and Pregnancy Polyclinic of Kayseri City Education and Research Hospital. There is one pregnancy school and 10 pregnancy polyclinics in Kayseri City Hospital. The pregnancy polyclinics and pregnancy school provide service in the Gynecology and Obstetrics building. The polyclinics are on the ground floor of the Gynecology and Obstetrics building, and the pregnancy school provides service on the third floor. There is a doctor and a secretary in each pregnancy polyclinic. Each pregnancy polyclinic provides service to an average of 60 pregnant women per day. Two midwives provide training in rotation in the pregnancy school. Pregnant women who are 24 weeks pregnant and over can attend the pregnancy school. Training is provided at different hours for pregnant women who are hospitalized and pregnant women who come from outside. Training is provided in the morning for pregnant women who are hospitalized, and in the afternoon for pregnant women who come from outside. Training lasts 1 week, 5 days a week and 3 hours per day for a group.

Kayseri City Training and Research Hospital Pregnant School Education Plan:

Monday: Education is given about introductions and expectations, the pregnancy process, the physiology of pregnancy, the formation of pregnancy, fetal development, physiological and psychological changes that occur during pregnancy, daily life during pregnancy and individual preparations during pregnancy, followed by practical breathing exercise training.

Tuesday: Education is given about perception of birth, normal labor, signs of birth, massage methods, breathing exercises, skin-to-skin contact and safe birth, followed by practical breathing exercise training.

Wednesday: Training is given on the postpartum period, breast milk and breastfeeding techniques, newborn care, family planning methods, followed by practical breathing exercise training.

Thursday: Affirmations, focusing on positive birth, subconscious work, and sleep meditation are done.

Friday: Pregnancy Pilates is done. Pregnant women who have received at least three sessions of training at the pregnancy school can participate in the pilates practice.

Those with risky pregnancies and those with systematic and chronic diseases cannot participate in pregnancy pilates.

3.4. Variables of the Research

Independent Variables: Sociodemographic characteristics (age, education level, occupation, economic status, etc.), pregnancy-related characteristics (gestational week, birth method preference, etc.)

Dependent Variables: Maternal-paternal bonding, birth parameters and postpartum adjustment scores

Intervention variable: Mindfulness-Based Parenting and Childbirth Preparation Education

3.5. Inclusion and Exclusion Criteria for the Study

Research Inclusion Criteria

- Those who are in the 18-35 age group,
- First pregnancy,
- In the 24-28th week of pregnancy,
- Those accepted to the Pregnancy School training during the research period,
- At least literate education level and
- People without communication barriers were included in the study.

Exclusion Criteria from the Study

- Those with psychiatric disorders,
- Pregnant women with pregnancy-related risk factors that may lead to premature birth,

- Pregnant women with chronic diseases that could lead to a risk of premature birth were not included in the study.

3.6. Data Collection Tools

In the prenatal period ; Parent Introduction Form, Conscious Awareness Scale (Özyeşil et al., 2011), Prenatal Attachment Scale (Türkmen Çevik & Kurnaz, 2018), Prenatal Father Attachment Scale (Benli & Aksoy Derya, 2019), Fathers' Fear of Childbirth Scale (Calpbinici et al., 2023) and Wijma Childbirth Expectation/Experience Scale A Version (Körükcü et al., 2009) were used.

In the postpartum period ; Wijma Birth Expectation/Experience Scale Version B (Körükcü et al., 2014), Postpartum Self-Assessment Scale (Taşçı & Mete, 2010), Father-Infant Attachment Scale (Güleç & Kavlak, 2013) and Maternal Attachment Scale (Kavlak & Şirin, 2009) were used.

3.6.1. Parental Identification Form (ETF)

The ETF, created by the researcher, is a data collection tool consisting of 16 questions to examine the obstetric history, pregnancy and birth preferences and sociodemographic characteristics of pregnant women and the sociodemographic characteristics of fathers (Appendix-1).

3.6.2. Conscious Awareness Scale (CAS)

The English version of the “Mindful Attention Awareness Scale (MAAS)” was developed by Brown and Ryan (2003) and its Turkish adaptation was made by Özyeşil et al. (2011). The aim of the scale is to evaluate individual differences in individuals' states of being conscious in their daily experiences, the frequency of being conscious, and the awareness and attention in the current moment. Mindful awareness includes current experiences and measures the tendency to be aware of these experiences (Özyeşil et al., 2011). It has a 6-point Likert scale (“1=almost always”, “2=most of the time”, “3=sometimes”, “4=rarely”, “5=fairly rarely”, “6=almost never”). The scale consists of 15 items. There is no reverse item in the scale. The lowest score that can be obtained from the scale is 15, and the highest score is 90. A high score

indicates a high level of conscious awareness. The Cronbach Alpha internal consistency coefficient of the scale is 0.80 (Özyeşil et al., 2011) (Appendix-2).

3.6.3. Prenatal Attachment Scale (PAS)

PBÖ, a scale designed by Türkmen Çevik and Kurnaz (2018) to measure the level of attachment of pregnant women to their unborn babies, consists of 33 items. The scale items are graded in threes and each item is answered as I definitely agree (3), I partially agree (2), I definitely disagree (1). There is no reverse statement in the scale. The lowest score that can be obtained from the scale is 33, and the highest score is 99. A high score obtained from the scale indicates a high level of prenatal attachment. The scores that can be obtained from the curiosity and excitement factor vary between 13-39; from the acceptance and enthusiasm factor between 9-27 and from the hope factor between 11-33. The total internal consistency coefficient of the scale was calculated as 0.94 and it was determined that the scale is a reliable and valid tool for measuring the level of attachment of pregnant women to their babies (Appendix-3).

3.6.4. Prenatal Father Attachment Scale (PPA)

The scale, developed by John Condon (1993) and adapted into Turkish by Benli and Aksoy Derya (2019), consists of 16 Likert-type items. While each item of the scale focuses on measuring the father's feelings, attitudes, behaviors, and thoughts towards the developing fetus in the womb, most items are based on the fathers' experiences in the last two weeks. The scale has two factors: "quality of attachment", which measures the father's emotional experience while thinking about the baby in the womb, and "time spent on attachment", which expresses the intensity of preoccupation with the fetus. Items 1, 3, 5, 6, 7, 8, 12, 13, and 15 on the scale are reverse scored. Items six and 13 are added to the total score of the scale. Each item of the scale is scored as 1 = absence of feelings toward the fetus; 5 = very strong feelings toward the fetus. The score that can be obtained from the scale is between 16-80; The score that can be obtained from the quality of attachment sub-dimension is 8-40; The score that can be obtained from the time spent on attachment sub-dimension is

6-30. An increasing score indicates a higher degree of attachment. Cronbach's α in the total of the DÖBBÖ is 0.82. The same scale was later studied by Güleç Şatır and Kavlak (2021) under the name "Paternal Antenatal Attachment Scale" (Appendix-4).

3.6.5. Fathers' Fear of Childbirth Scale (FDFS)

The scale was developed by Ghaffari et al. (2021) to determine the levels of fear of childbirth in expectant fathers during pregnancy. The scale consists of two sub-dimensions: the birth process (12 items) and hospital fear (5 items), which affect fathers' fear of childbirth. It is a 5-point Likert-type scale and the items are answered as strongly disagree (1), disagree (2), undecided (3), agree (4), and strongly agree (5). The score that can be obtained from the scale varies between 17 and 85. Scores of 17–35, 36–54, and > 55 indicate low, moderate, and high fear of childbirth, respectively. Higher scores indicate a higher level of fear related to childbirth (Ghaffari et al., 2021). The Cronbach alpha coefficient of the scale was calculated as 0.84. The validity and reliability of the scale in Turkish was performed by Calpbinici et al. (2023). The content validity index of the scale was found to be 0.96. Cronbach alpha reliability coefficient for the entire scale is 0.93 (Appendix-5).

3.6.6. Wijma Birth Expectation/Experience Scale Version A (WBDÖ-A)

This scale was developed by Wijma et al. (1998). The aim of the scale is to evaluate the fear of childbirth experienced by women during pregnancy. The validity and reliability study of its Turkish was conducted by Korukcu et al. (2009). The scale consists of 33 items. The responses on the scale are numbered from 0 to 5 and are of a six-point Likert type. Zero represents “completely” and 5 represents “not at all”. The minimum score on the scale is 0, while the maximum score is 165. A high total score indicates a high level of fear. The negatively loaded questions on the scale (2, 3, 6, 7, 8, 11, 12, 15, 19, 20, 24, 25, 27, 31) are calculated by reversing them in order to ensure

consistency in measurement. A score below 37 indicates mild fear of childbirth, between 38-65 indicates moderate fear of childbirth, between 66-84 indicates severe fear of childbirth, and 85 and above indicates clinical fear of childbirth. In the study by Körükcü et al. (2009), the Cronbach's alpha value of the WD EQ Scale A version was found to be 0.89 (Appendix-6).

3.6.7. Wijma Birth Expectation/Experience Scale Version B (WBDBS-B)

The current scale was developed by Klaas and Barbro Wijma (1998) to measure the fear of childbirth experienced by women. The scale is administered to women in their rooms after they give birth. This six-point Likert-type scale consists of 32 items (Wijma et al., 1998). The answers are numbered from 0 to 5, with 0 representing “completely” and 5 representing “not at all”. The minimum score of the scale is 0, and the maximum score is 160. While the answers to some questions of the scale are calculated according to the number they correspond to, questions numbered “2, 3, 6, 7, 10, 11, 14, 18, 19, 23, 24, 26 and 30” are calculated by turning them in the opposite direction. The calculated W-DEQ-B score is ≤37 and indicates a low level, 38-65 indicates a moderate level, 66-84 indicates a severe level, and ≥85 and above indicates a level of fear of childbirth that requires clinical treatment (Wijma et al., 1998). The scale was adapted to Turkish and its validity and reliability study was conducted by Körükcü et al. in 2014, and the Cronbach alpha value was found to be 0.88 (Körükcü et al., 2014) (Appendix-7).

3.6.8. Postpartum Self-Evaluation Scale (PSS)

The Cronbach's alpha value of the scale, whose validity and reliability study was conducted by Taşçı and Mete (2010), was determined as 0.84. It is a 4-point Likert-type scale with 82 items developed by Lederman and Weingarten in 1981 to evaluate the adjustment of women to motherhood in the postpartum period. The scale has 7 sub-dimensions that evaluate the postpartum adjustment of mothers. 39 of the items in the scale are reverse-biased. The numbers of the reverse-biased items in the scale are as follows; 1, 2, 4, 6, 9, 10, 14, 15,16, 22, 29, 30, 32, 33, 36, 38, 40, 41, 42, 43, 44, 46, 47, 49, 51, 53, 54, 59, 61, 62, 67, 69, 71, 73, 77, 78, 79, 81, 82. The scale is

measured with a 4-point assessment. Postpartum adjustment is evaluated based on the results of scores ranging from “1” to “4” (4: “Describes very much”, 3: “Partially describes”, 2: “Describes a little”, 1: “Does not describe at all”). A minimum of 82 and a maximum of 328 points can be obtained for the entire scale. Low scores indicate high postpartum adjustment (Appendix-8).

3.6.9. Father-Infant Attachment Scale (FBA)

It was developed by Condon et al. (2008) to measure the postpartum father-infant bond. The validity and reliability of the Turkish version was done by Güleç and Kavlak (2013). Each item of the scale is scored between one and five points. 12 items in the scale (4, 5, 7, 8, 9, 10, 11, 12, 13,14, 15,16) are reverse-coded. High scores obtained from the scale indicate high bonding. The original scale consists of three sub-dimensions and 19 items. The Turkish version of the scale includes three sub-dimensions (patience-tolerance, pleasure in interaction, love-pride) and 18 items (item 16 was removed) (Appendix-9).

3.10. Maternal Attachment Scale (MAS)

MBI was developed by Mary and Muller (1994) to measure maternal love and attachment. In the study in which Kavlak and Şirin (2009) tested the validity and reliability of the scale in Turkish society, the Cronbach's alpha reliability coefficient of the scale was found to be 0.77 for mothers with 1-month-old babies and 0.82 for mothers with 4-month-old babies. It was determined that it can be used safely for mothers with babies in the 1st and 4th months after birth. The scale is a 4-point Likert-type scale consisting of 26 items. Each item includes direct expressions and is calculated as always (a) = 4 points, often (b) = 3 points, sometimes (c) = 2 points and never (d) = 1 point. The lowest score to be obtained from the scale varies between 26 and the highest score varies between 104. A high score indicates a high level of maternal attachment (Appendix-10).

3.7. Analysis of Data

The data obtained from this study were analyzed with SPSS for Windows 25.00 (Statistical Package for Social Sciences) statistical package program. Descriptive statistics were given as number of units (n), percentage (%), mean ± standard deviation ($\bar{x}$ ±ss), minimum value (min), maximum value (max) . Skewness and kurtosis values and mode median and median values were evaluated within the framework of normality test. When the skewness and kurtosis values of the relevant variables were examined, it was found that all values were within the accepted limits (± 2) and the variables were normally distributed, so parametric tests were used in the analyses. For numerical variables, comparisons of groups according to time were made with the Paired Samples t (dependent groups) test in repeated measurements and comparisons between groups were made with the Independent-Samples t (Independent groups) test. Mixed Design Anova test was used to help determine statistically significant differences by taking into account both within-group factors and between-group factors. In this way, both the differences between the groups and the changes over time were evaluated in the same analysis. The chi-square test was applied to evaluate the compatibility between birth expectation and the actual birth type. In all comparisons, $p<0.05$ was accepted as the significance level of statistical tests (Pallant, 2020).

3.8 Ethical Aspects of the Research

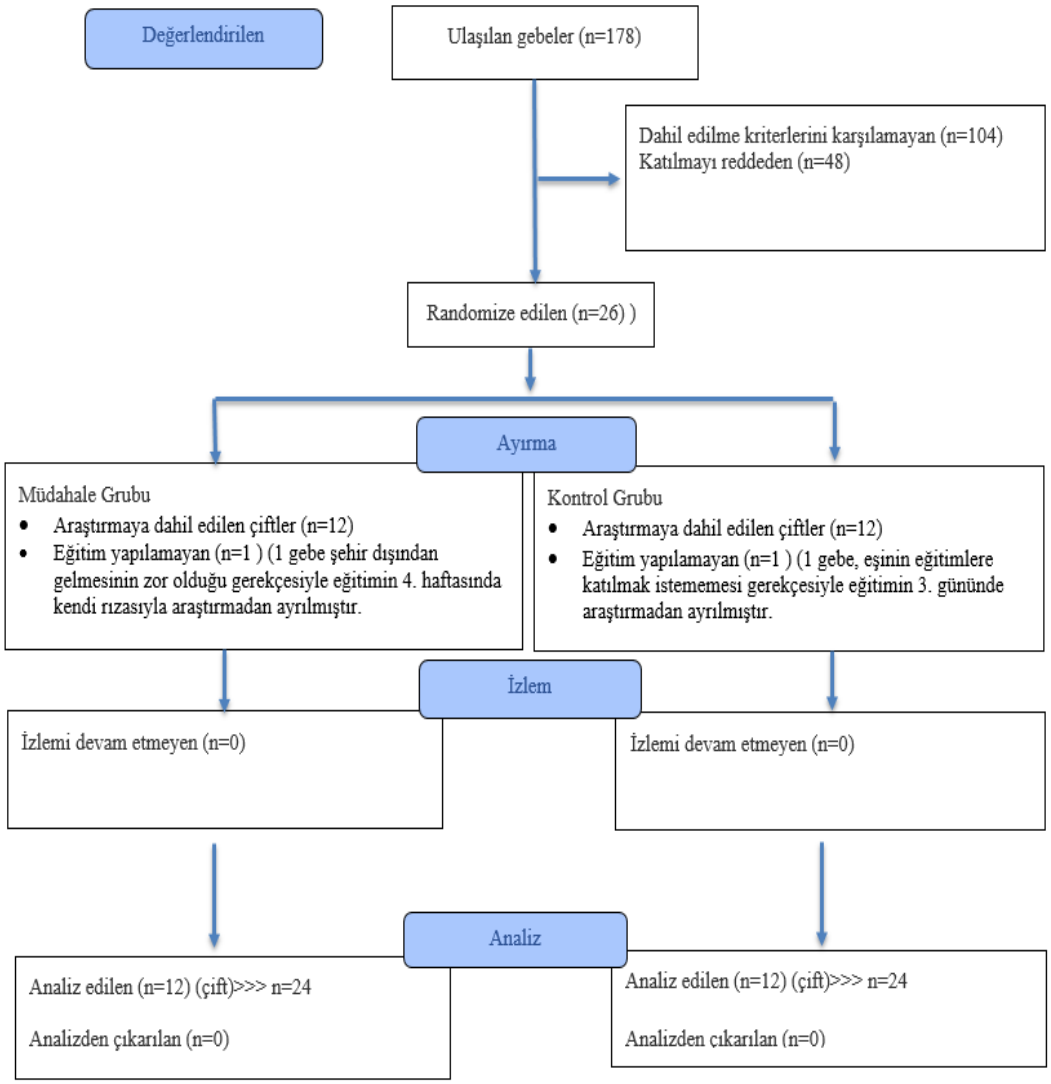
Erciyes University Faculty of Health Sciences Academic Board decision was received (09.10.2023, 2023/50, Decision number: 71) (Appendix 11). Institutional permission was received from Kayseri City Training and Research Hospital Education Planning Board (24.11.2023, Number: 76397871) (Appendix-12). Ethics committee permission was received from Kayseri City Training and Research Hospital Clinical Research Ethics Committee (31.10.2023, Decision no: 938) (Appendix-13). Pregnant women who volunteer to participate in the research during the data collection phase will be asked to read and sign the Informed Consent Form (Appendix-14).

The researcher has a certificate of participation in the eight-week "Mindfulness-Based Stress Reduction (MBSR) Program" organized by Gazi University Faculty of Nursing , a certificate of "Conscious Awareness (Mindfulness) Training" organized by Başkent University, a certificate of "Birth Coach-Doula Trainer Training", "Breastfeeding Consultant", "Baby Care", "Pregnancy Yoga", "Fit Breathing Coaching" and "Stress Management" organized by the Turkish Education Foundation, and a certificate of participation in the 2nd International 4th National Childbirth Preparation Education Congress "Mindfulness-Based Childbirth Preparation Education" (Appendix-).

3.9. Implementation of the Research

Kayseri City Hospital Pregnancy School and Pregnancy Polyclinic June 1-September 1, 2024 26 pairs of parents who applied between and met the inclusion criteria were assigned to groups according to the randomization list. Awareness-Based Parenting and Childbirth Preparation Education was given as a group education during the hours when the pregnancy school did not provide education and on Sundays of each week. No intervention was made to the parents who formed the control group other than the childbirth preparation education conducted by Kayseri City Education and Research Hospital. The flow diagram (Figure 3.1) is given below.

Figure 3.2: CONSORT 2025 Flow Diagram (https://www.consort-spirit.org/)



3.9.1. Control Group Application Steps

No additional application was made to the control group except for the 1-week birth preparation training at the Kayseri City Education and Research Hospital Pregnancy School. In the first session, written consent was obtained from the parents who met the inclusion criteria and agreed to participate in the study, and the surveys were filled out by the researcher in the first hour of the training. In this session, the pregnant woman and her partner were introduced and the ETF was filled in to learn their socio-demographic information. BFÖ, PBÖ, DÖBBÖ, BDKÖ, WBDÖ-A were applied. Then, the pregnancy school's own training was given by the trainer at the pregnancy school for 1 week.

After the 1-week birth preparation training was completed, BFÖ, PBÖ, DÖBÖ, BDKO, WBDÖ-A were applied. On the first postpartum day, WBDÖ-B was applied to determine the birth experiences of the mothers.

In the 4th month postpartum, mothers were contacted via phone and the PCAS was administered to assess mother-infant adjustment and the MBI was administered to assess mother-infant attachment; and fathers were contacted in the 6th month postpartum and the BBBÖ was administered to assess father-infant attachment.

3.9.2. Intervention Group Implementation Steps

In addition to the 1-week birth preparation training at the Pregnancy School of Kayseri City Education and Research Hospital, the intervention group received Mindfulness-Based Parenting and Birth Preparation Training. This training aimed to teach participants how to monitor their thoughts and emotional states, how to deepen their sensory awareness of their bodies, how to be more careful about how their minds work, and how to deepen their sensory self-awareness, so that they would be more sensitive during the birth and parenting processes. A total of 9 separate sessions were implemented. Mindfulness-Based Parenting and Birth Preparation Training was implemented in 1 session per week for 9 weeks, with the duration of each session varying according to the parents' compliance and needs in the program, with each session lasting an average of 150 minutes. The practices were taught by the researcher during the training, and the sections related to the practice were marked and shown in the training booklet and read once in class. Homework assignments, audio recordings containing guiding conscious awareness practices, and the Mindfulness-Based Parenting and Birth Preparation Training Booklet, which was created by the facilitator and included the training protocol, were distributed for each session. Only one session (session 5) was a make-up session via the Zoom Workplace application for parents who could not attend face-to-face training due to weather conditions. Throughout the course, parents were asked to practice meditation at home with guided meditation audio recordings for 30-45 minutes a day, 6 days a week.

- 1 (150 minutes)

The first session was held on Sunday of the first week. In the first hour of this session, the researcher filled out the questionnaires. The pregnant woman and her partner were introduced and ETF was filled out in order to learn their socio-demographic information. BFÖ, PBÖ, DÖBBÖ, BDKÖ, WDBÖ-A were applied. Then, the trainings started and in the first session, the definition of awareness was made, the purpose and content of Awareness-Based Parenting and Birth Preparation Training was explained, talking about when she first learned about pregnancy, what she did and felt after learning, Breath Awareness Meditation, Being with the Baby Practice, Raisin Meditation applications were included.

- Session 2 (150 minutes)

The second session was held on Sunday of the second week. The second session focused on understanding labor, pain, fear and hormones from a mind-body perspective. In this session, Body Scan Practice, Breath Awareness Practice, Being with the Baby Practice and Birth Yoga Practices were done. Questioning the turning points in her life and role models related to parenting and awareness-based eating behavior were discussed. Formal and informal practical homework assignments were evaluated.

- Session 3 (150 min)

The 3rd session was held on Sunday of the third week. In this session, practices for coping with pain were discussed. In this session, the Body Scan Practice was applied. It was discussed how to do daily activities such as brushing teeth, driving, taking a shower, shaving, washing dishes, and cooking with awareness. Breath Awareness Meditation and Being with the Baby Practice were performed. The Pleasant Events Calendar was explained and homework was given to the couples. The formal and informal homework given in the previous week was evaluated. It was discussed what kind of mother one dreams of being, and fears and anxieties about the future were discussed. The formal and informal homework was evaluated.

- Session 4 (150 min)

The 4th session was held on Sunday of the fourth week. In this session, the role of the spouse/partner in birth, pain management and awareness practices were discussed. Birth Yoga Practices and Body Scan Practice were applied. Breathing Awareness Practice, Three-Minute Breathing Break Practice and Being with the Baby Practice were applied. Formal Pain Practice was applied with ice. Formal and informal homework assignments were evaluated. Homework was given by explaining the Unpleasant Events Calendar. Baby care training was emphasized. Baby Care Training: Umbilical cord care, baby bath and skin care, nail care, excretion, diaper use and diaper rash, thrush, body temperature assessment and dressing, vaccination, baby care rehearsal with a baby model were performed.

- 5 (150 min)

On Sunday of the fifth week, the 5th session could not be held face-to-face due to weather conditions and was held online via Zoom Workplace. In the fifth session, the needs of the newborn and the new parent and secure attachment issues were discussed. Birth Yoga Practices, Body Scan Practice, Breath Awareness Practice, Being with the Baby and Formal Pain Practice were applied. Mindful Pooping Practice was discussed. Formal and informal homework assignments were evaluated. After the practices, the expectant mother was given training on how to care for herself during the postpartum period. This training included early mobilization, lochia follow-up, perineal care, care if an episiotomy was applied, breast care and problems, information on milk expression and storage conditions, information on the wound healing process and facilitating factors if a cesarean section was given, nutrition, sleep and rest, Kegel exercises and postpartum exercises, transition time to sexual activity and contraception, emotional preparation for the process and information on support systems.

- 6 (150 minutes)

The 6th session was held on Sunday of the sixth week. Birth Yoga Practices, thirty-minute Sitting Meditation and Body Scan Meditation were applied. Formal Pain Practice was performed. Fear and Happiness Research Practice was performed. Walking Meditation and Speaking and Listening Research were applied. Formal and informal homework assignments were evaluated. In this session, the choice of birth method, preparation of the birth bag, signs of the beginning of labor and ways to facilitate birth were discussed. A One-Day Mindfulness Practice (retreat) assignment was given between Weeks 6 and 7.

- 7 (15 0 minutes)

The 7th session was held on Sunday of the seventh week. Sitting Meditation, Preference-Free Awareness, Body Scan, Birth Yoga Practices, Compassion Meditation and Speaking and Listening Research on Family Roots were applied. Mindful breastfeeding and breastfeeding education were discussed. Breastfeeding Education: The structure of breast tissue, the importance of breastfeeding, how breastfeeding is performed, placing the baby on the breast, breastfeeding positions, evaluation of breastfeeding, starting complementary foods, breast care, possible problems related to the nipple, burping the baby after breastfeeding, breastfeeding rehearsal with a baby model were conducted. Formal and informal homework assignments were evaluated.

- 8 (15 0 minutes)

8th week . Compassion Meditation was applied. How much time do you spend looking at your mobile phone, texting or sharing on social media? How might this be related to your stress? The practice of spending one day of the week as a “technology-free day” was explained by searching for answers to the questions. Formal and informal homework assignments were evaluated.

- 9 (180 minutes)

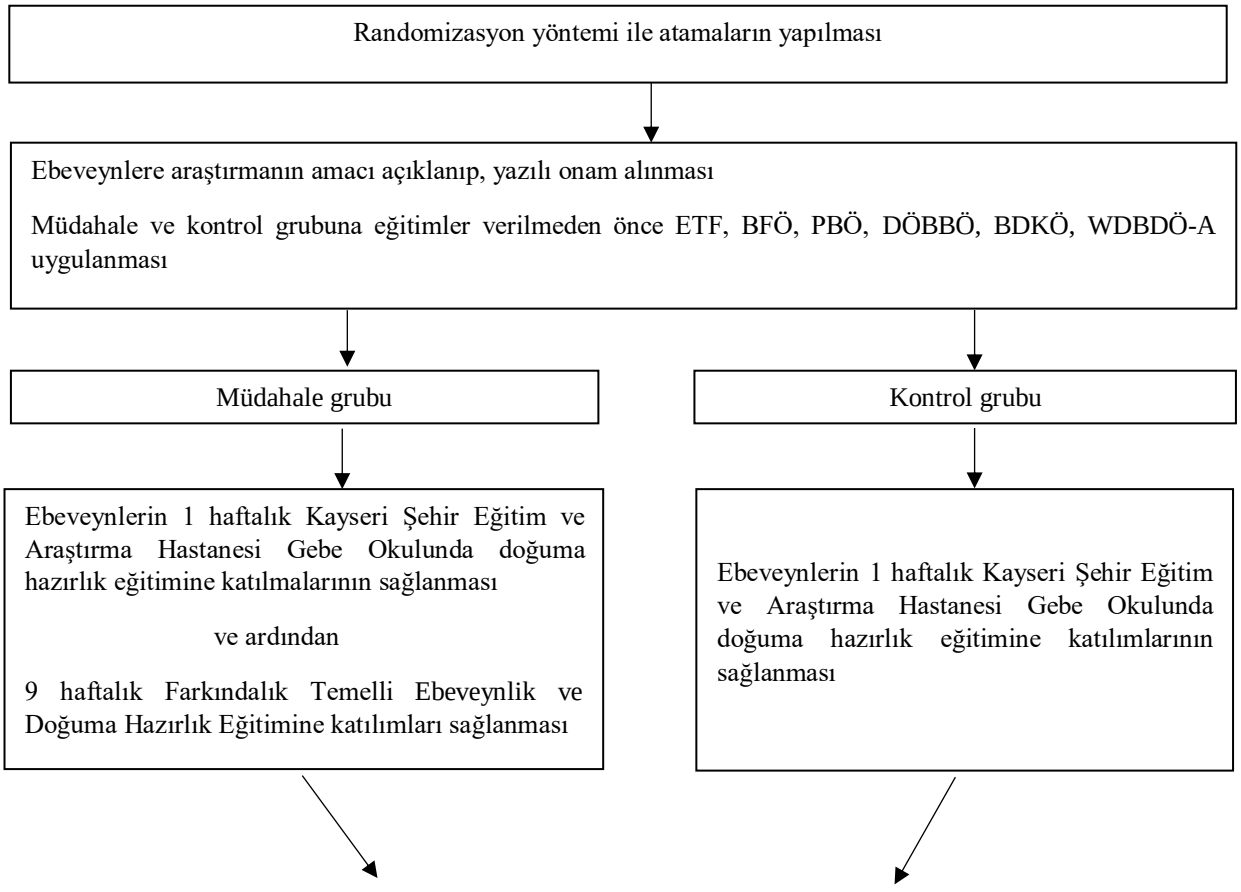
Sunday of the ninth week . The practices that the group found most useful were re-implemented. The section titled “Endings and Beginnings: The Last Lesson” was read and discussed. The partners were asked to share with each

other what was rising from within them. They were given homework to continue to apply formal pain practices at certain intervals until they gave birth. They were encouraged to approach routine activities with awareness and continue to develop their awareness at every moment of their daily lives. They were encouraged to practice Being with the Baby, Compassion Meditation, and Three-Minute Breathing Breaks.

On the day the 9th session was completed, BFÖ, PBÖ, DÖBBÖ, BDKÖ, WBDÖ-A were applied.

On the first postpartum day, mothers were contacted by phone and the WBDBS-B Version was administered to determine their birth experiences.

In the 4th month postpartum, mothers were contacted via phone and the PCAS was administered to assess mother-infant adjustment and the MBI was administered to assess mother-infant attachment; and fathers were contacted in the 6th month postpartum and the BBBÖ was administered to assess father-infant attachment.



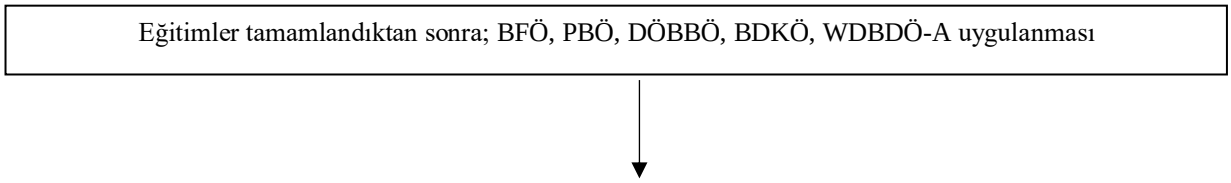


Figure 3.3. *Research workflow diagram*

3.10. Awareness-Based Parenting and Birth Preparation Education Booklet

The "Mindfulness-Based Parenting and Birth Preparation Education Booklet" (Appendix-15), which was created by the researcher by scanning the relevant literature (Atalay, 2018; Bardacke, 2012; Vreeswijk, 2019), was sent to the participants in printed form and the audio recordings to be listened to during meditation (Appendix-16) were sent to the participants via WhatsApp application. Before the booklet was used, it was presented to the opinion of an academician who is an expert in the field of Obstetrics-Women's Health and Diseases Nursing and an academician who is an expert in the field of educational sciences, and the booklet was finalized in line with the suggestions received.

3.11. Limitations of the Research

that the research results are limited to the research group and generalizations cannot be made, the data collection tools were filled out based on self-reporting, single blinding was possible in the study, and the sample size was kept small due to the scope of the training.

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4. FINDINGS

Awareness-Based Parenting and Childbirth Preparation Education Given to Couples This study, which was conducted to determine the effects of maternal-paternal bonding, birth parameters and postpartum sleep, was completed with a total of 24 couples (48 people) (24 intervention-24 control) and the findings are given below.

The distributions of demographic variables included in the study are given in Table 4.1.

Table 4.1. Distributions of demographic variables

	Category	**n (%)**
Mother's Education Status		
	Primary education	1 (4.2%)
	Secondary Education	11 (45.8%)
	Bachelor's degree and above	12 (50.0%)
Father's Education Status		
	Secondary Education	15 (62.5%)
	Bachelor's degree and above	9 (37.5%)
Mother's Profession		
	Housewife	16 (66.7%)
	Officer	4 (16.7%)
	Private sector	4 (16.7%)
Father's Profession		
	Private sector	17 (70.8%)
	Officer	7 (29.2%)
Mother's Economic Status		
	My income is more than my expenses	6 (25.0%)
	My income is equal to my expenses	13 (54.2%)
	My income is less than my expenses	5 (20.8%)
Father's Economic Status		
	My income is more than my expenses	7 (29.2%)
	My income is equal to my expenses	12 (50.0%)
	My income is less than my expenses	5 (20.8%)
Planned Pregnancy?		

	Yes	20 (83.3%)
	No	4 (16.7%)
Is He Getting Any Other Education?		
	No	24 (100.0%)
Mother Pre-Pregnancy Sports		
	Yes	4 (16.7%)
	No	20 (83.3%)
Mother Pre-Pregnancy Sports Type		
	Walk	1 (25.0%)
	Pilates	3 (75.0%)
Father Pre-Pregnancy Sports		
	Yes	2 (8.3%)
	No	22 (91.7%)
Father Pre-Pregnancy Sports Type		
	Walk	1 (50.0%)
	Football	1 (50.0%)
Mother Pregnancy Sports		
	Yes	4 (16.7%)
	No	20 (83.3%)
Mother Pregnancy Order Sport Type		
	Walk	2 (50.0%)
	Pilates	2 (50.0%)
Father Pregnancy Order Sports		
	Yes	1 (4.2%)
	No	23 (95.8%)
Father Pregnancy Order Sport Type		
	Football	1 (100.0%)
Mother Hobby		
	Yes	2 (8.3%)
	No	22 (91.7%)
Mother Hobby Type		
	Reading books	2 (100.0%)
Dad Hobby		
	No	24 (100.0%)
Mom, Don't Take Time for Yourself		
	Yes	7 (29.2%)
	No	8 (33.3%)
	Partially	9 (37.5%)
Dad, Don't Take Time for Yourself		
	Yes	7 (29.2%)
	No	13 (54.2%)

	Partially	4 (16.7%)
Mother Chronic Disease		
	No	24 (100.0%)
Maternal Medication Use		
	No	24 (100.0%)
Discomfort During Pregnancy		
	No	24 (100.0%)
Father Chronic Disease		
	No	24 (100.0%)
Father Drug Use		
	No	24 (100.0%)

A total of 24 individuals participated in the study. 50% of the mothers had a bachelor's degree or higher, 45.8% had a secondary education, and 4.2% had a primary education. 62.5% of the fathers had a secondary education, and 37.5% had a bachelor's degree or higher. 66.7% of the mothers were housewives, 16.7% were civil servants, and 16.7% worked in the private sector. 70.8% of the fathers were private sector employees, and 29.2% were civil servants.

Regarding the economic status of the mothers, 54.2% stated that their income was equal to their expenses, 25.0% stated that their income was more than their expenses, and 20.8% stated that their income was less than their expenses. Regarding the economic status of the fathers, 50.0% stated that their income was equal to their expenses, 29.2% stated that it was more, and 20.8% stated that it was less. 83.3% of the pregnancies were planned. All participants (100.0%) reported that no one else was receiving education at home.

16.7% of mothers reported that they did sports before pregnancy, 75.0% of these sports were pilates and 25.0% were walking. In the father group, 8.3% reported that they did sports before pregnancy, and these sports were walking and football at equal rates (50.0%). 16.7% of mothers reported that they did sports during pregnancy, 50.0% of these activities were walking and 50.0% were pilates. Only 4.2% of fathers did sports during pregnancy, and this person was involved in football.

Only 8.3% of mothers reported having a hobby, and this hobby was reading books. In the father group, no participant reported having a hobby. 29.2% of mothers reported spending time with their children, 33.3% did not spend time, and 37.5% partially spent time. For fathers, these rates were 29.2% yes, 54.2% no, and 16.7% partially,

respectively. All mothers and fathers (100.0%) reported that they did not have a chronic disease and did not use medication. In addition, none of the mothers reported experiencing any discomfort during pregnancy.

In the evaluation of the normal distribution of the variables in the study, kurtosis and skewness values were examined. The analysis results are given in Table 4.2.

Table 4.2. Descriptive statistics of variables

Variables	**Avg.**	**SD**	**Distortion**	**Kurtosis**
Pre-Test - Conscious Awareness Scale (CAS) – Mother	3.71	0.99	-0.756	0.075
Post-Test - Conscious Awareness Scale (CAS) – Mother	4.00	1.40	-0.660	-0.388
Pre-Test - Conscious Awareness Scale (CAS) – Father	4.24	0.81	-0.317	-1.358
Post-Test - Conscious Awareness Scale (CAS) – Father	4.57	1.02	-0.812	-0.991
Pre-Test - Prenatal Attachment Inventory (PAI)	2.78	0.27	-2.154	3,803
Post-Test - Prenatal Attachment Inventory (PAI)	2.82	0.32	-2.489	5,420
Pre-Test – PBO – Curiosity and Excitement	2.71	0.28	-1.219	0.810
Final Test – PBO – Curiosity and Excitement	2.81	0.36	-2,564	6,141
Pre-Test – PBO – Acceptance and Enthusiasm	2.83	0.27	-2.239	4,180
Post-Test – PBO – Acceptance and Enthusiasm	2.83	0.28	-2.153	3,843
Pre-Test – PBO – Hope	2.82	0.31	-2.217	3,939
Final Test – PBO – Hope	2.81	0.32	-2.222	4,284
Pre-Test – Prenatal Paternal Attachment Scale (PPAS)	4.06	0.45	-0.325	0.168
Post-Test – Prenatal Paternal Attachment Scale (PPAS)	4.43	0.46	-1.225	0.764
Pre-Test – DOBBO – Quality of Attachment	4.49	0.43	-0.981	0.732
Final Test – DOBBO – Quality of Attachment	4.81	0.25	-2.118	5,156
Pre-Test – DOBBO – Taking Time to Connect	3.62	0.58	0.095	-0.771
Final Test – DOBBO – Taking Time to Connect	4.05	0.69	-1.029	-0.015
Pre-Test – Fathers' Fear of Childbirth Scale (FFS)	3.29	1.04	-0.199	-0.801
Post-Test – Fathers' Fear of Childbirth Scale (FBS)	2.62	1.03	0.844	0.130
Pre-Test – BDKO – Fear of Childbirth	3.41	1.08	-0.136	-0.883
Post-Test – BDKO – Fear of Childbirth	2.83	1.07	0.492	-0.431
Pre-Test – BDKO - Hospital Fear	3.01	1.18	-0.042	-0.949
Post-Test – BDKO - Hospital Fear	2.12	1.10	1,354	1,303
Pre-Test – Wijma Childbirth Expectation/Experience Scale – A (WDBDÖ-A)	1.75	1.13	1,338	0.915

Post-Test – Wijma Childbirth Expectation/Experience Scale – A (WDBDÖ-A)	1.01	0.75	1,051	0.474
Wijma Birth Expectation/Experience Scale – B (WDBDÖ-B)	2.44	1.06	0.733	-0.672
Postpartum Self-Evaluation Scale (PSS)	3.53	0.50	-0.890	-0.856
PKDÖ - Quality of Relationship Between Spouses	3.58	0.55	-0.979	-0.638
PKDÖ - Partners' Perspective on Participation in Baby Care	3.64	0.55	-1.087	-0.635
PKDÖ - Satisfaction with Birth Experience	3.38	0.62	-0.583	-1.258
PKDÖ - Contentment with the Continuity of Life	3.32	0.73	-0.594	-1.353
PKDÖ - Relying on Strength to Cope with Motherhood Duties	3.53	0.48	-0.895	-0.374
PKDÖ - Satisfaction with Motherhood and Newborn Care	3.61	0.38	-1.114	0.960
PKDÖ - Support for Motherhood from Family and Friends	3.59	0.59	-0.955	-0.974
Father-Infant Attachment Scale (FBA)	4.08	0.65	-1.123	0.283
BBBÖ - Patience-Tolerance	3.90	0.55	-1.017	-0.079
BBBÖ - Pleasure in Interaction	4.05	0.82	-0.940	0.051
BBBÖ - Love-Pride	4.51	0.61	-1.319	0.972
Maternal Attachment Scale (MAS)	3.74	0.42	-1.218	-0.343

When the skewness and kurtosis values of the relevant variables are examined, it is seen that all values are within the accepted limits and the variables are distributed close to the normal distribution. This supports the use of parametric tests in the analysis. In particular, the skewness and kurtosis values remaining in the range of ±2 reveal that the data do not show a statistically significant deviation. Therefore, the variables meet the normal distribution assumption.

Conscious Awareness – Mother

The effect of the mindfulness-based parenting and birth preparation training given to couples on the mean scores of mothers from the Conscious Awareness Scale was evaluated with Mixed Measures ANOVA. The analysis results and post-hoc results are given in Table 4.3.

Table 4.3. Variance analysis and post-hoc results regarding the mean scores of mothers on the Conscious Awareness Scale

Variable	**Experiment**	**Control**	**Test Statistics** [a]	
	$\bar{X}$**±ss**	$\bar{X}$**±ss**	***t***	***p***
Before Application	4.02 ± 0.81	3.40 ± 1.08	1.59	.126
After Application	4.77 ± 0.71	3.22 ± 1.51	3.21	.004
Test Statistics [b]	t = 4.23 p < .001	t = 1.00 p = .327		
Test Statistics [c]	**F**	***p***	η^2_g	

Group	6.66	.017	.22	
Time	5.21	.032	.02	
Group x Time	13.69	.001	.05	

a: t Test for Independent Samples, b: t Test for Repeated Measures, c: ANOVA for Mixed Measures

The differences in the mean scores of the mothers in the intervention and control groups on the mindfulness scale before and after the application were evaluated with mixed Measures ANOVA. As a result of the analysis, it was determined that the scores obtained differed statistically significantly according to the groups of the participants, F (1, 22) = 6.66, p = .017, η^2_g = .22. It was also determined that there was a statistically significant difference according to time, F (1, 22) = 5.21, p = .032, η^2_g = .02. In addition, a significant interaction was observed between group and time, F (1, 22) = 13.69, p = .001, η^2_g = .05.

In the comparisons made after the interaction, a significant difference was found between the pre- and post-intervention scores in the experimental group (t (22) = 4.23, p < .001), but this difference was not significant in the control group (t (22) = 1.00, p = .327). In the comparisons made between the groups between the times, there was no significant difference between the experimental and control groups before the intervention (t (22) = 1.59, p = .126), but after the intervention, the mothers in the experimental group had significantly higher scores (t (22) = 3.21, p = .004). The results of the analyses are given in Figure 4.1.

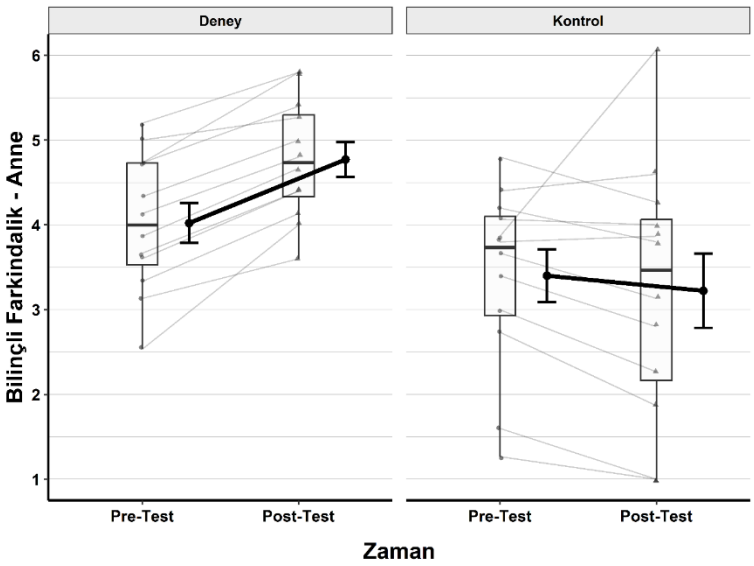

Figure 4.1. Pre-Test and Post-Test Changes in Experimental and Control Groups – Conscious Awareness

Note. Gray dots represent individual scores on pretest and posttest, and gray lines represent change. Box plots show the median for each group and the distribution of the data. Black dots represent group means, and error bars represent standard errors.

Conscious Awareness – Father

The effect of the mindfulness-based parenting and birth preparation training given to couples on the mean scores of fathers on the Conscious Awareness Scale was evaluated with Mixed Measures ANOVA. The analysis results and post-hoc results are given in Table 4.4.

Table 4.4. Variance analysis and post-hoc results regarding the mean scores of fathers on the Conscious Awareness Scale

Variable	**Experiment**	**Control**	**Test Statistics [a]**	
	$\bar{X}$±**ss**	$\bar{X}$±**ss**	***t***	***p***
Before Application	4.57 ± 0.72	3.91 ± 0.85	2.14	.044
After Application	5.19 ± 0.69	3.96 ± 0.90	3.69	.001
Test Statistics [b]	t = 4.85 p < .001	t = 0.35 p = .732		
Test Statistics [c]	**F**	***P***	η^2_g	
Group	9.42	.006	.28	
Time	13.51	.001	.05	
Group x Time	10.14	.004	.04	

a: t Test for Independent Samples, b: t Test for Repeated Measures, c: ANOVA for Mixed Measures

The differences in the average scores of fathers in the experimental and control groups from the conscious awareness scale before and after the application were evaluated with ANOVA for mixed Measurements. As a result of the analysis, it was determined that the scores obtained differed statistically significantly according to the groups of the participants, F (1, 22) = 6.66, p = .017, η^2_g = .22. It was also determined that there was a statistically significant difference according to time, F (1, 22) = 5.21, p = .032, η^2_g = .02. In addition, a significant interaction was observed between group and time, F (1, 22) = 13.69, p = .001, η^2_g = .05.

In the comparisons made after the interaction, a significant difference was found between the pre- and post-intervention scores in the experimental group (t (22)

= 4.23, $p < .001$), but this difference was not significant in the control group (t (22) = 1.00, $p = .327$). In the comparisons made between the groups between the times, there was no significant difference between the experimental and control groups before the intervention (t (22) = 1.59, $p = .126$), but after the intervention, the fathers in the experimental group received significantly higher scores (t (22) = 3.21, $p = .004$). The results of the analyses are given in Figure 4.2.

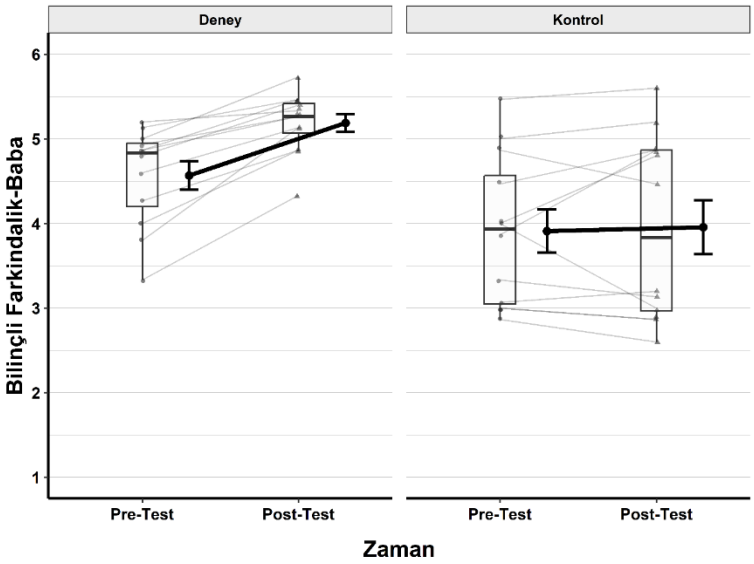

Figure 4.2. Pre-Test and Post-Test Changes in Experimental and Control Groups – Conscious Awareness

Note. Gray dots represent individual scores on pretest and posttest, and gray lines represent change. Box plots show the median for each group and the distribution of the data. Black dots represent group means, and error bars represent standard errors.

Prenatal Bonding

The effect of mindfulness-based parenting and birth preparation education given to couples on mother-infant attachment during the prenatal period was evaluated. The effect of the education on the mean scores of the Prenatal Attachment Inventory (PAI) was evaluated with Mixed Measures ANOVA. The analysis results and post-hoc results are given in Table 4.5.

Table 4.5. Variance analysis and post-hoc results regarding mean scores of the Prenatal Attachment Scale

	Experiment	**Control**	**Test Statistics [a]**

Variable	$\bar{X}$**±ss**	$\bar{X}$**±ss**	***t***	***p***
Before Application	2.85 ± 0.08	2.72 ± 0.08	1.17	.254
After Application	2.96 ± 0.08	2.67 ± 0.08	2.41	.025
Test Statistics [b]	t = 4.24 p < .001	t = 1.64 p = .116		
Test Statistics [c]	**F**	***P***	η^2_g	
Group	3.36	.080	.13	
Time	3.38	.079	.00	
Group x Time	17.26	.000	.02	

a: t Test for Independent Samples, b: t Test for Repeated Measures, c: ANOVA for Mixed Measures

The effects of mindfulness-based parenting and birth preparation education given to couples on mother-infant attachment during the prenatal period were evaluated with Mixed Measures ANOVA. According to the analysis results, it was seen that there was no statistically significant difference between the groups, F (1, 22) = 3.36, p = .080, η^2_g = .13. There was no significant difference in terms of time effect, F (1, 22) = 3.38, p = .079, η^2_g = .00. However, the group and time interaction was found to be statistically significant, F (1, 22) = 17.26, p < .001, η^2_g = .02.

Comparisons made after the interaction showed that there was a significant difference between the scores before and after the application in the experimental group (t (22) = 4.24, p < .001). This difference was not significant in the control group (t (22) = 1.64, p = .116). In the comparisons between the groups across times, no significant difference was found between the experimental and control groups before the application (t (22) = 1.17, p = .254), but it was seen that the participants in the experimental group had significantly higher scores after the application (t (22) = 2.41, p = .025).

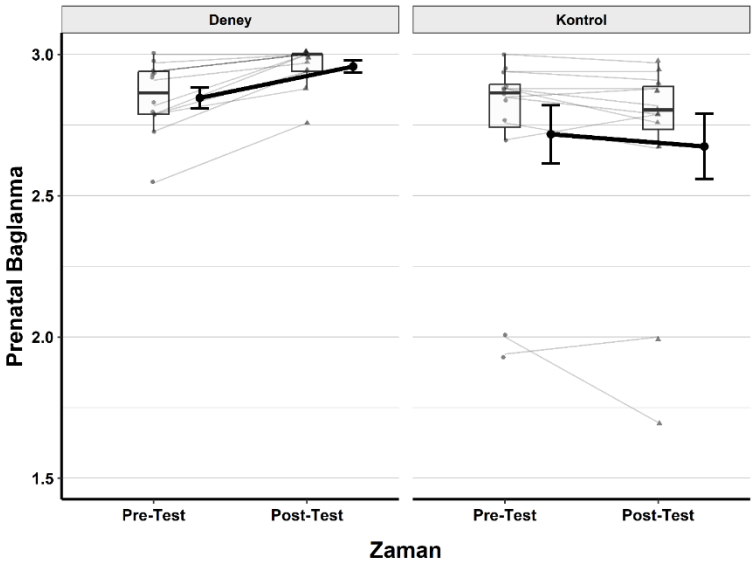

Figure 4.3. Pre-Test and Post-Test Changes in Experimental and Control Groups – Prenatal Attachment

Note. Gray dots represent individual scores on pretest and posttest, and gray lines represent change. Box plots show the median for each group and the distribution of the data. Black dots represent group means, and error bars represent standard errors.

Prenatal Bonding – Curiosity and Excitement

The effect of mindfulness-based parenting and birth preparation education given to couples on mother-infant attachment during the prenatal period was evaluated. The effect of the education on the mean scores of the Prenatal Attachment Inventory (PAI) curiosity and excitement sub-dimension was evaluated with Mixed Measures ANOVA. The analysis results and post-hoc results are given in Table X.

Table 4.5.1 Variance analysis and post-hoc results of the mean scores of the curiosity and excitement sub-dimension of the Prenatal Attachment Scale

Variable	**Experiment**	**Control**	**Test Statistics** [a]	
	$\bar{X}$±**ss**	$\bar{X}$±**ss**	***t***	***p***
Before Application	2.76 ± 0.08	2.67 ± 0.08	0.72	.480
After Application	2.96 ± 0.10	2.67 ± 0.10	2.03	.056
Test Statistics [b]	t = 3.73 p < .001	t = 0.00 p = 1.000		
Test Statistics [c]	**F**	***P***	η^2_g	
Group	2.23	.150	.08	
Time	6.94	.015	.03	

Group x Time	6.94	.015	.03	

a: t Test for Independent Samples, b: t Test for Repeated Measures, c: ANOVA for Mixed Measures

The differences in the scores of the mothers in the experimental and control groups from the Prenatal Attachment Questionnaire – Curiosity and Excitement sub-dimension before and after the application were evaluated using mixed measures ANOVA. As a result of the analysis, it was determined that the scores differed significantly according to time, F (1, 22) = 6.94, p = .015, $\eta^2 g$ = .03. A significant interaction was also found between group and time, F (1, 22) = 6.94, p = .015, $\eta^2 g$ = .03. However, no significant difference was observed between the groups in general, F (1, 22) = 2.23, p = .150, $\eta^2 g$ = .08.

In the comparisons made after the interaction, a significant difference was found between the pre- and post-intervention scores in the experimental group (t (22) = 3.73, p = .001), but this difference was not significant in the control group (t (22) = 0.00, p = 1.000). In the comparisons made between the groups between the times, no significant difference was found between the experimental and control groups before the application (t (22) = 0.72, p = .480); after the application, the difference reached borderline significance (t (22) = 2.03, p = .055).

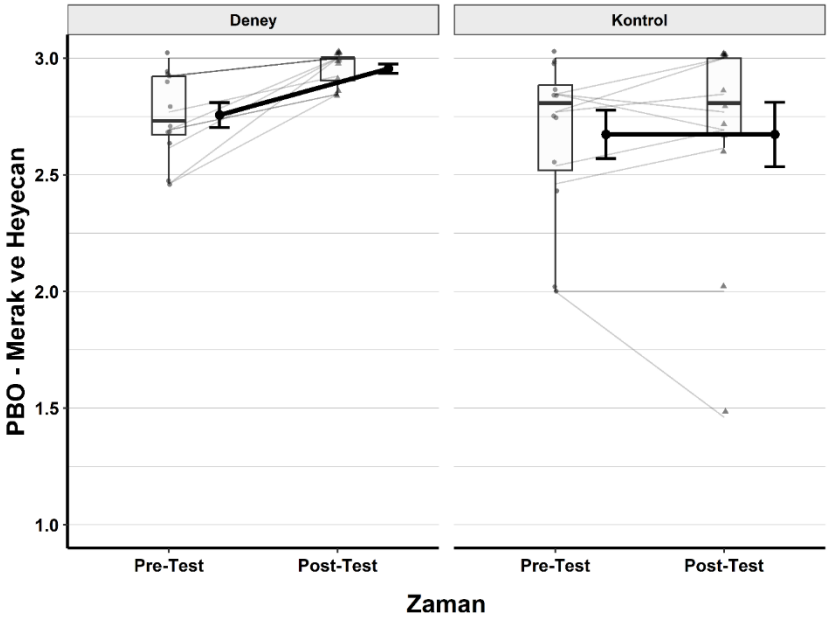

Figure 4.5. Pre-Test and Post-Test Changes in Experimental and Control Groups – Prenatal Attachment Curiosity and Excitement

Note. Gray dots represent individual scores on pretest and posttest, and gray lines represent change. Box plots show the median for each group and the distribution of the data. Black dots represent group means, and error bars represent standard errors.

Prenatal Attachment – Acceptance and Enthusiasm

The effect of mindfulness-based parenting and birth preparation education given to couples on mother-infant attachment during the prenatal period was evaluated. The effect of the education on the acceptance and enthusiasm sub-dimension mean scores of the Prenatal Attachment Inventory (PAI) was evaluated with Mixed Measures ANOVA. The analysis results and post-hoc results are given in Table X.

Table 4.5.2. Variance analysis and post-hoc results of the mean scores of the acceptance and enthusiasm sub-dimensions of the Prenatal Attachment Scale

Variable	**Experiment**	**Control**	**Test Statistics [a]**	
	$\bar{X}$±**ss**	$\bar{X}$±**ss**	***t***	***p***
Before Application	2.93 ± 0.08	2.74 ± 0.08	1.72	.099
After Application	2.98 ± 0.07	2.68 ± 0.07	3.22	.004
Test Statistics [b]	t = 2.35 p = .028	t = 2.75 p = .012		
Test Statistics [c]	**F**	***P***	η^2_g	
Group	6.02	.023	.21	
Time	0.08	.784	.00	
Group x Time	13.00	.002	.02	

a: t Test for Independent Samples, b: t Test for Repeated Measures, c: ANOVA for Mixed Measures

The scores of the participants in the experimental and control groups from the acceptance and enthusiasm sub-dimensions of PBÖ before and after the application were analyzed using mixed measures ANOVA. As a result of the analysis, a significant difference was observed between the groups, F (1, 22) = 6.02, p = .023, η^2_9 = .21. The effect of the time variable was not significant, F (1, 22) = 0.08, p = .784, η^2_9 = .00. However, a significant interaction was found between group and time, F (1, 22) = 13.00, p = .002, η^2_9 = .02.

In the comparisons made after the interaction, a significant increase was observed between the pre- and post-application scores in the experimental group (t (22) = 2.35, p = .028), while a significant decrease was observed in the control group

(t (22) = 2.75, p = .012). In the comparisons between the groups across time periods, the difference between the experimental and control groups before the application was not significant (t (22) = 1.72, p = .099), but a significant difference was found in favor of the experimental group after the application (t (22) = 3.22, p = .004).

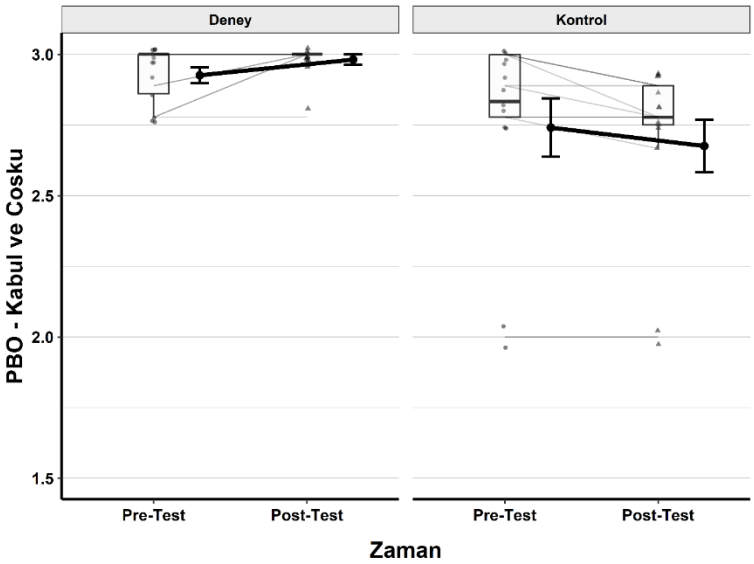

Figure 1Pre-Test and Post-Test Changes in Experimental and Control Groups – Prenatal Attachment, Acceptance and Enthusiasm

Note. Gray dots represent individual scores on pretest and posttest, and gray lines represent change. Box plots show the median for each group and the distribution of the data. Black dots represent group means, and error bars represent standard errors.

Prenatal Bonding – Hope

The effect of mindfulness-based parenting and birth preparation education given to couples on mother-infant attachment during the prenatal period was evaluated. The effect of the education on the mean scores of the hope sub-dimension of the Prenatal Attachment Inventory (PAI) was evaluated with Mixed Measures ANOVA. The analysis results and post-hoc results are given in Table X.

Table 4.5.3. Variance analysis and post-hoc results of the mean scores of the hope sub-dimension of the Prenatal Attachment Scale

Variable	**Experiment**	**Control**	**Test Statistics** [a]	
	$\bar{X}$±ss	$\bar{X}$±ss	t	p
Before Application	2.89 ± 0.09	2.75 ± 0.09	1.09	.286
After Application	2.94 ± 0.09	2.67 ± 0.09	2.20	.038

Test Statistics [b]	t = 1.42 p = .170	t = 2.03 p = .055		
Test Statistics [c]	**F**	***P***	η^2_g	
Group	2.81	.108	.11	
Time	0.19	.671	.00	
Group x Time	5.94	.023	.01	

a: t Test for Independent Samples, b: t Test for Repeated Measures, c: ANOVA for Mixed Measures

The effect of education on the mean scores of the hopes and plans subscale of the Prenatal Attachment Inventory (PAI) was analyzed using mixed measures ANOVA. As a result of the analysis, a significant interaction between group and time was found, F (1, 22) = 5.94, p = .023, $\eta^2 g$ = .01. Although the main effect of group was not significant, F (1, 22) = 2.81, p = .108, $\eta^2 g$ = .11; the main effect of time was also not significant, F (1, 22) = 0.19, p = .671, $\eta^2 g$ = .00.

In the comparisons made regarding the interaction, no significant difference was observed between the scores before and after the application in the experimental group (t (22) = 1.42, p = .170). Similarly, no significant difference was found in the control group (t (22) = 2.03, p = .055). In the comparisons between the groups, no significant difference was observed between the experimental and control groups before the application (t (22) = 1.09, p = .286); however, after the application, the participants in the experimental group received significantly higher scores than the control group (t (22) = 2.20, p = .038).

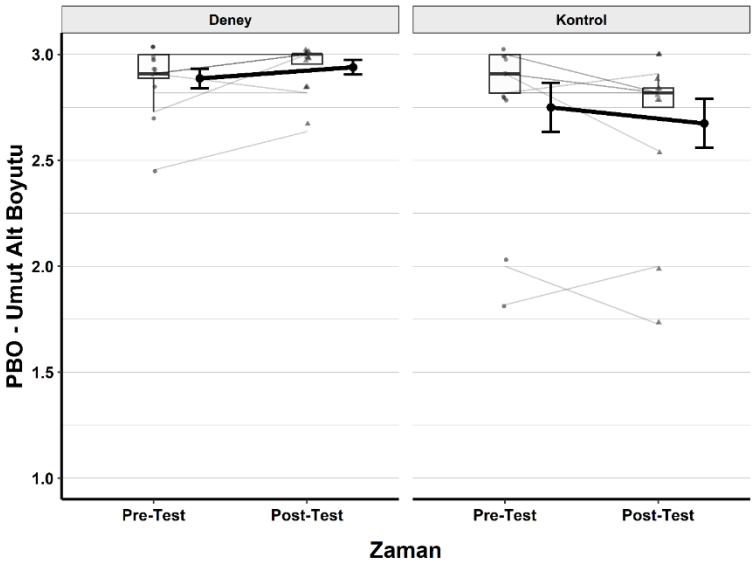

Figure 2Pretest and Posttest Changes in Experimental and Control Groups – Prenatal Attachment Hope

Note. Gray dots represent individual scores on pretest and posttest, and gray lines represent change. Box plots show the median for each group and the distribution of the data. Black dots represent group means, and error bars represent standard errors.

Prenatal Paternal Attachment

The effect of mindfulness-based parenting and birth preparation education given to couples on father attachment during the prenatal process was evaluated. The effect of the education on the mean scores of the Prenatal Father Attachment Scale (PPA) was evaluated with Mixed Measures ANOVA. The analysis results and post-hoc results are given in Table 4.5.

Table 4.6. Variance analysis and post-hoc results of the mean scores of the Prenatal Father Attachment Scale

Variable	**Experiment**	**Control**	**Test Statistics** [a]	
	$\bar{X}$±ss	$\bar{X}$±ss	*t*	*p*
Before Application	4.17 ± 0.13	3.95 ± 0.13	1.21	.240
After Application	4.75 ± 0.10	4.11 ± 0.10	4.72	.000
Test Statistics [b]	t = 8.11 p < .001	t = 2.32 p = .030		
Test Statistics [c]	**F**	***p***	η^2_g	
Group	7.98	.010	.25	
Time	54.41	.000	.20	

Group x Time	16.79	.000	.07	

a: t Test for Independent Samples, b: t Test for Repeated Measures, c: ANOVA for Mixed Measures

The effect of education on the mean scores of the Prenatal Father Attachment Inventory (PPAI) was analyzed using mixed measures ANOVA. According to the analysis results, the main effect of group was significant, F (1, 22) = 7.98, p = .010, $\eta^2 g$ = .25. Similarly, the main effect of time was also significant, F (1, 22) = 54.41, p < .001, $\eta^2 g$ = .20. In addition, a significant interaction was found between group and time, F (1, 22) = 16.79, p < .001, $\eta^2 g$ = .07.

In the comparisons made after the interaction, a significant difference was observed between the scores before and after the application in the experimental group (t = 8.11, p < .001). A statistically significant difference was also found in the control group (t = 2.32, p = .030). In the comparisons made between the groups between the times, no significant difference was found between the experimental and control groups before the application (t = 1.21, p = .240), but the experimental group received significantly higher scores after the application (t = 4.72, p < .001).

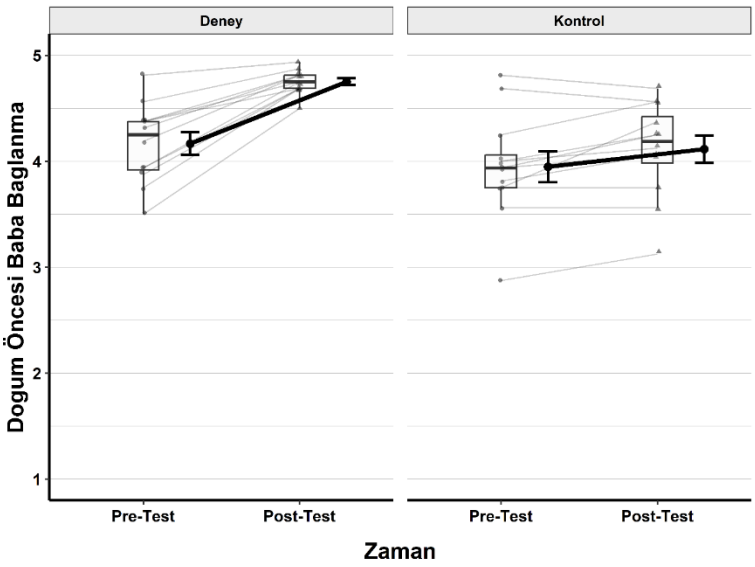

Figure 3Pre-Test and Post-Test Changes in Experimental and Control Groups – Prenatal Paternal Attachment

Note. Gray dots represent individual scores on pretest and posttest, and gray lines represent change. Box plots show the median for each group and the distribution of the data. Black dots represent group means, and error bars represent standard errors.

Prenatal Paternal Attachment – The Nature of Attachment

The effect of mindfulness-based parenting and birth preparation education given to couples on father attachment during the prenatal process was evaluated. The effect of the education on the mean scores of the Prenatal Father Attachment Scale (PAAS) attachment quality sub-dimension was evaluated with Mixed Measures ANOVA. The analysis results and post-hoc results are given in Table X.

Table 4.6.1. Variance analysis and post-hoc results of the mean scores of the Prenatal Paternal Attachment Scale, quality of attachment sub-dimension.

Variable	**Experiment**	**Control**	**Test Statistics [a]**	
	$\bar{X}$±ss	$\bar{X}$±ss	***t***	***P***
Before Application	4.62 ± 0.12	4.36 ± 0.12	1.52	.142
After Application	4.95 ± 0.06	4.68 ± 0.06	3.07	.006
Test Statistics [b]	t = 3.87 p < .001	t = 3.74 p = .001		
Test Statistics [c]	**F**	***p***	η^2_g	
Group	4.70	.041	.15	
Time	28.93	< .001	.20	
Group x Time	0.01	.931	.00	

a: t Test for Independent Samples, b: t Test for Repeated Measures, c: ANOVA for Mixed Measures

The effects of mindfulness-based parenting and childbirth preparation education given to couples on the quality of father-infant attachment in the prenatal process were evaluated using Mixed Measures ANOVA. As a result of the analysis, it was determined that the scores obtained differed statistically significantly according to the groups, F (1, 22) = 4.70, p = .041, η^2_g = .15. The time effect was also found to be significant, F (1, 22) = 28.93, p < .001, η^2_g = .20. However, no significant interaction was found between group and time, F (1, 22) = 0.01, p = .931, η^2_g = .00.

In the comparisons made after the interaction, a significant difference was found between the pre- and post-intervention scores in the experimental group (t = 3.87, p = *.001),* and a similar significant increase was seen in the control group (t =

3.74 , *p* = .001). In the comparisons made between the groups between the times, no significant difference was found between the groups before the intervention (*t* = 1.52, *p* = .142), but after the intervention, the fathers in the experimental group received significantly higher scores (*t* = 3.07, *p* = .006).

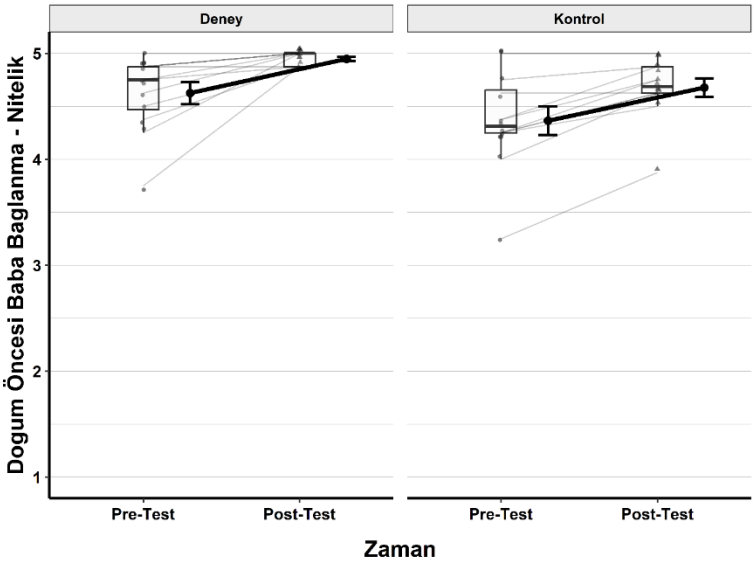

Figure 4Pre-Test and Post-Test Changes in Experimental and Control Groups – Prenatal Father Attachment Quality

Note. Gray dots represent individual scores on pretest and posttest, and gray lines represent change. Box plots show the median for each group and the distribution of the data. Black dots represent group means, and error bars represent standard errors.

Prenatal Paternal Bonding – Making Time for Bonding

The effect of mindfulness-based parenting and birth preparation education given to couples on father attachment during the prenatal process was evaluated. The effect of the education on the time allocation sub-dimension scores of the Prenatal Father Attachment Scale (PAAS) was evaluated with Mixed Measures ANOVA. The analysis results and post-hoc results are given in Table X.

Table 4.6.2. Variance analysis and post-hoc results of the mean scores of the Prenatal Paternal Attachment Scale, time allocation for attachment sub-dimension.

Variable	**Experiment**	**Control**	**Test Statistics** [a]	
	$\bar{X}$±ss	$\bar{X}$±ss	***t***	***P***
Before Application	3.71 ± 0.17	3.53 ± 0.17	1.21	.463
After Application	4.55 ± 0.14	3.55 ± 0.14	5.12	<.001
Test Statistics [b]	t = 7.33, p < .001	t = 0.18, p = .858		

Test Statistics [c]	**F**	***p***	η^2_g	
Group	8.55	.008	.25	
Time	28.20	.000	.15	
Group x Time	25.55	.000	.14	

a: t Test for Independent Samples, b: t Test for Repeated Measures, c: ANOVA for Mixed Measures

The effects of mindfulness-based parenting and birth preparation education given to couples on the time spent on attachment sub-dimension of father-infant attachment during the prenatal process were evaluated using mixed measures ANOVA. As a result of the analysis, a statistically significant difference was found between the groups, $F(1, 22) = 8.55$, $p = .008$, $\eta^2g = .25$. A significant difference was also observed according to the time variable, $F(1, 22) = 28.20$, $p < .001$, $\eta^2g = .15$. In addition, a significant interaction was found between the group and time variables, $F(1, 22) = 25.55$, $p < .001$, $\eta^2g = .14$.

In the comparisons made after the interaction, it was determined that there was a significant difference between the scores before and after the application in the experimental group ($t = 7.33$, $p < .001$). In contrast, this difference was not significant in the control group ($t = 0.18$, $p = .858$). In the comparisons between the groups, no significant difference was found before the application ($t = 0.75$, $p = .463$), but after the application, the experimental group received significantly higher scores than the control group ($t = 5.12$, $p < .001$).

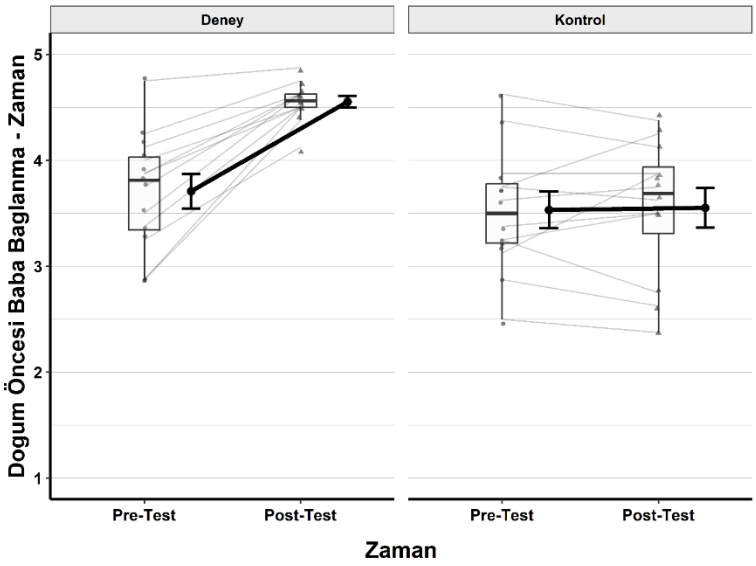

Figure 5Pre-Test and Post-Test Changes in Experimental and Control Groups – Prenatal Father Attachment Time Allocating for Attachment

Note. Gray dots represent individual scores on pretest and posttest, and gray lines represent change. Box plots show the median for each group and the distribution of the data. Black dots represent group means, and error bars represent standard errors.

Fathers' Fear of Childbirth Scale

Fathers' Fear of Childbirth - Hospital

The effect of mindfulness-based parenting and childbirth preparation education given to couples on fathers' fear of childbirth during the prenatal period was evaluated. The effect of the education on the mean scores of the hospital fear sub-dimension of the Fathers' Fear of Childbirth Scale (FBS) was evaluated with Mixed Measures ANOVA. The analysis results and post-hoc results are given in Table X.

Table 4.7.1 Variance analysis and post-hoc results of the mean scores of the hospital fear sub-dimension of the Fear of Childbirth Scale for Fathers (FBS)

Variable	**Experiment**	**Control**	**Test Statistics [a]**	
	$\bar{X}$±**ss**	$\bar{X}$±**ss**	***t***	***P***
Before Application	3.25 ± 0.34	2.77 ± 0.34	1.00	.329
After Application	1.70 ± 0.30	2.53 ± 0.30	1.98	.061
Test Statistics [b]	t = 5.43 p < .001	t = 0.82 p = .423		
Test Statistics [c]	**F**	***P***	η^2_g	

Group	0.19	.671	.01	
Time	19.51	< .001	.15	
Group x Time	10.64	.004	.09	

a: t Test for Independent Samples, b: t Test for Repeated Measures, c: ANOVA for Mixed Measures

of mindfulness-based parenting and childbirth preparation education given to couples on *the fear of hospital* sub-dimension of fathers' fear of childbirth were evaluated using mixed measures ANOVA. No significant difference was found between the groups, F (1, 22) = 0.19, p = .671, $\eta^2 g$ = .01. The time effect was found to be significant, F (1, 22) = 19.51, p < .001, $\eta^2 g$ = .15. In addition, a significant interaction was found between group and time variables, F (1, 22) = 10.64, p = .004, $\eta^2 g$ = .09.

In the comparisons made after the interaction, a significant difference was found between the scores before and after the application in the experimental group (t = 5.43, p < .001). This difference was not significant in the control group (t = 0.82, p = .423). In the comparisons between the groups, no significant difference was found before the application (t = 1.00, p = .329); after the application, although the scores of the experimental group were not statistically significant compared to the control group, they showed a tendency close to significance (t = 1.98, p = .061).

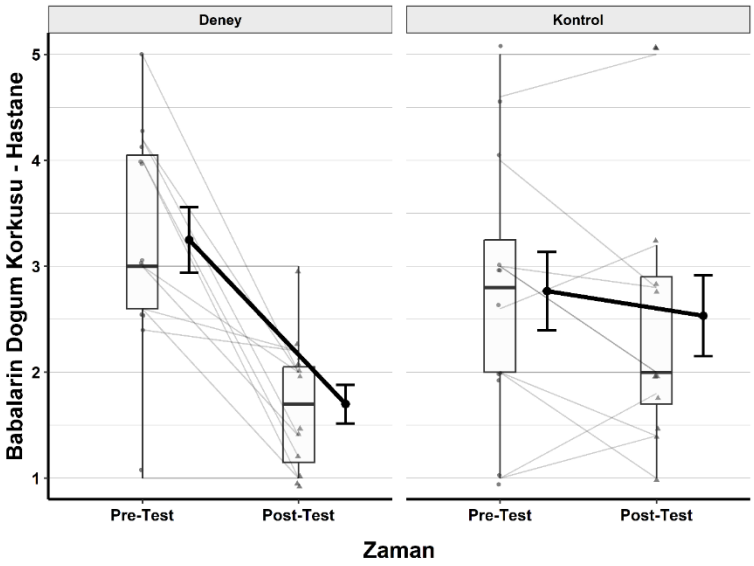

Figure 6Pre-Test and Post-Test Changes in Experimental and Control Groups – Fathers' Fear of Childbirth – Fear of Hospital

Note. Gray dots represent individual scores on pretest and posttest, and gray lines represent change. Box plots show the median for each group and the distribution of the data. Black dots represent group means, and error bars represent standard errors.

Fathers' Fear of Childbirth – The Birth Process

The effect of mindfulness-based parenting and childbirth preparation education given to couples on fathers' fear of childbirth during the prenatal period was evaluated. The effect of the education on the mean scores of the sub-dimension of the Fear of Childbirth Scale for Fathers (FBDSI) was evaluated with Mixed Measures ANOVA. The analysis results and post-hoc results are given in Table X.

Table 4.7.2. Variance analysis and post-hoc results of the mean scores of the Fear of Childbirth Scale for Fathers (FBS) in the sub-dimension of fear of childbirth process

Variable	**Experiment**	**Control**	**Test Statistics** [a]	
	$\bar{X}$±**ss**	$\bar{X}$±**ss**	***t***	***P***
Before Application	3.26 ± 0.32	3.56 ± 0.32	0.68	.502
After Application	2.32 ± 0.28	3.33 ± 0.28	2.59	.017
Test Statistics [b]	t = 5.26 p < .001	t = 1.29 p = .212		
Test Statistics [c]	**F**	***p***	η^2_g	
Group	2.70	.114	.10	
Time	21.44	< .001	.08	

Group x Time	7.90	.010	.03	

a: t Test for Independent Samples, b: t Test for Repeated Measures, c: ANOVA for Mixed Measures

The effects of mindfulness-based parenting and childbirth preparation education given to couples during the prenatal period on fathers' fear of the birth process were evaluated using mixed measures ANOVA. As a result of the analysis, no significant difference was observed between the groups, F (1, 22) = 2.70, p = .114, η^2g = .10. A significant difference was found according to the time variable, F (1, 22) = 21.44, p < .001, η^2g = .08. In addition, the group and time interaction was found to be significant, F (1, 22) = 7.90, p = .010, η^2g = .03.

In the comparisons made after the interaction, it was determined that there was a significant difference between the scores before and after the application in the experimental group (t = 5.26, p < .001). This difference was not significant in the control group (t = 1.29, p = .212). In the comparisons between the groups, no significant difference was found before the application (t = 0.68, p = .502), but after the application, the scores of the experimental group were significantly lower than those of the control group (t = 2.59, p = .017).

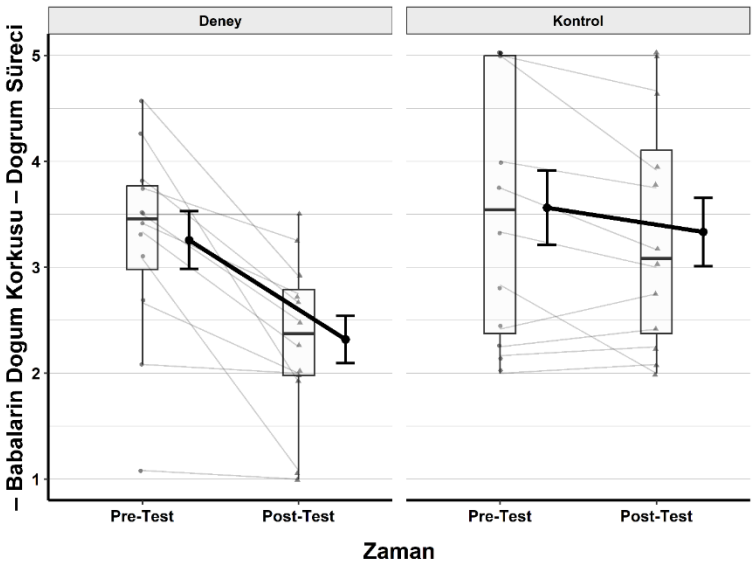

Figure 7Pre-Test and Post-Test Changes in Experimental and Control Groups – Fathers' Fear of Childbirth – Fear of the Birth Process

Note. Gray dots represent individual scores on pretest and posttest, and gray lines represent change. Box plots show the median for each group and the distribution of the data. Black dots represent group means, and error bars represent standard errors.

Mothers' Fear of Childbirth

The effect of mindfulness-based parenting and childbirth preparation education given to couples on the fear of childbirth in mothers before birth was evaluated. The effect on the mean scores of Wijma Childbirth Expectation/Experience Scale Version A (WBSES-A) was evaluated with Mixed Measures ANOVA. The analysis results and post-hoc results are given in Table X.

Table 4.8. Variance analysis and post-hoc results of Wijma Birth Expectation/Experience Scale Version A (WBDBS-A) mean scores

Variable	**Experiment**	**Control**	**Test Statistics [a]**	
	$\bar{X}$±**ss**	$\bar{X}$±**ss**	***t***	***P***
Before Application	1.65 ± 0.33	1.85 ± 0.33	0.43	.674
After Application	0.55 ± 0.17	1.48 ± 0.17	3.86	.001
Test Statistics [b]	t = 5.60 p < .001	t = 1.91 p = .069		
Test Statistics [c]	**F**	***P***	η^2_g	
Group	2.68	.116	.09	
Time	28.20	< .001	.15	
Group x Time	6.79	.016	.04	

a: t Test for Independent Samples, b: t Test for Repeated Measures, c: ANOVA for Mixed Measures

The effects of mindfulness-based parenting and childbirth preparation education given to couples on the levels of expectations and fears about childbirth during the prenatal period were evaluated using the Wijma Childbirth Expectation/Experience Scale Version A (WBSES-A). The effect of the application was analyzed with ANOVA for mixed measures.

According to the analysis results, no significant difference was observed between the groups, F (1, 22) = 2.68, p = .116, $\eta^2 g$ = .09. However, a significant difference was found according to the time variable, F (1, 22) = 28.20, p < .001, $\eta^2 g$

= .15. In addition, a significant interaction was found between the group and time variables, F (1, 22) = 6.79, p = .016, $\eta^2 g$ = .04.

In the comparisons made after the interaction, it was determined that there was a significant difference between the pre- and post-application scores in the experimental group (t = 5.60, p < .001). This difference was not significant in the control group (t = 1.91, p = .069). In the comparisons between the groups, no significant difference was found between the pre-application scores (t = 0.43, p = .674), and a significant difference was observed in favor of the experimental group after the application (t = 3.86, p = .001).

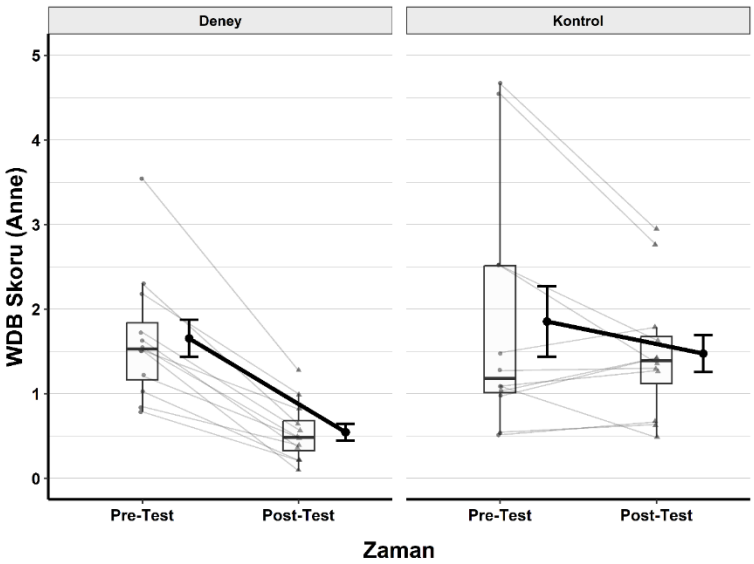

Figure 8Pre-Test and Post-Test Changes in Experimental and Control Groups – Fathers' Fear of Childbirth – Fear of the Birth Process

Note. Gray dots represent individual scores on pretest and posttest, and gray lines represent change. Box plots show the median for each group and the distribution of the data. Black dots represent group means, and error bars represent standard errors.

Birth Mode Expectations – By Groups

The agreement between birth expectation and actual birth type was evaluated separately in the experimental and control groups. In the experimental group (n = 12), a high level of agreement was observed between birth type expectation and actual birth. 10 (83.3%) of the participants gave birth in accordance with their birth expectations. 8 of them expected a vaginal birth and gave birth vaginally, and 2

expected a cesarean birth and gave birth by cesarean. The remaining 2 participants did not have an expected birth type.

In the control group (n = 12), 8 participants (66.7%) gave birth in accordance with their birth expectations, while the birth method did not match the expectations of 4 participants. Although there was a difference between these compliance rates, according to the Chi-square test results, this difference was not found to be statistically significant, $\chi^2(1, N = 24) = 0.22$, $p = .637$.

As a result, a higher concordance between the expectation of the type of birth and the actual birth was observed in the experimental group that received awareness-based childbirth preparation training, but this difference was not statistically significant.

When the type of birth was examined, 66.7% (n=16) of all participants had vaginal birth and 33.3% (n=8) had cesarean section. While 75% of the participants in the intervention group had vaginal (n=9) and 25% had cesarean section (n=3), 58.3% of the participants in the control group had vaginal (n=7) and 41.7% had cesarean section (n=5). According to the chi-square test results, the vaginal birth rate was higher in the experimental group, but this difference was not found to be statistically significant, $\chi^2(1, N = 24) = 0.75$, p=.386.

Differentiation of Postpartum Factors According to Groups

In the section related to the postpartum period, various psychometric scales were used to evaluate the postpartum processes of the participants. These scales are: Wijma Birth Expectation/Experience Scale – B (WBSES-B), Postpartum Self-Assessment Scale (PSS), Maternal Attachment Scale (MAS) and Father Infant Attachment Scale (FBAS). In order to examine the differences between the experimental and control groups on all or sub-dimensions of the scales, t-test for independent samples was applied. The analysis results are given in Table XX.

Table 4.9 Comparison of the Scores of the Experimental and Control Groups on the Postpartum Period Scales (T-Test Results for Independent Samples)

	Experiment	**Control**		
Variable	$\bar{X}$ ± **ss**	$\bar{X}$ ± **ss**	*t*	*p*
Wijma Birth Expectation/Experience Scale – B (WDBDÖ-B)	1.94 ± 0.42	2.93 ± 1.28	-2.54	0.024
Postpartum Self-Evaluation Scale (PSS)	3.70 ± 0.41	3.36 ± 0.53	1.75	0.094
PKDÖ - Quality of Relationship Between Spouses	3.74 ± 0.49	3.42 ± 0.58	1.45	0.162
PKDÖ - Partners' Perspective on Participation in Baby Care	3.77 ± 0.47	3.51 ± 0.62	1.18	0.250
PKDÖ - Satisfaction with Birth Experience	3.65 ± 0.44	3.10 ± 0.67	2.38	0.028
PKDÖ - Contentment with the Continuity of Life	3.50 ± 0.65	3.14 ± 0.78	1.22	0.235
PKDÖ - Relying on Strength to Cope with Motherhood Duties	3.71 ± 0.37	3.35 ± 0.52	1.93	0.068
PKDÖ - Satisfaction with Motherhood and Newborn Care	3.72 ± 0.29	3.49 ± 0.44	1.57	0.134
PKDÖ - Support for Motherhood from Family and Friends	3.76 ± 0.50	3.42 ± 0.65	1.44	0.164
Father-Infant Attachment Scale (FBA)	4.24 ± 0.50	3.92 ± 0.75	1.23	0.234
BBBÖ - Patience-Tolerance	4.01 ± 0.49	3.78 ± 0.61	1.01	0.323
BBBÖ - Pleasure in Interaction	4.23 ± 0.66	3.87 ± 0.96	1.06	0.300
BBBÖ - Love-Pride	4.73 ± 0.34	4.29 ± 0.74	1.85	0.084
Maternal Attachment Scale (MAS)	3.95 ± 0.11	3.53 ± 0.52	2.71	0.019
VAS Pain Scale	5.42 ± 1.73	6.58 ± 1.78	-1.63	0.118

According to the analysis results, the Wijma Birth Expectation/Experience Scale – B (WBSES-B) scores were found to be significantly lower in the experimental group, indicating that the experimental group had less fear of childbirth (t = -2.54, p = .024).

Similarly, it was found that the experimental group was more satisfied with the birth experience (PCAS - Satisfaction with Birth Experience sub-dimension; t = 2.38, p = .028). In addition, maternal attachment levels were found to be significantly higher in the experimental group (MBS; t = 2.71, p = .019).

No significant difference was found between the experimental and control groups in other scales and sub-dimensions (p > .05). However, results close to significance were observed in some variables such as relying on power in coping with maternal duties (t = 1.93, p = .068) and love-pride sub-dimension (t = 1.85, p = .084).

5.DISCUSSION

This research is about the effects of mindfulness-based parenting and birth preparation education given to couples. maternal-paternal bonding, birth parameters and postpartum sleep effects were determined. The findings obtained The effects on birth expectation/experience, delivery method, parent-infant bonding and postpartum adjustment are discussed under the headings.

The effect of Mindfulness-Based Parenting and Childbirth Preparation Education on birth expectation/experience (awareness, fear, pain);

Awareness

the mothers in the intervention and control groups before and after the application from the BFÖ differed statistically significantly according to the groups of the participants (p = .017). It was also found that there was a statistically significant difference according to time (p = .032). In addition, a significant interaction was observed between group and time (p = .001). (Table).

the fathers in the intervention and control groups before and after the application from the BFÖ differed statistically significantly according to the groups of the participants (p = .006). It was also found that there was a statistically significant difference according to time (p = .001). In addition, a significant interaction was observed between group and time (p = .004) (Table).

These findings show that Mindfulness-Based Parenting and Childbirth Preparation Education was effective in increasing the level of conscious awareness of pregnant women and their partners in the intervention group. The increase in the mean conscious awareness scores after the intervention may indicate that it strengthened the capacity of pregnant women and their partners to stay in the moment, to be aware of their inner experiences, and to feel self-compassion towards themselves.

These findings confirm our hypothesis that *"Mindfulness-based parenting and childbirth preparation education has an effect on parents' conscious awareness levels."*

on the subject were examined, it was found that mindfulness-based interventions applied to women during the perinatal period increased the levels of mindfulness (Duncan, 2017; Pan et al., 2019; Byrne et al., 2014; Pan et al., 2019; Rasmusson, 2022; Beattie et al., 2017; Byrne et al., 2014; Yang et al. 2019, Fernandes et al. 2022, Hulsbosch et al. 2023). Pan et al. (2019), Duncan and Bardacke (2010) and Duncan et al. (2017) found that the mindfulness levels of women increased significantly as a result of the MBCP training they conducted. Pan et al. (2019a), Zarenejad et al. (2020), Lönnberg et al. 2021, Veringa-Skiba et al. 2022b, Zhang et al. The study by 2023b, Warriner et al., 2018 and Guo et al. (2020) also supports the increased level of awareness.

Recently, health professionals have been trying to attract fathers' attention and increase their awareness of childbirth and parenting preparation training (Ferguson et al., 2013). Studies have found that childbirth and parenting preparation training increases spousal support during pregnancy and postpartum periods and that spouses' participation in the process increases after the training. Fathers' participation in prenatal training prepares fathers for the experiences that will be experienced during pregnancy and childbirth, raises their awareness and improves their supportive roles (Ferguson, Davis, and Browne 2013). A study found a significant difference in the mean awareness scores of fathers who received MBCP training before and after the training (Sian Warriner, 2018). These results show that although the application method

and duration of MBCP training differ in the studies, it has a positive effect on conscious awareness and explains that our results are parallel to the literature.

Fear

In this study, the mean scores of WBDDS-A used to assess the fear of childbirth in the prenatal period were investigated. According to the analysis results, a significant difference was found between the intervention and control groups according to the time variable ($p < .001$). In addition, a significant interaction was found between the group and time variables ($p = .016$). In the comparisons made after the interaction, a significant difference was determined between the pre- and post-education scores in the intervention group ($p < .001$). This difference was not significant in the control group ($p = .069$). In the comparisons between the groups, a significant difference was observed in favor of the experimental group after the application ($p = .001$). (Table). According to the analysis results regarding the mean WBDDS-B scores used to measure the level of fear experienced by mothers regarding birth during and after labor, a significant difference was found between the intervention and control groups (0.024). (table).

According to the BDKS used to evaluate the effect of mindfulness-based parenting and birth preparation education given to couples on fathers' fear of birth in the prenatal period **…….. (Table).**

These findings show that Mindfulness-Based Parenting and Childbirth Preparation Education was effective in reducing the level of fear related to childbirth in the pregnant women and their partners in the intervention group.

These findings confirm our hypothesis that ***"Mindfulness-based parenting and childbirth preparation education has an effect on fear of childbirth in parents."***

In support of our findings, Çankaya and Şimşek (2020) found that primiparous pregnant women who received prenatal education had lower levels of fear of childbirth compared to women in the control group, both before and after birth, and prenatal education was found to be effective in reducing fear of childbirth.

Veringa et al. (2016) and Van der Meulen et al. (2023), (Pour-Edalati et al. (2018) , Rasmusson (2022), Kavas (2024, thesis), Abdolalipour et al., 2023, Ertuğrul, 2016; Kuo et al., 2022, Li et al., 2022, Alaçam (2024, thesis) findings also support our hypothesis. In the light of these findings, it is possible to say that those who participated in mindfulness-based birth and parenting education had more positive experiences during pregnancy, birth and the postpartum process compared to classical education. At the same time, since false beliefs and information originating from myths were replaced by correct and positive information about birth, this situation may have been effective in reducing fear. When the research results in the literature are examined, it is seen that these programs can be a potentially useful resource that can improve birth outcomes by being integrated into the prenatal education curriculum, considering that mindfulness-based interventions reduce the level of fear of birth .

In a study conducted by Byrne et al. (2014), fear of childbirth increased in both groups after mindfulness training; however, the increase was greater in the control group. Considering that the effectiveness of the training was not at the desired level and there was no decrease in fear of childbirth scores, this suggests that women may not have spent enough time on homework. In a qualitative study conducted by Fisher et al. (2012), it was stated that mindfulness practice was most useful during childbirth and early parenthood and that its applicability during pregnancy was limited. This result shows that home practices should be emphasized in future studies of mindfulness training given to pregnant women and that women should be encouraged to participate in the practice by determining the obstacles to this.

Parallel to these findings, a qualitative study found that prenatal education reduced anxiety and fear in some women and increased it in others (Serçekuş and Mete, 2010). In addition, as women enter the last trimester of pregnancy, the thought of labor makes the pregnant woman anxious (Khanjari et al., 2017). These data may indicate that there is an increase in the level of fear due to the fact that pregnant women are in the last trimester, the unknowns about birth, and the approaching birth. Another study conducted for two weeks and in a total of four sessions found that the mean WDEQ-A scores were higher in the

intervention group (Akın, 2023, thesis). In the mentioned study, the limited duration of the education and the limited number of sessions due to the COVID-19 pandemic may have hindered the effectiveness of the education. In the same study, it was found that the mean WDEQ-B scores after birth were not statistically significant in the intervention and control groups. These data also make us think that keeping the number of sessions and duration of training short, giving only homework, and not monitoring the actual time spent on homework in a controlled manner may reduce the effectiveness of the training.

Pain

In this study, although it was determined that the mean scores of the mothers in the intervention and control groups from the VAS pain scale before and after the application did not differ statistically significantly according to the groups of participants ($p = 0.118$), the mean score of the control group (6.58 ±1.78) is higher than the mean score of the intervention group (5.42±1.73). Although it did not create a significant difference, the findings are clinically significant (Table).

These findings confirm our hypothesis that ***"Mindfulness-based parenting and childbirth preparation education has no effect on pain."***

MBCP training provides access to deep internal resources to cope with pain (Mindfulbirthing, 2025). In studies based on mindfulness, pain intensity was found to be lower in intervention groups compared to control groups (Ahmadi and Bagheri, 2017; McLachlan et al. (2015); Oskoui et al., 2023 ; Van der Meulen et al., 2023 ; Guo and Lei, 2022 ; Ertuğrul, 2016; Gür, 2020; Li et al., 2021 ; Pan et al., 2020). It was concluded that there was a trend towards a decrease in the use of opioid analgesia during labor in a birth preparation education based on mindfulness (Duncan et al., 2017). This suggests that the group that received the education was better able to cope with labor pain. In a study examining mind-body interventions, it was concluded that mindfulness-based practices were effective in relieving the severity of labor pain but did not reduce the use of epidural analgesia (Wang et al., 2024). There are a limited number of studies in the literature evaluating the effects of mindfulness-based

practices on labor pain outcomes. and since the evidence in these studies is inconsistent, further randomized controlled trials are needed.

The reason for our result, which is not parallel with the literature , may be due to the fact that we did not perform a mindfulness intervention during labor. Providing mindfulness-based counseling in the delivery room by an experienced researcher with a certificate in mindfulness skills may increase the effectiveness of the intervention. Accordingly, women can better manage labor pain by using mindfulness skills and their active participation in the labor process can create an enjoyable birth experience for them. These interventions may serve as complementary or alternative methods for labor pain management in clinical practice.

The effect of Awareness-Based Parenting and Childbirth Preparation Education on the mode of birth;

In this study, the concordance between birth expectation and actual birth type was evaluated separately in the experimental and control groups. In the experimental group (n = 12), a high level of concordance was observed between birth type expectation and actual birth. 10 (83.3%) of the participants gave birth in accordance with their birth expectations. 8 of them expected a vaginal birth and gave birth vaginally, and 2 expected a cesarean section and gave birth by cesarean. The remaining 2 participants' birth type did not match their expectations. In the control group (n = 12), 8 participants (66.7%) gave birth in accordance with their birth expectations, while 4 participants' birth type did not match their expectations. Although there was a difference between these concordance rates, this difference was not found to be statistically significant according to the Chi-square test results (p = .637). As a result, a higher concordance was observed between birth type expectation and actual birth in the experimental group that received awareness-based birth preparation training, but this difference was not statistically significant but clinically significant.

In addition, although the vaginal birth rate appeared to be higher in the intervention group, no significant difference was found between the groups (p=.386). (Table). However, these findings are clinically significant.

These findings confirm our hypothesis that ***" Mindfulness-based parenting and childbirth preparation education has no effect on the type of birth that occurs."***

When the literature is examined, there are studies reporting that childbirth preparation training can affect women's preference for delivery method and increase vaginal delivery (Mete et al., 2017; Serçekuş and Başkale, 2016; Esencan et al., 2018 ; Delaram and Aein 2012; Bergström, Kıeler, and Waldenström 2009; Okumuş et al. 2002; Stoll and Hall 2012). In a systematic review including 17 studies, it was found that childbirth preparation training increased the rate of vaginal delivery (Buran et al. 2020).

Contrary to these results , some studies have found that the cesarean section rates were similar between the intervention group and the control group (Ferguson et al., 2013). In a study conducted in Austria in which 100 nulliparous women participated, the women received structured education. As a result of the study, no difference was found between the two groups in terms of delivery method (Phipps et al., 2009). Another study found that the rate of birth with intervention was higher in those who attended a childbirth preparation class (Ferguson et al., 2013).

When the women in our study were evaluated in terms of birth type, it was determined that 25% of the women in the intervention group and 41.7% of the women in the control group had a cesarean section. 33.3% of all participants had a cesarean section. According to the TNSA report, 52% of all births in Türkiye are cesarean sections (TNSA, 2018). The data we obtained as a result of the study are below the average in Turkey and show that this situation is effective in reducing cesarean section rates regardless of classical education or mindfulness-based education. There is limited data in the literature on mindfulness-based interventions on birth type in pregnant women. In one study, the vaginal birth rate in pregnant women who received mindfulness

training was 65%, while vaginal birth was 40% in pregnant women who did not receive mindfulness training (Akın, 2023). This finding is striking. In the study by Veringa et al. (2022), it was found that the rate of elective cesarean section was lower in pregnant women who received mindfulness-based parenting and birth preparation training compared to pregnant women who received standard care. It is stated in the literature that psychoeducation-based prenatal education programs contribute to a positive birth experience and significantly affect the preference for vaginal birth (Rouhe et al., 2015; Taheri et al., 2014; Toohil et al., 2017; Sezen and Ünsalver, 2019; Bayrı Bingöl et al., 2022; Çankaya and Şimşek, 2020; MacKinnon et al., 2021). The literature findings are consistent with the findings of this study. Mindfulness-based education given before birth allows women to trust their own birth skills, and this can be offered as an effective intervention to prevent non-emergency obstetric interventions and elective cesarean section by reducing the fear of birth. Since high cesarean section rates are an important problem that negatively affects maternal and infant health and increases health expenditures and costs, awareness-based interventions can provide positive outcomes for the country's economy by reducing the economic burden of cesarean section.

The Effect of Mindfulness-Based Parenting and Childbirth Preparation Education on Parent-Infant Attachment

The prenatal attachment level of mothers was measured with the PBİ. Comparisons between groups showed that there was a significant difference between the PBİ scores before and after the intervention in the intervention group ($p < .001$). This difference was not significant in the control group ($p = .116$). Comparisons between groups between times showed that the participants in the intervention group had significantly higher scores after the intervention ($p = .025$). (Table).

The prenatal attachment level of fathers was measured with the ESRS. A significant difference was observed between the pre- and post-intervention scores in the intervention group ($p < .001$). A statistically significant difference was also found in the control group ($p = .030$). In the comparisons made

between the groups between the times, the intervention group scored significantly higher after the application ($p < .001$). (Table).

These findings confirm our hypothesis that ***"Mindfulness-based parenting and childbirth preparation education has an effect on prenatal maternal and paternal attachment."***

Postpartum attachment levels of mothers were measured with the MBI and maternal attachment levels were found to be significantly higher in the intervention group ($p = .019$). Postpartum attachment levels of fathers were measured with the BBBI and no significant difference was found between the intervention and control groups in terms of postpartum paternal attachment levels ($p = .234$).

These findings; " ***Mindfulness-based parenting and birth preparation education has an impact on postpartum maternal*** It confirms our hypothesis that "Mindfulness-based parenting and childbirth preparation education ***has no effect on postpartum paternal attachment." and*** also confirms our hypothesis that ***"Mindfulness-based parenting and childbirth preparation education has no effect on postpartum paternal attachment."***

When the literature is examined, Serçekuş and Başkale (2016) found that prenatal education had no effect on postnatal attachment to mother and father. In Akın (2023)'s thesis study, the total MBI score average between the intervention and control groups was not found to be statistically significant. The lack of significant maternal attachment suggests that parents do not continue conscious awareness practices after birth, and that their roles and responsibilities increase in the postnatal period and that they may have difficulty in allocating time for formal and informal practices, which negatively affects the effectiveness and sustainability of the education.

On the other hand, there are also study results showing that education is effective in prenatal attachment in primiparous pregnant women (Abasi et al., 2013; Akbarzadeh et al., 2017; Nasari et al., 2021; Sağıroğlu, 2025; Sajadian et al., 2022; Ibıcı Akca et al., 2023). It has been stated that pregnant women

who participated in mindfulness-based education experienced better connection with their newborn babies compared to the control group (Beattie et al., 2017). In the study of Duncan and Shaddix (2015), it was concluded that mindfulness-based birth and parenting education can facilitate healthy parent-child attachment by supporting being in the moment, non-judgmental awareness and compassion. In studies that provided conscious awareness-based birth preparation training and examined postpartum maternal attachment levels, attachment levels in the intervention group were found to be significantly higher compared to the control group (Körükcü and Kukulu, 2017; Gheibi et al., 2020). These results show that conscious awareness-based interventions have positive effects on prenatal and postpartum attachment processes.

In the systematic review and meta-analysis study conducted by Dhillon, Sparkes, and Duarte (2017), it was shown that mindfulness practices during pregnancy contribute to the mother's development of a greater understanding of herself and her environment, which in turn increases both mother-infant bonding and the mother's positive feelings about herself.

The limited number of studies on the effects of mindfulness interventions on attachment keeps the data in the existing literature limited. This situation has revealed the need for new research that will comprehensively address the effects of mindfulness-based interventions on attachment.

The Effect of Mindfulness-Based Parenting and Childbirth Preparation Education on Postpartum Sleep –pkdö Scale

Postpartum adjustment levels of mothers were measured with PBDS and it was found that the intervention control group was more satisfied with the birth experience (PBDS - Satisfaction with Birth Experience sub-dimension; $t = 2.38$, $p = .028$). However, no significant difference was found between the intervention and control group PBDS total scores ($p = 0.094$) (Table).

These findings confirm our hypothesis that ***"Mindfulness-based parenting and childbirth preparation education has no effect on postpartum sleep."***

Parallel to our findings; in the studies conducted on the effect of education on postpartum sleep, Serçekuş (2010), Arcamone (2005) and Bergström et al. (2009) found that there was no significant difference in women's postpartum adaptation scores compared to the control group. This result can be interpreted as the fact that the women in the group receiving classical education also received education about the postpartum process and therefore did not create a significant difference. Nichols (1995) found that education did not affect the sense of competence for motherhood and did not make the transition to motherhood easier. Different studies have also found that education has no effect on women's parenting skills (Fabian et al., 2005; Lumney and Brown, 1993; Willford, 1998). Barclay et al. (1997) emphasized in their qualitative study that some of the women who received education thought that the education was useful in preparing for birth but useless in preparing for parenthood. Deave et al. (2008) and Ho and Holroyd (2002) found that women thought that the education they received was insufficient to prepare them for motherhood. Although the content of the education given in the antenatal period included topics related to postpartum adaptation, women may not be able to focus sufficiently on postpartum issues because their attention is directed to the upcoming birth. Another reason may be that the postpartum self-assessment scale was applied after the fourth week postpartum in the study. Because discomfort, fatigue, and breastfeeding problems experienced in the postpartum period are often more intense in the first weeks (London et al., 2003). The resolution of most of these problems after the fourth week may have closed the difference between the groups that received the training and the control group. For these reasons, the application of the postpartum self-assessment scale in the first weeks postpartum may provide a more accurate interpretation of the results. In addition, the increase in the expectations of some women after the training and the failure of some women to meet their expectations may be the reason why the satisfaction score with the birth experience was not much higher in the intervention group compared to the control group.

In contrast to these results, Schachman and colleagues (2004) found that a new education program developed for adaptation to the role of motherhood had a positive effect on postpartum adaptation compared to the standard education program. When the mean scores of the PBAS and subscales were evaluated in terms of education groups in similar studies, it was determined that the adaptation rates of mothers who received childbirth preparation education were better and the difference was significant in all groups (Doğan Merih et al., 2017; Başar and Arıöz, 2017). This finding can be explained by the effectiveness of the education given in the childbirth preparation class. Similar studies have also found that women who received education had a high adaptation to their role as mothers (Lumney and Brown, 1993; Lu et al., 2003; Mete et al., 2017); it was concluded that mothers' social support networks increased in education classes, they continued their communication with each other in the postpartum period, and they facilitated the adaptation process by supporting each other (Deave et al., 2008; Fabian et al., 2005). Studies examining the effectiveness of 8-week mindfulness-based training in first-time mothers have shown that the intervention supports postpartum adaptation ($p<0.05$) (Ocak Aktürk, 2023; Sajadian et al., 2022). In a study with results contrary to our findings, it was determined that the difference between the mean scores of mothers in the intervention and control groups in all sub-dimensions of the scale (except satisfaction with the birth experience) was statistically significant (Demir and Taşpınar, 2022).

When we look at the literature findings parallel to the significance in our satisfaction with birth experience sub-dimension, it has been concluded that awareness-based trainings increase the psychological and spiritual well-being of women and their partners and improve the birth experience (Shorey and Ng, 2020). Fisher and colleagues (2012) stated in their qualitative study that women who received antenatal training felt strong during birth, did not lose control even when unplanned situations occurred, and were satisfied with the birth experience (Fisher, 2012; Quine et al., 1993). According to the results of a study, when the fear-tension-pain cycle is intervened, the fear and pain chain is broken, the birth duration is shortened, and the satisfaction with the birth

experience is positively affected ($p<0.05$) (Ertuğrul, 2016-thesis). These results may show us that antenatal training helps the woman maintain control throughout the birth and positively affects her satisfaction with the birth experience.

6. SUGGESTIONS

7. RESOURCES

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