



Reconnecting with the Self and Fetus through Mindfulness: Supporting Inner Balance and Bonding during Pregnancy

Farkındalık Yoluyla Öz ve Fetüs ile Yeniden Bağ Kurma: Gebelikte İçsel Denge ve Bağlanmanın Desteklenmesi

 Ebru Sağıroğlu¹,  Esmanur Körsü²

¹Fenerbahçe University, İstanbul

²Üsküdar University, İstanbul

ABSTRACT

Pregnancy is a complex period during which women experience profound physical, emotional, and social changes. Hormonal fluctuations, physiological transformations, and environmental factors during pregnancy can contribute to a range of psychosocial and psychiatric issues, such as stress, fear of childbirth, anxiety, and depression. In recent years, mindfulness-based approaches have been increasingly utilized to support emotional regulation and enhance coping skills during pregnancy. This review explores the effects of mindfulness-based interventions on managing stress, anxiety, and depressive symptoms during pregnancy, and on supporting maternal-fetal bonding, within the framework of the "Disconnect to Reconnect" model. Numerous studies have demonstrated that Mindfulness-Based Stress Reduction (MBSR) and Mindfulness-Based Childbirth and Parenting (MBCP) programs are effective in reducing stress and anxiety, as well as alleviating depressive symptoms. Furthermore, several studies have reported that these programs contribute to a reduced fear of childbirth, enhanced childbirth-related self-efficacy, and strengthened maternal-fetal attachment. Some research also suggests that mindfulness practices have a positive influence on body image, increase self-compassion, and facilitate adaptation to breastfeeding during the postpartum period. Mindfulness-based interventions have emerged as promising tools to promote psychological and physical well-being during pregnancy. Future studies are recommended to examine their long-term effects in greater depth.

Keywords: Anxiety, mindfulness, depression, perinatal mental health, psychological stress

ÖZ

Gebelik, kadınların bedensel, ruhsal ve sosyal açıdan büyük değişimler yaşadığı, karmaşık bir süreçtir. Gebelikte hormonal dalgalanmalar, fiziksel değişiklikler ve çevresel etkenler; stres, doğum korkusu, anksiyete ve depresyon gibi psikososyal ve psikiyatrik sorunlara zemin hazırlayabilir. Gebelikte ruhsal dengeyi desteklemek ve stresle başa çıkma becerilerini artırmak amacıyla mindfulness temelli yaklaşımların kullanımı artmaktadır. Bu derlemede "Farkındalıkla Bağlantıyı Kes, Yeniden Bağlan" yaklaşımı temel alınarak mindfulness temelli müdahalelerin gebelik sürecinde stres, anksiyete ve depresyon yönetimine katkıları ile maternal-fetal bağlanmayı destekleyici etkileri incelenmiştir. Birçok araştırma, Mindfulness Temelli Stres Azaltma (MBSR) ve Mindfulness Temelli Doğuma ve Ebeveynliğe Hazırlık (MBCP) programlarının stres ve anksiyete yönetiminde ve depresif belirtilerin azaltılmasında önemli faydalar sağladığını göstermektedir. Ayrıca bu programların doğum korkusunu azaltarak anne adaylarının doğuma ilişkin öz-yeterlik düzeyini artırdığı ve maternal-fetal bağlanmayı güçlendirdiği çeşitli çalışmalarda raporlanmıştır. Bazı çalışmalar ayrıca bu yaklaşımların beden imajını olumlu etkilediğini, öz şefkati artırdığını ve emzirme süreçlerine uyumu kolaylaştırabileceğini raporlamaktadır. Mindfulness temelli müdahaleler, gebelik sürecinde ruhsal ve fiziksel iyi oluşu destekleyen etkili bir yaklaşım olarak öne çıkmakta olup gelecekte yapılacak çalışmalarla uzun dönemli etkilerinin kapsamlı biçimde değerlendirilmesi önerilmektedir.

Anahtar sözcükler: Anksiyete, mindfulness, depresyon, psikolojik stres, perinatal ruh sağlığı

Introduction

Pregnancy is a critical period in a woman's life during which significant physiological, hormonal, and psychosocial changes occur (Fışkın and Işık 2022). In this process, important adaptations occur in the cardiovascular, endocrine, and immune systems to support fetal development in the maternal body (Coşkun et al. 2020). These biological adaptations show significant effects not only at the physical but also at the psychological level. (Parcells 2010). It has been shown to lead to the emergence of psychological difficulties such as stress, anxiety, fear of childbirth and depression (Parcells 2010). It has been reported that increased psychosocial stress factors during pregnancy may weaken maternal-fetal attachment and this may negatively affect maternal health and psychological wellbeing in the perinatal period (Tsao et al. 2019, Nowicki 2025).

In recent years, mindfulness-based approaches have been increasingly used to maintain mental balance in pregnancy and to improve stress coping skills (Nadholt et al. 2023, Gkintoni et al. 2025). Mindfulness is an approach based on the individual experiencing the present moment with conscious awareness and acceptance without judgment (Kabat-Zinn 1990, Kabat-Zinn 2003). This approach encourages individuals to direct their attention to their experiences "here and now" rather than to the past or the future. It allows for the observation of internal experiences such as bodily sensations, thoughts, and emotions with conscious awareness (Kabat-Zinn 1990, Duncan and Bardacke 2010). Mindfulness practices enable individuals to respond consciously and acceptingly to their inner experiences, rather than developing automatic reactions (Langer 1992). During pregnancy, focusing on the present moment with mindfulness facilitates coping with difficulties such as stress, anxiety and fear of childbirth and contributes to the strengthening of maternal-fetal attachment (Nejad et al. 2021, Nasrollahi et al. 2022). In particular, MBSR (Mindfulness-Based Stress Reduction) and MBCT (Mindfulness-Based Childbirth and Parenting) programmes have been shown to have positive effects on stress management, anxiety, and depression (Kabat-Zinn 2001, 2003, 2014, Findik et al. 2025). These programmes support individuals to accept and observe their current experiences without criticism, prejudice, or evaluation, and increase psychological resilience during pregnancy (Özer and Dişsiz 2025). These positive effects are supported by the seven attitudes (non-judgment, patience, beginner's mind, trust, effortlessness, acceptance, and letting go) that form the basis of mindfulness practices and encourage the development of a mindfulness approach in individuals (Kabat-Zinn 2001, 2003, Duncan and Bardacke 2010).

1. **Nonjudgement:** It means accepting one's experiences without any criticism, labelling or evaluation. This attitude allows individuals to observe their inner world more objectively.
2. **Patience:** It means that the individual adopts the understanding of letting everything happen in its own natural time and not rushing. This attitude helps to develop a more gentle and accepting approach to both oneself and one's experiences.
3. **Beginner's Mind:** It refers to the individual's approach to each experience in an open, curious, and unprejudiced way, as if encountering it for the first time. This attitude allows the person to see the reality of the present moment as it is, free from automatic thoughts or assumptions stemming from past experiences.
4. **Trust:** It is a basic attitude that expresses the individual's belief in his/her own inner experiences, feelings, intuitions, and the natural flow of the process.
5. **Non-striving:** It refers to the individual's giving up the effort to achieve a goal, change a situation, or control an outcome. This attitude allows the individual to accept the moment as it is and to observe his/her experiences without any intervention or coercion.
6. **Acceptance:** It is a basic attitude that expresses the individual's adoption of current experiences as they are, without trying to change or reject them. This attitude encourages the individual to approach the internal and external realities with an open awareness and to accept what is happening without resistance.

7. Letting go (Being able to let go): It refers to the individual's conscious separation from thoughts, feelings, and experiences that they unnecessarily hold on to, are tightly attached to, or try to push away. This attitude allows the individual to accept experiences as they are.

These seven attitudes support expectant mothers to be more resilient to the emotional fluctuations they experience during pregnancy and contribute to their physical and mental preparedness for the birth process (Reangsing et al. 2024).

In addition to these basic attitudes, some specific principles, particularly in the MBCP programme, further deepen the mindfulness approach adapted to the birth process and early parenting. These principles include: staying with pain, which teaches to meet the pain felt in childbirth as a "temporary and meaningful experience" instead of a "harmful threat"; staying with fear, which facilitates facing the worries and fears specific to the Birth and parenting process; mindfulness in relationship, which focuses on conducting the relationship with the partner or supportive figure with a mindful attitude; and lovingkindness, which aims to develop a loving understanding of oneself and others (Bardacke 2012). In addition, the concept of mindful transition to parenthood, which facilitates mental preparation for the new life process after Birth, offers a unique perspective to this programme (Duncan and Bardacke 2010, Bardacke 2012). MBCP not only strengthens the individual's relationship with the present moment but also contributes to the development of a mindfulness-based approach in areas such as partner relationships, birth preparation, and fetal attachment (Bardacke 2012).

Mindfulness practices encourage individuals to recognise current thoughts, emotions, and bodily sensations without judgment and to develop an accepting approach to these experiences (Kabat-Zinn 2003, Kabat-Zinn 2014). This accepting approach during pregnancy involves the expectant mothers approaching the changes occurring in their bodies and minds without resistance. This attitude involves observing these changes as part of the moment without judging them as "good" or "bad" (Duncan and Bardacke 2010). Research shows that mindfulness-based practices increase psychological flexibility by recognising and accepting thoughts that cause stress or anxiety, rather than suppressing or trying to change them (Duncan and Bardacke 2010, Dağlar and Şahin 2021, Findık et al. 2025). In this process, individuals are encouraged to approach their own experiences compassionately and to consider these experiences as a natural part of being human (Lange and Grünbaum 2024). In this direction, it is reported that mindfulness practices facilitate coping with psychosocial difficulties experienced during pregnancy and support the mental balance and psychological wellbeing level of expectant mothers (Arslan et al. 2019, Ibıcı Akca et al. 2023).

Pregnancy is a critical period in which women experience intense changes at the physical and psychological level and the risk of stress, anxiety, fear of childbirth and depression increases. (Arslan et al. 2019, Anık Çankaya 2023). In the first trimester, hormonal fluctuations and physiological adaptation processes can have significant effects on mental balance (Çetin et al. 2017, Arslan et al. 2019); in the second trimester, changes in body perception brought about by increasing abdominal volume and weight gain with pregnancy and the need for psycho-social adaptation can cause an increase in anxiety levels (Arslan et al. 2019, Tokman and Yılmaz 2024). In the third trimester, with the approach of Birth, fear of childbirth and anxiety about birth increase significantly, and this situation threatens the mental health of expectant mothers (Çetin et al. 2017, Arslan et al. 2019). Fear of childbirth is an important risk factor that threatens healthy adaptation from pregnancy to postpartum (Duncan et al., 2017). Low birth self-efficacy is associated with increased risk of painkiller use, unwanted obstetric interventions, and postnatal depression (Duncan et al. 2017). Therefore, supporting these trimester-specific psychological changes with mindfulness-based interventions may make a significant contribution to maintaining mental balance and perceiving the pregnancy experience more positively.

This review aims to examine the potential contributions of mindfulness-based interventions to psychological risk conditions such as stress, anxiety, depression, and fear of childbirth, which are commonly observed during pregnancy, in a conceptual framework in line with the current literature. In this direction, the findings on the effects of mindfulness approaches applied during pregnancy on psychological wellbeing, mental resilience, mental preparation for Birth, and maternal-fetal attachment

were reviewed. The study aims to develop a literature-based perspective on how these approaches can contribute to clinical and educational practices by addressing the potential benefits of mindfulness-based approaches in the context of perinatal care processes.

General Findings and Impact Areas of Mindfulness-Based Interventions in Pregnancy

In the literature, it has been shown that mindfulness-based approaches reduce stress and anxiety levels during pregnancy, and this effect contributes to the development of a positive perspective towards Birth by supporting psychological wellbeing (Pan et al. 2019, Van der Meulen et al. 2023). In addition, it is reported that these practices strengthen self-awareness and self-perception by increasing physical and mental awareness and reinforce maternal-fetal attachment (Gibson 2019, Golmakani et al. 2021b). Randomised controlled trials show that regular mindfulness practices are associated with mothers developing a more compassionate attitude towards themselves and their fetuses (Duncan and Bardacke 2010, Duncan et al. 2017, Veringa-Skiba et al. 2022, Findik et al. 2025).

Mindfulness-based interventions support the development of self-awareness in expectant mothers and support the deepening of their perceptions of both themselves and their fetuses. (Duncan & Bardacke, 2010; Nejad et al., 2021). Thanks to these practices, pregnant women can develop a more resilient attitude towards daily stressors and emotional fluctuations; they can develop a more accepting and compassion-oriented attitude towards their bodies and pregnancy processes (Shahtaheri et al., 2021). This inner awareness and acceptance process supports the trust relationship that expectant mothers establish with their bodies and fetuses in the prenatal period. It allows them to develop a more positive perspective on Birth and postpartum (Sun et al., 2024). In this direction, mindfulness-based practices have been shown to strengthen both psychological wellbeing and prenatal attachment by increasing mental resilience during pregnancy (van Steensel et al. 2024, Laurent et al. 2025).

Regular mindfulness practice has been shown to support the development of trust, commitment, and positive emotions in maternal-fetal interaction (Veringa et al. 2016, Shahtaheri et al. 2021). These findings suggest that mindfulness-based approaches can strengthen not only individual psychological wellbeing but also the emotional bond of the mother with her foetus.

It has been reported that mindfulness-based interventions applied during pregnancy show multidimensional effects ranging from reducing stress and anxiety levels to alleviating depressive symptoms, from providing positive changes in physical health indicators to maintaining mental stability (Zeinabeh et al. 2023). In addition, it has been determined that it provides significant effects in various psychosocial areas, such as reducing fear of childbirth, increasing self-efficacy perception, supporting psychological wellbeing, and strengthening maternal-fetal attachment (Van der Meulen et al. 2023). There are findings that mindfulness practices in the postpartum period facilitate adaptation to the breastfeeding process and contribute to the maintenance of maternal psychological wellbeing (Akdemir and Özcan 2023). In line with these findings, the effects of mindfulness-based interventions during pregnancy will be examined in detail.

Stress and Anxiety Management

Pregnancy is a period in which stress and anxiety levels increase in expectant mothers, and psychological and physiological changes are experienced intensely. It has been reported in various studies that stress and anxiety experienced during this period can negatively affect maternal-fetal attachment and make the healthy progress of the pregnancy process difficult (Atasever and Çelik 2018, Coşkun et al. 2020). MBSR and MBCP programmes stand out as evidence-based interventions structured to improve coping skills for such psychosocial difficulties encountered during pregnancy (Nasrollahi et al. 2022, Zhang et al. 2023).

These programmes aim to help individuals cope with stressors more consciously and flexibly by encouraging them to focus on their current experiences with a non-judgmental awareness. Mindfulness-based practices support the development of a more accepting attitude towards situations that may

increase the level of anxiety during pregnancy, thus increasing psychological resilience (Shahtaheri et al. 2021, Sun et al. 2024). In particular, in a study conducted by Ibica Akca et al. (2023), it was revealed that an eight-session MBSR programme significantly reduced pregnancy-related stress and anxiety levels in high-risk pregnant women (Ibica Akca et al. 2023). These findings suggest that mindfulness-based approaches are effective in strengthening stress management in high-risk pregnant women (Duncan and Bardacke 2010, Wang et al. 2023). These positive effects on stress and anxiety management make it necessary to examine the potential impact of mindfulness-based approaches on other psychological symptoms.

Effects on Depressive Symptoms

Pregnancy is a period in which several psychological risks that may affect mental and physical health increase. During this period, depression stands out as an essential mental health problem for expectant mothers (Duncan et al. 2017). Increased hormonal changes and lifestyle changes during pregnancy may predispose to exacerbation of depressive symptoms (Fışkin and Işık 2022). It has been reported that increased depressive symptoms may weaken the self-awareness of expectant mothers, damaging both self-perception and the emotional bond with the foetus (Duncan et al. 2017, Laurent et al. 2025). Considering that depression may be associated with long-term negative consequences on both mother and foetus, the importance of effective intervention methods becomes even more evident.

Mindfulness-based approaches offer an effective support strategy for the management of depression during pregnancy. These practices allow the individual to exit ruminative thought cycles and focus on the present moment by improving emotional awareness (Duncan and Bardacke 2010, Findik et al. 2025). In particular, MBSR programmes are effective in alleviating depressive symptoms through strengthening stress coping skills (Nasrollahi et al., 2022) in a study conducted by Nasrollahi et al. In Iran, a significant decrease in depression, anxiety and stress levels was observed as a result of an eight-week MBSR programme applied to women who experienced early pregnancy loss (Nasrollahi et al. 2022). These findings show that mindfulness-based practices provide positive effects not only on stress and anxiety but also on depression symptoms.

The positive effect of mindfulness practices on depression management is also observed in groups exposed to psychosocial risk factors (Corbally and Wilkinson 2021, Nejad et al. 2021). In a clinical study conducted by Nejad et al. (2021), significant decreases in stress, anxiety and depression levels were reported after MBSR application in women with unplanned pregnancy (Corbally and Wilkinson 2021, Nejad et al. 2021). Similarly, in a randomised controlled trial conducted by Duncan et al. (2017), it was reported that women who participated in mindfulness-based birth preparation programmes perceived their birth experience more positively and their risk of postpartum depression decreased (Duncan et al. 2017).

In a randomised controlled trial conducted by Lönnberg et al. (2020), the perceived stress level and perinatal depression risk of women participating in the MBCP programme decreased significantly. The MBCP group was shown to have lower levels of depression and stress compared to those who received standard childbirth education (Lönnberg et al. 2021). The decreasing effect of mindfulness-based interventions on depression and stress levels is associated with a decrease in individuals' reactivity to stress and their ability to maintain emotional balance (Lönnberg et al. 2021). In conclusion, mindfulness-based interventions are considered as a practical, evidence-based approach to prevent and manage depression during pregnancy. These interventions not only enhance individual psychological wellbeing but also have the potential to provide sustainable positive effects at the family level.

Physical Health Indicators

Mindfulness-based practices during pregnancy are associated with various positive outcomes in physical and psychological health. In particular, mindfulness-based yoga programmes are effective in reducing physical pain and supporting general physical wellbeing during pregnancy (Schussler et al. 2020) (Beddoe et al. 2009). In the study conducted by Beddoe et al. (2009), women who participated in a mindfulness-based yoga programme in the second trimester had a significant reduction in both perceived physical pain and the effects of this pain on daily life (Beddoe et al. 2009). No significant change in pain level was

observed in women who participated in the third trimester. In addition, a decrease in stress and anxiety levels was reported (Beddoe et al. 2009). These findings suggest that mindfulness-based practices may be effective in the management of physical pain and stress by increasing body awareness.

The effects of mindfulness-based interventions on physical health are not limited to pain management; it has also been shown to have positive effects on some medical complications seen in pregnancy. In a study conducted by Moslemi Zadeh et al. (2023), significant decreases in both blood glucose levels and perceived stress levels were observed as a result of an eight-session MBSR programme applied to women diagnosed with gestational diabetes (Zeinabeh et al. 2023). Positive changes were found in both biochemical and psychological parameters in women diagnosed with gestational diabetes following the eight-session MBSR programme conducted twice a week. Similarly, in a study conducted by Irawan et al. (2024) with pregnant women with high blood pressure, it was stated that mindfulness-based practices offer a practical non-pharmacological approach to reduce hypertension-related risks by regulating blood pressure (Irawan et al. 2024). Although stress and anxiety levels were not directly measured in this study, it was stated that mindfulness may indirectly support stress management (Irawan et al. 2024).

In the systematic review and meta-analysis conducted by Sari et al. (2023), it was emphasized that mindfulness-based interventions reduce musculoskeletal pain during pregnancy and support physical wellbeing by increasing body awareness (Sari et al. 2023). It has been stated that these interventions, which contribute to the development of postural awareness habits, are also effective in reducing muscle tension (Sari et al. 2023). In addition, a randomised controlled trial conducted by Krusche et al. (2018) found that pregnant women who received mindfulness training increased their awareness of their bodies and decreased their anxiety about Birth (Krusche et al. 2018). In particular, practices such as breath awareness and body scanning have been reported to support general wellbeing by alleviating physical stress symptoms (Krusche et al. 2018). All these findings suggest that mindfulness-based interventions support somatic symptom management during pregnancy and are considered as an evidence-based support tool that supports both physical and psychological wellbeing by increasing body awareness.

Effects on Mental Health

Supporting mental health during pregnancy plays a critical role not only for the psychological wellbeing of the mother but also for fetal development and postnatal attachment processes (Kaya and Akdoğan 2022, Laurent et al. 2025). In this context, mindfulness-based interventions stand out as a practical evidence-based approach to reduce mental health problems commonly seen during pregnancy (Krusche et al. 2018). In a randomised controlled study conducted by Pan et al. (2019), a statistically significant decrease was found in the perceived stress and depression levels of women who participated in the MBCP programme between 13-28 weeks of pregnancy compared to the control group (Pan et al. 2019). Mindfulness-based practices contribute to the regulation of negative emotions and increase mental resilience by supporting individuals to focus on the present moment and observe their inner experiences without judgment (Kabat-Zinn, 2001; Kabat-Zinn, 2014).

The meta-analysis conducted by Min et al. (2023) revealed that mindfulness-based interventions significantly reduced postpartum depression and anxiety levels. However, it was stated that the effects may be more limited in pregnant women in the high-risk group (Min et al. 2023). In the study conducted by Zhang et al. (2023) in Hong Kong, it was determined that the MBCP programme applied during pregnancy significantly reduced depression and anxiety levels and increased the quality of life related to mental health. This research shows that MBCP provides positive effects not only on anxiety management but also on general psychological wellbeing during pregnancy (Zhang et al., 2023). In the systematic review of Shi and MacBeth (2017), it was reported that mindfulness-based programmes were moderately to highly effective on perinatal anxiety, while more variable results were obtained in depression symptoms (Shi and MacBeth 2017). The systematic review and meta-analysis of Reangsing et al. (2024) also support these findings; especially MBCT (Mindfulness-Based Cognitive Therapy) and MBSR programmes are significantly effective in reducing depression symptoms (Reangsing et al. 2024). Some studies address the effects of mindfulness-based interventions at the physiological level. Traylor et al. (2020) stated that acute and chronic stress experienced during pregnancy may adversely affect maternal-pleural-fetal endocrine and

immune systems and pave the way for complications such as premature Birth and pre-eclampsia (Traylor et al. 2020). In this context, mindfulness practices are considered a safe non-pharmacological option with its regulatory effect on stress hormones (e.g., cortisol), low cost, and easy accessibility.

All these findings show that mindfulness-based interventions provide multidimensional positive effects on mental health during pregnancy and after Birth; these effects are scientifically based and can be integrated into clinical practices.

Fear of Childbirth and Self-Efficacy

Fear of childbirth is a common and essential psychological problem that many expectant mothers face during pregnancy (Abdolalipour et al. 2023). Research shows that mindfulness-based interventions are effective in reducing fear of childbirth and increasing the sense of self-efficacy (Bardacke 2012, Abdolalipour et al. 2023). In a randomised controlled trial conducted by Van der Meulen et al. (2023) in the Netherlands, a nine-week MBCP programme consisting of three-hour sessions per week was applied to women with high fear of childbirth; at the end of the programme, a significant decrease in fear of childbirth and an increase in positive perception of the birth experience were reported. Participants stated that they had a more controlled, prepared, and positive experience during labour (Van der Meulen et al. 2023). Similarly, a systematic review and meta-analysis study by Abdolalipour et al. (2023) reported that mindfulness-based programmes effectively reduced fear of childbirth and increased expectant mothers' perceptions of self-efficacy regarding childbirth (Abdolalipour et al. 2023). It is emphasised that such programmes contribute to women developing a more flexible, positive and trust-based perspective on the birth process.

Self-efficacy plays a critical role in the management of fear of childbirth (Abdolalipour et al. 2023). According to the theoretical model developed by Veringa et al. (2016), negative cognitive and emotional evaluations of childbirth are associated with excessive anxiety, avoidance behaviours, and low self-efficacy perception (Veringa et al. 2016). This process may make it difficult for women to adapt to the birth process and negatively affect the birth experience (Veringa et al., 2016). In the same study, it was reported that the MBCP programme contributed to the development of a more positive attitude towards Birth by facilitating women to focus on the present moment, which increased their sense of control and confidence during Birth (Veringa et al. 2016).

In conclusion, mindfulness-based interventions such as MBCP offer practical tools to alleviate the fear of childbirth and strengthen the sense of self-efficacy. Integrating these interventions into the pregnancy and birth process can not only support psychological wellbeing but also make the birth experience more positive and empowering.

Psychological Wellbeing and Spiritual Resilience

The positive effects of mindfulness-based interventions on psychological wellbeing during pregnancy have been demonstrated by an increasing number of studies in recent years (Abdolalipour et al. 2023). These interventions improve individuals' ability to cope with stress and anxiety, increase mental wellbeing, and support mental resilience. In the study conducted by Papini and colleagues (2022), short-term self-compassion meditation was applied for the pregnancy and postpartum period; a significant increase in body satisfaction and self-compassion levels was observed after the intervention (Papini et al. 2022). This finding shows that self-compassion-based practices can provide positive effects on body image (Papini et al. 2022). In a randomised controlled study conducted by Skovbjerg et al. (2023), it was shown that mindfulness-based training applied to pregnant women provided a significant decrease in depression and stress levels and increased psychological wellbeing scores (Skovbjerg et al. 2023). In this study, it was emphasized that the effects of mindfulness practices were maintained during follow-up (Skovbjerg et al. 2023).

Table 1. Types of mindfulness-based interventions used in pregnancy: target groups, programme structures and psychological effects

Intervention Type	Target Group	Programme Feature and Timetable	Main Findings
MBSR	≥20 weeks of gestation, Primiparous, singleton pregnancy, healthy pregnant women aged ≥18 years	A total of 9 weeks of intervention consisting of 2.5 hour sessions once a week for 8 weeks, plus 1 full day retreat session Timeline: Pre-intervention, post-intervention, 3 months post-intervention, 6 months postpartum, 9 months postpartum	In the intervention group, 15.6% increase in psychological wellbeing, 17.4% increase in self-compassion, 5.9% increase in mindfulness, 19.7% increase in cognitive distancing skills and 2.9% increase in the capacity to understand mental states were observed (Skovbjerg ve ark. 2025)
	Women who had a first trimester miscarriage, had a planned pregnancy, had no known history of mental illness, and had not used psychiatric medication in the two months before the start of the study	It is a 2-hour intervention 1 time per week for 8 weeks Timeline Pre-intervention, post-intervention	Anxiety level decreased by 46.2%, depression level by 57.5%, stress level by 54.8% (Nasrollahi ve ark. 2022)
	Women before 32 weeks of gestation with an unwanted pregnancy and without neuropsychiatric disorders	It is a 2-hour intervention 1 time per week for 8 weeks Timeline Pre-intervention, post-intervention	Stress level decreased by 62.9%, anxiety level by 74.8% and depression level by 76.8% (Nejad ve ark. 2021)
MBCP	Healthy pregnant women with a gestational age between 20-30 weeks, nulliparous, without a history of psychiatric diagnosis and without a diagnosis of risky pregnancy	A total of 9 weeks of intervention consisting of 2.5 hour sessions once a week for 8 weeks, plus 1 full day retreat session Timeline Pre-intervention, post-intervention, postnatal 1st month and 2nd month	Depression score decreased by 60%, anxiety by 60% and stress by 46.1%, while prenatal attachment score increased by approximately 7.6% Fındık ve ark. (2025)
	Pregnant women at 20-30 weeks of gestation, with high fear of labour (W-DEQ ≥ 66), without psychiatric diagnosis and obstetric complications	Face-to-face group sessions 1 time per week for 8 weeks, for a total of 9 weeks, consisting of an additional one full-day retreat session lasting 3 hours Timeline Pre-intervention, post-intervention, postnatal 1st month and 2nd month	A 40.7% decrease was observed in the level of general psychological distress from the prenatal period to the second postnatal month. The level of depression decreased by 17%, and this decrease was maintained at 2.5% in the second postnatal month. The level of perceived stress decreased by 18%, and this decrease was maintained at 9.2% in the second postnatal month. Similarly, the level of fatigue decreased by 21% from prenatal to the second postnatal month. In addition, positive perception towards labour increased by 11% Van der Meulen et al. (2023)
	Pregnant women over 12 weeks of gestation, 18 years of age or older,	A total of 9 weeks of intervention consisting of 2.5-hour sessions once a week for 8 weeks, plus one	There was a 22.4% decrease in general psychological distress level, 22.4% decrease in depression level, 22.4%

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	smartphone/tablet users with access to the Internet	full-day retreat session. Timeline: Pre-intervention, post-intervention, 6-8 weeks postpartum, and 6 months postpartum	decrease in stress level, and 22.4% decrease in anxiety level. In addition, there was a 14.6% decrease in the feeling of fatigue and a 10.8% increase in the positive perception towards birth Zhang et al. (2023)
Mindful Yoga Programmes	Educators and auxiliary staff working in secondary schools	17 weeks 4 days a week mindful yoga group intervention Timeline: Qualitative data collection at the time of the post-test	There was a significant increase in bodily awareness (31.5%) and mindfulness (22.5%) skills. Participants reported that their ability to recognise the effects of stress on their bodies, relaxation and staying in the moment were strengthened. In addition, psychological and social gains such as reduction in stress and burnout (9.5%), bonding with colleagues (10.5%), self-efficacy (6.5%) and emotional regulation (5%) are also noteworthy Schussler et al. (2020)
	Nulliparous pregnant women between 12-32 weeks of gestation	7-week mindfulness-based yoga group intervention Timeline Pre-intervention, post-intervention	In second trimester pregnant women, pain duration decreased by 64.4%, pain intensity decreased by 6.3%, pain impact on life decreased by 36.4%, and general pain score (BPI) decreased by 31.5% after the intervention. In pregnant women in the third trimester, perceived stress level decreased by 33.1%, trait anxiety level decreased by 11.2%, but state anxiety increased by 4.9% after the intervention. In the same group, a significant increase of 358.8% in cortisol level was observed ($p < .000$) Beddoe et al. (2009)
Self-Compassion Based Programmes	Women aged 22-44 years, diagnosed with infertility and actively undergoing infertility treatment	Digital story and video self-compassion training intervention with 2 videos a day, 7 days a week, for a total of 8 weeks Timeline: Pre-intervention, post-intervention, 10 weeks after intervention	A 19.5% decrease in anxiety, 29.1% decrease in depression, 57.9% increase in self-compassion and 68.8% increase in infertility self-efficacy were observed Njogu et al. (2023)
	Women over 18 years of age, pregnant or postpartum	3 weeks, 1 time a day (20 min), total 21 meditation practices Timeline Pre-intervention, post-intervention	An 18.6% increase in self-compassion, a 9.9% increase in body appreciation, a 14.6% decrease in body shame, and a 28.1% decrease in body dissatisfaction were observed. Papini et al. (2022)
Mobile Based Mindfulness Interventions	Pregnant women aged 18 years and over, between 1-32 weeks of gestation	Mobile-based mindfulness intervention at least 3 times a week (20 min) for 4 weeks	An increase of 13.1% was observed in the level of mindfulness, 10.5% in emotional well-being, and between 7% and 8.9% in some sub-dimensions of mother-fetus attachment Park et al. (2025)

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Intervention Type	Target Group	Programme Feature and Timetable	Main Findings
		Timeline Pre-intervention, post-intervention	
	Pregnant women aged 18 years and over, 24-26 weeks of gestation	2 applications per week for 8 weeks (10 min each) Timeline Pre-intervention, post-intervention Qualitative interview within 2 weeks after the intervention	Qualitative findings revealed that participants experienced a decrease in fear, anxiety and negative thoughts about childbirth, as well as an increase in positive affect and psychological well-being Rizzi et al. (2024) and Rizzi et al. (2025)

Note. The programme features and main findings in the table may vary according to the intervention implementation method (face-to-face/online), session frequency, practitioner qualifications, sample size, gestational week and participant characteristics. In this table, only the basic structure and summary findings stated in the literature are included. Abbreviations: W-DEQ=Wijma Expectation/Experience Scale for Childbirth, MBCP=Mindfulness-Based Birth and Parenting Preparation Programme, MBSR=Mindfulness-Based Stress Reduction Programme

In a large sample study (n= 713) by Sun et al. (2024), mindfulness and inner peace played a partial mediating role in the effects of pregnancy stress on mental health (Sun et al. 2024). This finding suggests that mindfulness practices act as a buffer to alleviate the psychological effects of stress. In addition, a three-week mindfulness and gratitude-based intervention study conducted by Matvienko-Sikar and Dockray (2017) reported a decrease in pregnancy stress and cortisol levels; however, no significant difference was found in psychological variables such as depression and life satisfaction (Matvienko-Sikar and Dockray, 2017). The researchers emphasised that the short duration of the intervention may be effective and studies with larger samples are needed. In the study of Kaya and Akdoğan (2022), it was shown that the level of self-compassion was positively related to psychological wellbeing in pregnancy; self-compassion increased emotional resilience and alleviated the adverse effects of stress and anxiety (Kaya and Akdoğan 2022).

All these findings reveal that mindfulness and positive psychology-based interventions offer practical and applicable tools to increase psychological wellbeing in pregnancy. Such approaches can support psychological resilience at both individual and family levels by strengthening women's coping skills with stress. However, further research is needed to determine whether the effects are sustained in different sample groups and with long-term follow-up measurements.

Maternal-Fetal Attachment and Adaptation to Postnatal Breastfeeding

Mindfulness-based practices not only support psychological wellbeing but also deepen the emotional bond between mother and fetus by strengthening maternal-fetal attachment (Golmakani et al. 2021a, Van der Meulen et al. 2023, Findik et al. 2025). Pregnancy is a critical period during which an emotional bond between mother and foetus is established and developed (Laurent et al. 2025). Golmakani et al. (2021a) demonstrated that mindfulness practices significantly increased interaction and self-sacrifice behaviors with the fetus (Golmakani et al. 2021a). Mindfulness practices strengthen attachment by increasing the mother's awareness and emotional closeness to the foetus. Similarly, Tsao et al. (2019) reported that mindfulness practices support the emotional components of attachment by reducing stress levels during pregnancy (Tsao et al. 2019). In Akdemir and Özcan's (2023) study, it was emphasized that these practices support the development of a more positive approach to the role of motherhood (Akdemir and Özcan 2023).

In the postnatal period, mindfulness-based interventions continue to support mental health and maternal adjustment (Laurent et al. 2025). In the review of Dağlar and Şahin (2021), it was reported that eight-week mindfulness programmes reduced stress, anxiety, and depression levels in the postpartum period and strengthened psychological resilience by increasing self-compassion (Dağlar and Şahin 2021). Regarding the breastfeeding process, Akdemir and Özcan (2023) stated that mindfulness practices help cope with the difficulties encountered during breastfeeding and adapting to the role of motherhood (Akdemir and Özcan

2023). In addition, the need for nurses and midwives to provide mindfulness-based counselling in this process has been emphasised in various studies (Shorey et al. 2019, Tzitoridou-Chatzopoulou et al. 2024).

(2021; 2023), Research has shown that the level of mindfulness during pregnancy significantly affects the intention to breastfeed after Birth and the actual realization of this intention. In particular, it was found that the "non-reactivity" dimension of mindfulness was associated with the continuity of breastfeeding duration, and women with high mindfulness levels were more likely to continue breastfeeding for six months or more (Hulsbosch et al. 2021, Hulsbosch et al. 2023). In a randomised controlled trial by Gheibi et al. (2020), eight-week MBCP was shown to increase maternal-fetal attachment (Gheibi et al. 2020). Significant increases were recorded in the intervention group, especially in the dimensions of interaction with the foetus, acceptance of the maternal role, and attribution of characteristics to the foetus (Gheibi et al. 2020). These findings suggest that mindfulness-based interventions can positively affect both the attachment process and breastfeeding behaviours by facilitating emotional regulation in the postpartum period (Gheibi et al. 2020). Similarly, Ibıcı Akca et al. (2023), in their study conducted with high-risk pregnant women, revealed that MBSR application strengthened prenatal attachment by reducing anxiety (Ibıcı Akca et al. 2023). It was stated that these effects were especially related to mindfulness techniques such as breath awareness and body scanning.

All these findings show that mindfulness-based interventions offer practical psychosocial tools that support maternal-fetal attachment and adaptation to the breastfeeding process during pregnancy and postnatal period. In this context, the potential of mindfulness to increase the current focus on the present moment and emotional regulation capacity necessitates its integration into prenatal and postnatal care processes. In this context, the main effects of mindfulness-based interventions during pregnancy are summarised in Table 2.

Table 2. Trimester-based mindfulness effects in pregnancy		
Trimester	Main Effects	Findings
1st trimester (0-13 weeks)	Increased stress awareness, onset of body awareness, and early awareness of depressive symptoms	Sun et al. (2024), Matvienko-Sikar and Dockray (2017)
2nd trimester (14-26 weeks)	Improved body image and self-compassion, decreased anxiety, increased prenatal attachment, reduced depressive symptoms, increased psychological well-being	Papini et al. (2022), Shahtaheri et al. (2021), Ibıcı Akca et al. (2023), Nejad et al. (2021)
3rd trimester (27-40 weeks)	Decrease in fear of childbirth, increase in self-efficacy, positive preparation for birth, decrease in the risk of postpartum depression	Abdolipour et al. (2023), Veringa et al. (2016), Gheibi et al. (2020), Lönnberg et al. (2020), Min et al. (2023)

Conclusion

This review shows that mindfulness-based approaches support mental and physical wellbeing during pregnancy. In particular, MBSR and MBCP programmes are effective in reducing stress, fear of childbirth, anxiety, and depression symptoms; it has been confirmed in the literature that they strengthen psychological wellbeing (Bardacke 2012, Ibıcı Akca et al. 2023, Zhang et al. 2023). When evaluated in the context of Turkey, widespread fear of childbirth, high caesarean section rates (78.1%) and negative social perceptions of childbirth make it difficult for women to adapt mentally and physically during pregnancy (Aslan and Okumuş 2017, Bilgin 2020, Topaktaş and Beylik 2024). In this context, mindfulness-based interventions can contribute to women's development of a more positive perspective towards Birth by strengthening their relationship with their bodies and fetuses. Thus, it can contribute to reducing unnecessary medical interventions, increasing vaginal birth rates, and increasing positive birth experiences (Calpınici et al. 2024).

The dissemination of mindfulness-based birth preparation programmes in Turkey can be considered a preventive mental health approach, supporting both the physiological aspects of Birth and increasing mental resilience in postpartum periods. In this context, it is recommended that academicians working in the field of midwifery and obstetric nursing should receive training on mindfulness-based approaches and develop structured programmes to transfer these skills to both colleagues and students. However, the effectiveness of mindfulness-based interventions may vary depending on individual differences, implementation time and sample characteristics. Some studies in the literature emphasize that mindfulness is beneficial in the short term; however, regular practices are necessary for the sustainability of long-term effects (Hölzel et al. 2011, Wheeler et al. 2017). Therefore, there is a need for randomised controlled studies with large samples in which interventions applied in different trimester periods are evaluated comparatively and their effects on postnatal breastfeeding and maternal adjustment are monitored.

In conclusion, mindfulness-based approaches reduce women's stress and anxiety levels during pregnancy, strengthen their awareness of their bodies and fetuses, and contribute to the development of a more positive and trust-based attitude towards the birth process. Integration of mindfulness into pregnancy and birth processes has the potential to support the transformation of negative social perceptions about Birth in Turkey, contribute to the reduction of caesarean section rates and strengthen maternal-fetal health in the long term. It is recommended that future studies should examine the trimester-based effects of mindfulness-based interventions, postnatal psychological adjustment and breastfeeding processes with a holistic approach. Thus, the contributions of mindfulness during the perinatal period can be documented more strongly, and its application area can be further expanded.

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