

## **Mindfulness-Based Interventions for Addressing Trauma, Anxiety, and Emotional Dysregulation in Children and Adolescents: A Literature Review**

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*The use of mindfulness-based interventions (MBIs) with children and adolescents experiencing mental or behavioral issues has significantly increased over the last decade. More recently, researchers have begun investigating the effects of these interventions on children and adolescents encountering trauma or adverse childhood experiences. In this literature review, the authors explore current research on the mind-body connection and the use of MBIs with children and adolescents to facilitate and promote physical and psychological healing. Further, they describe the connection between neuroscience and trauma and how MBIs can strengthen and facilitate neurological healing. Lastly, recommendations are provided for counselors who consider implementing MBIs into their work with children and adolescents.*

*Keywords: mindfulness-based interventions, trauma, anxiety, self-regulation, children*

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Over the past decade, there has been a substantial increase in the use of mindfulness-based interventions (MBIs) with children and adolescents. As the rates of children struggling with trauma and anxiety have risen in the past decade, the need for strategies to help cope with these issues has earned more attention. According to a 2016 National Survey of Children's Health (NSCH), 7.1% (approximately 4.4 million) of children were diagnosed with some type of anxiety disorder (Ghandour et al., 2019). In the most recent 2020 survey, this number increased to 8.5% (Health Resources & Services Administration, 2020). Additionally, Danielson and colleagues (2021), in collaboration with the Centers for Disease Control (CDC), used parent and teacher reports to explore student mental health in K-12 learners and found that 1 in 6 students experiencing mental health symptoms led to the diagnosis of a mental disorder.

The COVID-19 pandemic has also impacted the mental health of youth over the past few years. In a systematic review of 35 research studies, Theberath and colleagues (2022) found significant increases in anxiety (28%) and depression (23%), as well as increases in fear, stress, anger, loneliness, confusion, fatigue, tension, and worry. The authors highlighted the relatively few studies that had been conducted thus far and the need for continued research (and the long-term effects) of the pandemic on children's mental health. In a larger systematic review of 116 studies, Samji and colleagues (2021) reported similar results, but noted differences amongst groups of children. The authors found older adolescent girls, and children and adolescents living with neurodiversities and/or chronic physical conditions were more likely to experience negative mental health outcomes.

Rates of trauma have also continued to rise. Studies indicate that approximately 15% to 43% of girls and 14% to 43% of boys go through at least one trauma (US Department of Veteran Affairs, n.d.). Increasingly, researchers are investigating preventative and reactionary interventions to mitigate some of the adverse effects of these traumatic experiences. For example, the CDC (2021) recommends teaching children social-emotional learning skills to help prevent the negative effects of adverse childhood experiences (ACEs). Trauma-informed efforts target the prevention and reduction of ACEs and the chronic stress and trauma that can result. Many prolific and reputable organizations including the federal Centers for Medicare and Medicaid Services, the Administration for Children and Families, and the American Academy of Pediatrics support MBIs as approaches for trauma and chronic stress within children (Hamoudi et al., 2015; 2021; Sheldon et al., 2013). The body is an important and necessary part of the healing process for reducing trauma symptoms (Danylchuk, 2015; Emerson, & Hopper, 2011; Forbes, 2011; van der Kolk, 2014). Traditional forms of psychotherapy (talk therapy) have not always been successful for trauma survivors (Field & Ghoston, 2020; van der Kolk, 2014), therefore a need to find more creative approaches may be necessary.

Counselors can play an important role in connecting children and adolescents with creative and developmentally appropriate interventions to help alleviate trauma-related symptoms. Mindfulness-based approaches are an example of an evidence-based intervention that aligns well with the American Counseling Association's (ACA) 20/20 definition of counseling by focusing on empowering others to accomplish mental health and wellness goals (ACA, 2010). The purpose of this review is to explore outcome

studies of MBIs across many professional disciplines and to provide readers with application of these interventions to the counseling field.

### **Understanding Trauma, Anxiety, and Self-Regulation**

The American Psychiatric Association discusses traumatic stressors as “any event that may cause or threaten death, serious injury, or sexual violence to an individual, a close family member, or a close friend” (2013, p. 830). In children, these traumatic events are often referred to as ACEs. A groundbreaking study by Felitti and colleagues (1998) in collaboration with the United States Centers for Disease Control and Kaiser Permanente found that ACEs could impact health outcomes throughout the lifespan. According to the National Survey of Children’s Health, 23.3% of children under 18 have experienced at least one ACE and 18.6% have experienced at least two ACEs (Child and Adolescent Health Measurement Initiative, 2019). Though the original study received some criticism due to the limited participant demographic (Anda et al., 2020), the study has inspired further research with much more diverse populations and has helped put a focus on the effects of trauma on physical and mental health (Fox et al., 2015; Hughes et al., 2017; McKelvey et al., 2018; Ray et al., 2020). The World Health Organization (WHO) has also developed the Adverse Childhood Experiences International Questionnaire (ACE-IQ) as an adaptation of the original survey and includes more questions appropriate to populations around the world.

Unfortunately, ACEs are not an uncommon occurrence. The U.S. Health Resources and Services Administration (HRSA) reported that one in three children have experienced at least one traumatic event while one in five have experienced two or more (HRSA, 2020). These incidents can lead to increased stress anxiety that can have

detrimental effects on children's overall wellbeing and development. For example, the stress from these events can change brain development and affect such things as attention, decision-making, and learning (CDC, 2021).

Due to the high prevalence of children who experience trauma and anxiety, there is an increased number of children who struggle with self-regulation. Self-regulation can be defined as the capacity to modulate attention and emotion. When a child is dysregulated, they often struggle with paying attention, controlling their behavior, and managing their emotions. According to Dvir et al. (2014), trauma exposure in childhood is associated with the reduced ability to understand and regulate emotions and with impaired social functioning that could reach adulthood. When children are not able to self-regulate, there can be significant challenges to their development. Keeshin and colleagues noted that "emotional dysregulation is highly correlated with prior childhood trauma, where challenges in emotional regulation among trauma-exposed youth are observed at up to twice the rate of controls" (2021, p. 375).

### ***The Connection of Neuroscience to Trauma, Anxiety, and Self-regulation***

Findings from various studies show that trauma and adverse childhood experiences affect brain development. Children who have encountered periods of trauma and chronic stress are at a disadvantage in their neurobiological development and may have deficits in their behaviors and learning (Jennings, 2019). Neuroplasticity is the brain's capacity to change and alter neural connections (Porges, 2011). It is also the foundation of learning about the world of others and the self, an important part of child development (Siegel & Bryson, 2012). The presence of neuroplasticity enables positive

change to occur through mindfulness practices even if there have been periods of trauma or chronic stress (Porges, 2011).

The ability to handle and cope with stress is central to both physical and mental health (Field & Ghoston, 2020). Children are born with genetic predispositions for certain traits and health issues based on the DNA they inherited. However, a child's environment has a strong impact on which of their genes are expressed. In fact, research has supported that a child's current environment has shown a greater role in whether they develop an overactive stress response system than either genetics or heredity (Field & Ghoston, 2020). For the child who has experienced persistent abuse or bullying, resulting in chronic stress, their bodies' ability to control the stress response is silenced, resulting in chronically high levels of circulating cortisol (Field & Ghoston, 2020).

When discussing trauma, anxiety, and self-regulation, it is important to recognize the connection to the amygdala. As noted by Tottenham and Gabard-Durnam (2017), the "amygdala's function across the lifespan is to identify and affectively learn about important events in the environment that are emotionally important or motivationally relevant. Both affective learning and associated amygdala activity increase under conditions of ambiguity or uncertainty" (p. 2). The amygdala has been coined the "smoke-detector" of the brain and helps provide environmental clues of threat or safety during childhood. The amygdala is responsible for sending signals to the threat response system of the body. If there is no assistance from caregivers in the child's environment to help regulate threat or the caregiver is the source of the stress, the result can be a chronic state of affective dysregulation (Tottenham & Gabard-Durnam, 2017). In cases such as these, children may eventually begin to perceive threat and activate the threat response

system to neutral or even positive stimuli (Miller, 2021). Researchers have found that mindfulness practices can strengthen the neural circuits associated with empathy, compassion, and moral decision making- in effect, this can change perceptions of oneself and others (Newberg & Walden, 2012).

### **Mindfulness**

Mindfulness has roots in the Buddhist practice of meditation and has been adopted into Western culture as a practice of intentionality. Jon Kabat-Zinn defined mindfulness as “paying attention in a particular way: on purpose, in the present moment, and non-judgmentally” (1994, p. 4). The first part of the definition, *purposeful attention*, involves learning to intentionally direct and sustain our attention- possibly paying particular attention to the breath, thoughts, or emotions. The second part includes being *in the present moment* and consists of bringing awareness to the here and now, letting go of thoughts connected to the past or the future. Finally, *non-judgmental attention* implies bringing an attitude of acceptance and curiosity into the practice. Engaging in mindfulness has the potential to heighten one’s ability to self-regulate, thus enabling one to respond to the world with more adaptability (Treleaven, 2018). The goal of a mindfulness-based practice is to become less reactive to the thoughts and emotions that arise during mindfulness-based practices, hoping this will eventually carry over into everyday life.

The ability to enhance mind-body awareness develops through the connection of thoughts and feelings to the physical state. The greater the connection, the more easily one can listen to their body communicating through physical symptoms. The more one practices listening to their body, the more skilled one is at reacting and working in

tandem with the body, thus creating an inner feeling of calm. For example, in yoga, one focuses on breathing and movement and notices the connection between thoughts/emotions and the body. Noticing the feelings that arise, and where they are experienced in the body, aids in emotional regulation and elicits self-awareness. In particular, the mind-body connection has become critically important in the field of trauma. Trauma memory is stored in the body and messages sent from the body have a significant impact on the mind. Due to this connection, traumatized individuals need to first gain physical self-awareness by experiencing bodily sensations before reconciling the connection between the mind, brain, and body to help regulate arousal and emotions (Scaer, 2005; van der Kolk, 2014). Most likely, until someone who has experienced trauma increases their body awareness, most conventional trauma treatment approaches that are cognitively oriented will have limited effectiveness (Emerson & Hopper, 2011; Scaer, 2005).

Mindfulness-based practices (MBPs) are interventions that have gained more attention as evidence for their use have been cited in the literature (Borquist-Conlon et al., 2019; Ortiz & Sibinga, 2017; Siegel, 2007). In professional counseling, mindfulness-based practices cover a wide range of activities. For the purposes of this article, the authors use the term ‘mindfulness-based practices’ as an umbrella term to include meditation, yoga, breathwork, and other mind-body modalities used as mindfulness-based interventions (MBIs).

### **Literature Search Process**

The impetus for this literature review came from a recent content analysis conducted by the authors exploring mindfulness-based practices across 24 counseling



journals over a 21-year time frame (Gallo et al., 2022). The content analysis revealed that of the 131 articles published on MBPs, only 10 articles included children/adolescents as the population of interest. Not surprisingly, seven of the articles were published within the last 5 years, showing an increase in recognition of the benefits of MBIs (Campbell et al., 2019; Clark, 2020; Klassen-Bolding, 2018; Leeth et al., 2019; Lemberger-Truelove et al., 2018; Taylor et al., 2019; Su & Swank, 2019). The types of issues targeted in these articles included eating disorders, anger and aggression, attention problems, stress, emotional regulation and building resilience. Though there has been a shortage of studies on MBIs in the counseling field, other disciplines, such as psychology, education, and social work have published studies on MBIs with youth that can help inform the counseling profession. Therefore, the authors performed several processes to capture relevant publications. First, the authors searched for relevant studies within Ebscohost, ERIC, PsycInfo, Wiley, and Google Scholar. Results were filtered through several inclusion and exclusion criteria including timeframe (2016-2022) and utilization of the specific keywords: *mindfulness/meditation/yoga AND children/youth*. Results were further narrowed down by applying a participant age filter (2-18) and published article language (English). Lastly, only outcome studies that addressed mental health or wellness were included.

### **Mindfulness-Based Practices as Interventions in Counseling**

Counselors are tasked with finding ways to help children who are struggling with trauma, anxiety/stress, and self-regulation issues. Mindfulness-based interventions have proven to be effective in treating many mental health struggles in children and adolescents (Ortiz & Sibinga, 2017). These studies have improved outcomes in mental

health symptoms, behavior and quality of life, and coping (Ortiz & Sibinga, 2017). Recent studies focused on trauma, including the after-effects of anxiety, chronic stress, and emotional dysregulation on youth, have also shown promising outcomes (Dunning et al., 2019; Kallapiran et al., 2015). Bethell and colleagues (2016) examined associations between the prevalence of emotional, mental, or behavioral conditions with ACEs, and the potential benefits of MBPs. These authors found promising results and encouraged mindfulness-based mind-body approaches to address social and emotional trauma, which have the potential to interrupt intergenerational cycles of ACEs (2016). However, the biggest limitation of their study was the need for more items/measures of sensitivity. Dunning et al. (2019) conducted a meta-analysis of 33 randomized control trials that included 3,666 children and adolescents. Dunning and colleagues (2019) found significant positive effects of MBIs in the areas of mindfulness, executive functioning, attention, depression, anxiety/stress, and negative behaviors. However, there were a few limitations noted, for example the limited use of randomized control trials, which made the findings from some of the studies in their meta-analysis difficult to compare (e.g., they were populated with as few as five studies). The authors also noted a lack of replication studies, instead most studies focused on testing new MBI protocols. Kallapiran et al. (2015) also conducted a meta-analysis on MBIs in improving mental health symptoms of children and adolescents. The authors of this study compared results of 11 trials and found promising results in reducing mental health symptoms (Kallapiran et al., 2015). Dunning et al. (2019) and Kallapiran et al. (2015) noted a few similar limitations. These included heterogeneity in some results and a wide confidence interval range. In addition, they also reported publication bias among reporting studies published.

Stress and anxiety are common issues brought up in working with children and adolescents today. Several studies have been published that showed positive results in helping youth create better coping strategies for dealing with their stress. Borquist-Conlon and colleagues (2019) conducted a meta-analysis on mindfulness-based interventions that included five studies reporting results for a total of 188 youth. The MBIs included breathwork, meditation, relaxation techniques, guided imagery, yoga, body scans, psychoeducation, and present-moment awareness techniques. The results demonstrated positive and significant effects on anxiety. In a study by Campbell et al. (2019), the authors conducted a large, school-wide study using mindfulness meditation with 1,007 adolescents, 584 of whom received the intervention. The results indicated significant declines in perceived stress for the students in the treatment group (Campbell et al., 2019). The most significant limitation to this study was the difficulty in conducting research within the school setting. The limitations included: the inability to randomly assign participants, the difficulty of a consistent protocol due to a large number of teachers, and difficulty of collecting long-term follow up data.

Yoga is another commonly cited practice that has garnered more attention over recent years. Yoga incorporates physical movement with a connection to breathwork and a goal of mind-body awareness. Movement based practices focus on the importance of listening to the body and help children develop self-regulation and prosocial behaviors (Moreno, 2017). Stapp and Lambert (2020) conducted a study on the impact of mindfulness-based yoga on perceived anxiety and stress with fifth grade students and found decreases in both anxiety and stress levels in participants. The authors also reported the reduction in anxiety and stress manifested itself in the form of more positive

classroom transitions (Stapp & Lambert, 2020). Stueck and Gloeckner (2005) conducted a study of 48 fifth grade students who participated in yoga classes. Results indicated students felt a decrease in feelings of helplessness, stress, and aggression. Similar to the other studies, certain limitations were found in the school setting. Changing schedules, interruptions, and distractions must all be considered when looking at the results and any potential changes in students' behavior or mood.

In addition to interventions such as yoga and meditation, breathing techniques have also shown promise in relation to stress and anxiety reduction. In a study by Mendelson et al. (2010), fourth and fifth grade students participated in yoga, breathing techniques, and guided mindfulness practices over a 12-week period. The authors found the interventions had a positive impact on reducing students' stress levels. However, the authors did note their study lacked a large sample size. In a study by Ma et al. (2017), these authors found that diaphragmatic breathing activated parasympathetic recovery and reduced cortisol levels. This type of deep breathing can activate the "rest and digest" part of the central nervous system, even if one is not recovering from sympathetic activation (Field & Ghoston, 2020). It is important to note that Ma and colleagues recruited healthy volunteers for their study; therefore, this may serve as a potential limitation when drawing conclusions.

The consequences of trauma and chronic stress can also create problems with self-regulation and require skill development. Dr. Dan Siegel, clinical professor of psychiatry and founding co-director of the Mindful Awareness Research Center at UCLA, noted that mindful awareness improves a child's ability to regulate emotion, combat emotional dysfunction, improve patterns of thinking, and reduce negative mindsets (Siegel, 2007).

Many children and adolescents are struggling with their ability to self-regulate appropriately. Strategies for improving self-regulation have been found using MBIs. Davidson et al. (2012) found that mindfulness practices can generate changes in cognitive and emotional processes, including self-monitoring of negative affects to increase positive behaviors. Teaching children breathing techniques allows them to pause, notice their emotions, and perhaps respond in an appropriate manner (Rashedi & Schonert-Reichl, 2019). In a study by Delpus and colleagues (2016), a mindfulness-based cognitive therapy intervention was used with adolescents who were experiencing depressive symptoms and emotional regulation issues. The authors reported a decrease in depressive symptoms, in specific impulsivity facets (urgency and lack of perseverance) and in internal-dysfunctional strategies of emotion regulation (Delpus et al., 2016). However, a potential limitation of this study was its small sample size and lack of a control group. Nonetheless, children and adolescents who use mindfulness strategies can improve their self-control and self-regulation, helping them make better decisions and improve interpersonal skills (Parker et al., 2014).

### **Recommendations for Counseling Children and Adolescents Using MBIs**

Several recommendations can be made after reviewing the literature on MBPs for use in counseling children and adolescents. Counselors can incorporate MBIs into their sessions to help children and adolescents learn how to cope with anxiety, chronic stress, and emotional dysregulation. The benefits of MBIs have been proven through numerous studies, and with a variety of populations and ages. Mindfulness-based practices are also adaptable and accessible. If a counselor is interested in incorporating MBIs into their practice, they can begin by developing competence in the area through knowledge,

awareness, and skills of the practices. An important part of their learning would also include understanding more about how trauma resides in the body and how it can affect children specifically. Counselors would want to learn about different mindfulness practices, which are appropriate for different issues (e.g., anxiety, stress, dysregulation), and how to use a trauma-informed approach (Danylchuk, 2015; Treleaven, 2018). In addition, counselors would also want to spend time practicing how to use MBIs, and ideally, incorporating them into their own life to better understand how they are experienced and how to best facilitate them with children. As identified by our ethical codes, counselors should work within the boundaries of their competence and practice in new areas only after education, training, and supervised experience (ACA, 2014; C.2.a., C.2.b.). Counselors are encouraged to become knowledgeable of all practices they adopt, but especially traditional practices, such as yoga, which have long-standing histories that should be honored to avoid cultural appropriation (Krageloh, 2016; Stratton, 2015). MBPs have become more secular in nature as they have become more widely used in the Western countries. However, some practices have roots in religion and may require further conversations with clients and guardians before implementation (Krageloh, 2016; Stratton, 2015).

It is important for counselors to help the child or adolescent and the parent to make informed decisions and obtain consent for treatment before engaging in mindfulness-based practices. Rashedi and Schonert-Reichl referred to this as willful embodiment, the “ability to attune to one’s bodily sensations and act from a place of intentionality” (2019, p. 728). Willful embodiment allows for the child to have a sense of agency and for their voice to be heard, something that can be quite therapeutic and

empowering for a child with adverse experiences. Getting consent also allows an opportunity for the child to describe any previous experiences they have had with MPBs and their feelings about them. Self-awareness is a focal point in MBPs which is necessary for success.

When working with children and adolescents, counselors can also adopt a strengths-based approach. A strengths-based approach can be empowering for the client because it allows them to focus on what they are doing well and recognize the resilience they already have. Counselors can also consider ways to incorporate MBPs into the child's home. MBIs work best when used across settings and at any time the child might need them; therefore, working with the child's caregivers could be an advantage.

Lastly, other therapies such as cognitive therapy, dialectical-behavioral therapy, and acceptance and commitment therapy have also been shown to work well in conjunction with mindfulness interventions (Baer & Huss, 2008). For example, in combining mindfulness and cognitive therapy, the client is asked to use the ABC model within a meditation exercise- with the goal of building self-awareness (Baer & Huss, 2008). Dialectical-behavioral therapy (DBT) already incorporates mindfulness as the first module of the treatment program. DBT requires a longer-term commitment but has shown promising results for issues such as borderline personality disorder, suicidal behavior, emotional regulation, anxiety, and stress (Dimeff & Linehan, 2001). Acceptance and commitment therapy combines both behavior and mindfulness strategies to elicit change. The strategies are varied and designed to fit the individual needs of the client (Baer & Huss, 2008). Treatment might include meditation and guided imagery activities.

### **Conclusions and Future Directions**

There is a significant gap in the counseling literature related to MBIs with children and adolescents. Further research, especially within the counseling profession on the use of MBIs will benefit the field. Researchers in the previous studies have recommended implementing control groups and utilizing larger sample sizes in future studies. In addition, carrying out interventions with fidelity, especially in school settings, would strengthen findings. Lastly, researchers should work to eliminate publication bias and look for unpublished manuscripts to include when making comparisons and drawing conclusions.

In conclusion, researchers have demonstrated the benefits of many mindfulness-based practices as interventions for youth who have experienced trauma, anxiety, stress, and self-regulation issues. The interventions have improved children's mental, physical, and behavioral outcomes and provided them with coping skills to use in various life areas and throughout their lifespan. As the prevalence of children with traumatic experiences increases, counselors will continue to encounter more clients who need assistance working through their anxiety, chronic stress, and emotional regulation issues.



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