Mindfulness as a therapeutic tool for adolescents with ADHD

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Abstract: *Mindfulness-based interventions (MBIs) have emerged as promising therapeutic approaches for adolescents with attention deficit hyperactivity disorder (ADHD). This article reviews and synthesizes recent studies on the efficacy of MBIs in improving ADHD symptoms, executive functioning, emotional regulation, and behavioral outcomes among adolescents. Studies by Schonert-Reichl & Stewart-Lawlor (2010), Santonastaso et al. (2020), and Barranco-Ruiz et al. (2019) highlight significant improvements across these domains following various mindfulness interventions, including mindfulness meditation and mindfulness-oriented meditation (MOM) training. Meta-analyses conducted by Lee et al. (2022) and Chimiklis et al. (2018) underscore the consistent positive effects of MBIs on ADHD symptoms and broader functional outcomes.*

However, findings from Robe & Dobrean (2023) caution that single-session interventions may not yield substantial cognitive performance improvements, suggesting a need for further exploration into intervention duration and intensity. Tercelli & Ferreira (2019) emphasize the importance of sustained mindfulness practice beyond intervention periods for maintaining long-term benefits. Future research directions include optimizing intervention design, exploring technological integration, and integrating mindfulness into educational settings to enhance treatment efficacy and sustainability.

Keywords: *mindfulness-based interventions, ADHD, adolescents, executive functioning, emotional regulation*

Introduction

This work examines the effects of meditation and mindfulness (listening) treatment on the functioning of adolescents with attention deficit hyperactivity disorder? Attention deficit hyperactivity disorder is a neurocognitive disorder that manifests itself in deficits in attention, executive functions, hyperactivity, and impulsivity with a prevalence of 2-10% of the population (Levkovitch and Eliosef, 2020). Mindfulness is defined as "awareness that grows from directing attention to what is happening in the present moment and without judging the revelations that arise from the present experience on a moment-to-moment basis" (Kabat-Zinn, 2003, p.144).

The purpose of the work is to investigate the effectiveness of mindfulness-based interventions in improving ADHD symptoms and overall functioning in this population. A comprehensive review of relevant literature was conducted to analyze

findings from various studies that examined the effects of mindfulness practices on adolescents with ADHD. Key findings from the literature review indicate that mindfulness-based interventions demonstrate significant benefits for adolescents with ADHD.

Studies indicate that mindfulness exercises improve self-awareness, promote relaxation and reduce symptoms of impulsivity and hyperactivity among adolescents with ADHD (Lee et al., 2022). Analysis of the findings highlights the potential of mindfulness-based interventions as complementary treatments for adolescents with ADHD (Robe & Dobrean, 2023; Tercelli & Ferreira, 2019). However, certain factors, such as age and the duration of the intervention, may affect the results of the treatment. Future research should focus on optimizing intervention parameters, promoting long-term adherence to mindfulness practices, and examining innovative approaches to improve intervention outcomes. The work demonstrates that mindfulness-based interventions offer a promising way to deal with the multifaceted challenges associated with ADHD among adolescents. By cultivating attention and awareness, promoting emotional regulation and increasing self-regulation skills, mindfulness practices have the potential to significantly improve the well-being and quality of life of adolescents with ADHD.

1. Literature review

1.1 Adolescents with ADHD

ADHD, short for ADHD, is a neurodevelopmental disorder characterized by symptoms of hyperactivity, impulsivity and inattention. Traditionally, it has been viewed primarily as a childhood disorder, often leading to the misconception that people "grow out" of ADHD as they reach adulthood. However, research has shown that the underlying neurological differences associated with ADHD persist throughout life (Spiel et al., 2022). According to the manual for the diagnosis and statistics of mental disorders 5-DSM, attention deficit hyperactivity disorder (ADHD-Attention Deficit Hyperactivity) is defined as a syndrome of attention and/or hyperactivity-impulsive disorders, the frequency and intensity of which are higher than the developmental norm. The disorder is manifested mainly in attention difficulties, impulsivity and motor restlessness and the origin of this disorder is a neurological deficit (APA, 2013).

Adolescence is a period of significant physical, cognitive and social changes. Adolescents with ADHD face unique challenges, including academic difficulties, impulsivity leading to risky behaviors, and emotional dysregulation. The impact of ADHD on self-esteem, peer relationships and the transition to adulthood is profound. Academic underachievement, substance abuse, and mental health comorbidities are more common among adolescents with ADHD (Einat and Einat, 2007).

Adolescence with ADHD show great frustration in that they fail to achieve what they want and interact meaningfully with their environment, many times. This fact pushes them, as indicated in previous studies, to even more aggressive behavior

which expresses an aggravation of the symptoms of the disorder that characterizes them. Gradually, these teenagers are found to adopt a more and more aggressive nature. First, in front of the environment they know. There is a process of adaptation to this situation on the part of these teenagers and there are those who not only do not sink into depression as a result, but feel that the fear that the environment reveals to them is one that actually strengthens them (Partt, Cullen, Blevins et al., 2002).

Various studies have shown that the population of students with ADHD is one that has manifestations and signs of poor social functioning, aggressive behavior and a tendency to extreme moods is one that further expresses the connection between ADHD and criminal activity on the part of teenagers. Aggressive behavior is very common among teenagers with ADHD. From the point of view of this group, aggressive behavior in one space is equivalent to aggressive behavior in one space. A population with ADHD, especially among teenagers, sometimes has difficulty distinguishing between good and bad, and the nature of their aggressive behavior in one space is seen as legitimate and legal in another space as well, which expresses criminal activity on their part (Scheffler-Basserman and Nevanishiti, 2012, Sevecke, Kosson & Krischer, 2009, De Sancits, Nomura, Newcorn et al., 2012, Poiler, Vloe r& Herpertz - Dahlmann ,2012, Ruchkin, Kopodov, Koyanagi et al., 2016, Moedre, Groholt, Kjelsberg et al, 2011, Nabentzl, 2013).

1.2 Mindfulness'

Potential to alleviate ADHD symptoms and complement existing treatments. There are many different therapies and combinations of therapies that can help children with ADHD. It is the multidisciplinary team that recommends specific therapies and educational strategies to address each child's unique social, behavioral, communication, and academic needs, as well as periodically reassessing the condition to make reasonable adjustments in therapeutic strategies.(Krasteva – Ivanova M., 2020). Long-term regular physical activity can change brain structure and function related to cognition and behavior, and benefit executive function and academic achievement. Additionally regular physical activity improves mood, emotional regulation and reduces symptoms of depression and anxiety. Acute physical activity has been shown to improve executive functioning, particularly in areas such as inhibitory control and working memory, in both neurotypical children and those with ADHD. Rooted in Buddhist practices, mindfulness meditation emphasizes attention to the present moment and openness to emotions. Studies show that it may improve executive function deficits associated with attention deficit hyperactivity disorder, such as attention deficit hyperactivity disorder. Studies examining mindfulness interventions in children with ADHD have shown promising results, including improved executive functioning, reduced parental stress, and improved parent-child relationships (Bigelow et al., 2021).

Mindfulness is defined as "awareness that grows from directing attention to what is happening in the present moment and without judging the revelations that arise from the present experience on a moment-to-moment basis" (Kabat-Zinn, 2003,

p.144). That is, mindfulness is the mental awareness that develops when practicing meditation through directing attention to the sensations and thoughts that arise at a certain moment, without judging them but by accepting them with understanding.

Observing practices are a way to bring us closer to ourselves, teach us to accept life and navigate our way through it from a broader perspective. Apparently, this gathering inward sounds like an egocentric move or an escape from the world. But the truth is different. Precisely from looking inward at an environment that is so personal, usually something more universal is revealed about what it is to be a person (Argaz, 2021).

Mindfulness-based interventions represent a contemporary approach to self-regulation practices that aim to train attention and awareness to improve voluntary control over mental processes, ultimately promoting general mental well-being and specific abilities such as calmness, clarity and hyperactivity. Rooted in the Buddhist tradition and often considered the "third wave" of behavioral therapy. have gained a significant hold in Western psychiatry during the last decades. Initially introduced by John Cavett-Zinn in the 1970s as a complementary therapy for stress reduction and relaxation, MBIs have since been widely adopted in various settings such as schools, clinics, hospitals and correctional facilities to treat a variety of health problems including anxiety disorders, depression, chronic pain and drug use (Pozneanscaia, 2019).

A combination of the mindfulness technique with other treatment methods that include attention training and cognitive-behavioral therapy, led to the development of mindfulness-based treatment methods designed to deal with emotional difficulties and to develop attention and self-awareness. Their goal is to increase the development of mental well-being among adults but also among school-aged children. The method appeals to all people, even those who are healthy in mind and body. The method should make the exercisers come to the understanding that they are responsible for their mental well-being and that they can change it and thus promote their health as well. Therefore, this method has a psychological and educational element (Kabat-Zinn, 2003).

Gonen and Shen (2014) present in their article a study conducted by a psychologist at a university in Canada (Schonert-Reichl & Stewart-Lawlor, 2010) and examined the effect of an education program based on listening on a sense of psychological well-being and beneficial social emotional behavior, among students in grades 4-7. The study was commissioned due to a difficult social climate at the school, which also led to an actual dropout from it. The researchers suggested using an intervention program called "Mindfulness Education" (Mindfulness Educaion), which is designed to promote optimism and positive emotions through conscious attention, listening. The purpose of the study was to test the effectiveness of the program in four areas - optimism, self-image, positive emotions and social and emotional functions. Different practices of conscious listening were practiced in the classes participating in the program three times a day, three minutes each time with

the younger age group and a longer time with the adults. Besides listening practices, personal mantras and guided imagery of benevolent situations were also practiced. The teaching staff also received close guidance and accompaniment. The program was implemented for ten weeks and at the end of it, changes in the social, emotional, moral behavior and mood of the students were examined. The results were positive and the behavioral changes were immediate - there was a significant improvement in the area of social ability, attention and concentration functions. The students were less violent, more focused, less confrontational with the teachers and reported high optimism compared to the control group.

Today, most mindfulness-based interventions are integrated into psychiatry, with mindfulness-based stress reduction (MBSR) and mindfulness-based cognitive therapy being the most prominent, including elements of meditation, self-awareness, yoga, breathing exercises, and cognitive therapy techniques. While initially focused on adult populations with psychiatric disorders, mindfulness practices have recently gained popularity as child-focused interventions. The synergy control of attention, emotional regulation and self-awareness leads to the improvement of self-regulation when there are several areas of the brain that were activated during meditation states, related to control of attention, mind wandering, emotional response and self-awareness mechanisms (Pozneanscaia, 2019).

1.3 Mindfulness' and adolescents with ADHD

Mindfulness-based interventions include various programs designed to cultivate mindfulness skills and promote well-being. You can insist on different types of treatments. For example, mindfulness-based cognitive therapy or mindfulness-based stress reduction training which are designed to improve children's attention, awareness and self-regulation through attention exercises. Another example is conscious meditation training on executive function (EF) includes various mindfulness practices and exercises aimed at improving attention, working memory, inhibition and planning ability, the treatment includes topics such as conscious breathing, body awareness and conscious decision-making, plus homework. Another example of a mindfulness-based intervention is Integra Mindfulness Martial Arts (Integra MMA), a program that combines mindfulness, yoga, cognitive behavioral therapy, and martial arts to treat attention, inhibition, and self-regulation in youth with ADHD. and hyperactivity. Participants engage in point focus and active attention tasks, the treatment emphasizes acceptance, non-judgment and relaxation as core concepts (Pozneanscaia, 2019).

Santonastaso and his colleagues (Santonastaso et al, 2020) detail in their research on the treatment method "Mindfulness-Oriented Meditation Training (MOM)" in which each session includes three meditation exercises that focus on attention to breathing, attention to body parts, and in the attention of thoughts and feelings. After each meditation exercise, there is a debriefing phase that allows children to express their feelings and ask questions about the completed exercise. The meditation activities are presented to children as "games" aimed at promoting

awareness of breathing, body parts and thoughts. In the weekly sessions, children first focus on breathing, then on different body parts, and finally on observing their thoughts and feelings. Children are also encouraged to practice meditation several times a day outside of sessions to integrate the benefits of the practice into everyday life. During the intervention, they are assigned homework tasks.

Mindfulness meditation holds promise for improving cognitive and psychological well-being in both adolescents with ADHD. Derived from Buddhist practices, mindfulness meditation involves bringing attention to the present moment while remaining open to emotions. Mindfulness meditation may alleviate executive dysfunction commonly associated with attention deficit hyperactivity disorder, such as attention deficit hyperactivity disorder. Studies have demonstrated these benefits in students, adults and adolescents with attention deficit hyperactivity disorder, and have shown improvements in executive functioning, on-task behavior, reduced parental stress, and improved parent-child relationships (Bigelow et al, 2021).

Barranco-Ruiz and his colleagues (Barranco-Ruiz et al., 2019) examined in their study the effectiveness of mind-body therapies (MBTs) on ADHD symptoms in children and adolescents. The findings highlighted those eleven out of twelve studies showed significant positive results regarding the effect of mind-body treatments on ADHD symptoms. These therapies, including mindfulness, yoga, tai chi, and meditation, offer a multidimensional approach that combines exercise, deep breathing, and meditation to reduce stress and promote relaxation, which can positively impact ADHD symptoms. Mind-body therapies, especially mindfulness and yoga, have shown promising results in improving emotional balance, attention, cognitive efficiency, anxiety, stress, and other related factors in children and adolescents with ADHD. Moreover, mindfulness meditation has shown promise in reducing reports of depression and anxiety in ADHD populations.

Also, in the study by Bigelow and his colleagues (Bigelow et al. 2021) the findings indicated that mindfulness meditation led to improvements in inhibitory control, working memory and task switching immediately after the intervention and after a 10-minute delay. These results indicate that a single session of mindfulness meditation may be more beneficial for improving executive function in children and youth with ADHD, especially regarding improvements in inhibitory control, which is a significant challenge for people with ADHD. The observed benefits in executive functioning are consistent with previous studies that have demonstrated the positive effects of mindfulness meditation on inhibitory control in different populations. Several potential mechanisms could explain these findings, including promotion of response deautomation, induction of relaxation to neutralize inappropriate impulses, and modulation of amygdala activation, leading to improved prefrontal cortex function.

Pozneanscaia's (2019) study also found positive effects of MBIs on core ADHD symptoms such as inattention, hyperactivity, and impulsivity. Significant improvements were observed in sustained attention, working memory and emotional

regulation in a population of children and youth with ADHD. Three studies reported a significant reduction in at least one ADHD symptom, specifically inattention and hyperactivity impulsivity, as reported by parents and children. Furthermore, the study found improvements in various domains of executive functioning (EF), including sustained attention, working memory, and emotional regulation.

Santonastaso and his colleagues (Santonastaso et al, 2020) sought to evaluate the effect of an eight-week MOM (Mindfulness-Oriented Meditation Training) program on various domains in children with ADHD, including neuropsychological indices, ADHD symptoms, behavioral and emotional aspects, depression and anxiety symptoms, attention heart, parenting stress and academic skills. The studies demonstrated that the MOM program produced positive effects, with a large effect size, on neuropsychological measures, and showed significant improvements compared to baseline. Specifically, children in the MOM group showed marked improvements in executive functions such as working memory, inhibitory control, and sustained performance, as indicated by various cognitive tasks. Regarding ADHD symptoms, only the MOM group showed a significant reduction in symptoms of restlessness-impulsivity and overall ADHD symptoms, when these changes were clinically significant based on parent ratings. These findings suggest that MOM training can effectively alleviate ADHD symptoms in children.

In addition to this, Tercelli & Ferreira (2019) present in their study promising results regarding the reduction of parents' stress and overreactivity, as well as improvements in children's responsiveness and satisfaction among parents. These findings indicated that incorporating MBIs into interventions for parents of children with ADHD can significantly improve their well-being and the relationship between parent and child. From this, the researchers claim that there is a solid basis for incorporating mindfulness into parenting programs to reduce parental stress and improve family functioning. By incorporating principles of mindful parenting, MBIs may improve child compliance and foster self-regulation skills in children with ADHD.

In addition, it was found that the duration of interventions based on listening may not significantly affect their effectiveness, where shorter interventions may be just as effective as longer ones in reducing ADHD symptoms. Even engaging in a single session of activity is difficult in it, such as conscious coloring, has been linked to increased awareness (Barranco-Ruiz et al., 2019).

A randomized controlled trial (RCT) (Robe & Dobrean, 2023) investigated the effectiveness of a single session of mindfulness-based cognitive training in improving Conners Continuous Performance Test (CPT) scores, heart rate variability (HRV) and mood among children and adolescents youth. Between the ages of 6 and 17 are diagnosed with ADHD. It was hypothesized that the intervention would lead to significant improvements in CPT scores, CVC, and mood. However, the results only partially supported this hypothesis. The intervention was found to be ineffective in improving CPT-related scores of inattention and hyperactivity/impulsivity, as well as

CVC as assessed by HF-HRV and mood. Although there was a small, not statistically significant, decrease in omission errors after treatment, no significant differences were found between the conditions over time. This lack of significant improvement may be attributed to the brevity of the mindfulness exercises, which may not have been strong enough to cause substantial changes. The researchers present how previous meta-analyses have indicated moderate to large effects of mindfulness-based interventions (MBIs) on ADHD symptoms. However, most of these studies involved several weeks of training with weekly sessions and several modules. In addition, they mainly used behavioral measures, whereas in this experiment a computerized attention test was used. The results of the study regarding CPT performance are consistent with previous findings, suggesting that a single brief mindfulness session may not have a sufficient effect on cognitive task performance. The lack of complexity of the task or the limited duration of the mindfulness session can also contribute to the observed results.

Lee and colleagues (Lee et al, 2022) performed a meta-analysis that sought to comprehensively evaluate the impact of listening-based interventions on various aspects of ADHD symptomatology, behavior problems, mindfulness, and parental stress among children with ADHD. Synthesizing data from seven studies, the analysis revealed a significant, moderate to large effect size for reducing ADHD symptoms in children undergoing mindfulness-based interventions. The analysis identified age as a significant factor influencing intervention outcomes, with older children demonstrating greater effects on ADHD symptoms. This can be attributed to developmental changes in the presentation of ADHD symptoms, with inattention symptoms becoming more apparent over time. Adolescents may also benefit more from mindfulness interventions due to the insight and ability to integrate learned strategies. In addition, the study highlighted the need for strategies to promote the continuation of mindfulness practice after an intervention.

Another meta-analysis by Chimiklis and colleagues (Chimiklis et al., 2018) presented a comprehensive investigation of the effectiveness of yoga, mindfulness, and meditation interventions for children with ADHD. The results of the meta-analysis revealed a statistically significant effect of these interventions on various outcomes related to ADHD symptoms, including hyperactivity, inattention, and executive functioning, as reported by parents and teachers. In addition, improvements were observed in parent-child relationships, task behavior, parental stress, and attention to parental traits. The study found that longer session duration was associated with greater improvements in ADHD symptoms.

The study by Om Dan Ord and his colleagues (Van der Oord et al, 2012) evaluated the effectiveness of 8-week mindfulness training for children aged 8-12 with ADHD and parenting training for conscious listening at the same time as parents. As part of the study, the parents filled out questionnaires about their children's ADHD and ODD symptoms, their own ADHD symptoms, parental stress, parental overreaction, permissiveness and attentive awareness before, immediately after the 8-week training and at the 8-week follow-up. Teachers also reported the child's ADHD

and ODD behavior. The research findings demonstrated that there was a significant decrease in the ADHD behavior of the children, according to their parents' point of view, moreover, there was a significant increase in awareness and listening from the pre-test to the post-test and a significant reduction in parental stress. In contrast, the teachers' rating did not show significant effects. The study shows preliminary evidence for the effectiveness of mindfulness therapy for children suffering from ADHD, according to the parents' perception.

2 .How can mindfulness be used to help teenagers with ADHD?

Mindfulness-based interventions (MBIs) offer significant promise in supporting teenagers with ADHD by addressing multiple facets of their challenges. These interventions, such as mindfulness-based cognitive therapy and mindfulness-based stress reduction, are designed to cultivate attentional control, self-regulation, and emotional resilience through various mindfulness practices. For adolescents with ADHD, who often struggle with impulsivity and distractibility, these techniques provide valuable tools to enhance their ability to focus and manage their emotions effectively.

Central to MBIs is the practice of mindfulness meditation, which encourages individuals to bring non-judgmental awareness to the present moment. This practice not only helps in improving attention and reducing hyperactivity but also enhances executive functions like working memory and cognitive flexibility. These skills are essential for academic success and daily functioning, offering adolescents practical strategies to navigate their challenges with ADHD.

Research findings consistently highlight the positive impact of MBIs on reducing core symptoms of ADHD, including inattention and impulsivity. By learning to observe their thoughts and feelings without reacting impulsively, adolescents can develop greater self-control and emotional regulation. This, in turn, contributes to improved behavioral outcomes and better overall well-being for both the adolescents and their families. Moreover, mindfulness practices extend beyond formal sessions, encouraging adolescents to integrate these skills into their daily lives. Regular mindfulness practice reinforces the benefits gained during structured interventions, supporting sustained improvements in attention and self-management over time. By incorporating mindfulness into their routines, adolescents can experience ongoing benefits in managing stress and enhancing their overall quality of life.

Parental involvement is also crucial in the effectiveness of mindfulness interventions for teenagers with ADHD. Programs that include mindfulness training for parents help in reducing parental stress and improving communication and support within the family. This collaborative approach not only reinforces the skills learned by adolescents but also creates a supportive environment that enhances their well-being and success in managing ADHD symptoms.

In conclusion, mindfulness-based interventions represent a holistic approach to supporting teenagers with ADHD by addressing cognitive, emotional, and

behavioral aspects of their condition. By cultivating mindfulness skills, adolescents gain valuable tools to improve their attention, self-regulation, and emotional resilience, ultimately enhancing their overall quality of life and academic success. As research continues to explore the benefits of mindfulness in ADHD treatment, integrating these practices into clinical and educational settings holds promise for improving outcomes for adolescents with ADHD.

Summary and Conclusions

The reviewed studies collectively demonstrate the beneficial effects of mindfulness-based interventions on adolescents with attention deficit hyperactivity disorder (ADHD). Studies such as Schonert-Reichl & Stewart-Lawlor (2010), Santonastaso and his colleagues (Santonastaso et al., 2020) and Barranco Ruiz and his colleagues (Barranco-Ruiz et al.2019) emphasize significant improvements in ADHD symptoms, executive functioning, emotional regulation and outcomes Behavior following mindfulness interventions. These interventions encompass a variety of approaches, including mindfulness meditation, conscious breathing, and mindfulness-oriented meditation (MOM) training, suggesting the versatility and effectiveness of mindfulness techniques in treating ADHD symptoms (Schonert-Reichl & Stewart-Lawlor, 2010; Santonastaso et. al., 2020; Barranco - Ruiz et al, 2019)

The meta-analyses conducted by Lee et al. (2022) and Chimiklis et al. (2018) provide additional insights into the effectiveness of mindfulness interventions for adolescents with ADHD. Both studies reveal a significant reduction in ADHD symptoms, hyperactivity and inattention following mindfulness-based interventions. Moreover, Chimiklis et al. (2018) found improvements in executive functions and parent-child relationships, indicating the broader impact of mindfulness interventions on various domains of functioning in children with ADHD. These findings highlight the effectiveness of mindfulness approaches in dealing with the many challenges associated with ADHD (Lee et a, 2022; Chimiklis et al, 2018).

Despite the promising findings, certain limitations require consideration. For example, Robe & Dobrean (2023) found that a single session of mindfulness-based cognitive training may not produce significant improvements in cognitive task performance among children with ADHD. This suggests that the duration and intensity of mindfulness interventions may influence their effectiveness, necessitating further investigation of optimal intervention conditions. In addition, Tercelli & Ferreira (2019) emphasize the importance of continuous mindfulness practice beyond the intervention period to maintain long-term benefits. Future research should explore strategies to promote adherence to mindfulness practices and optimize intervention outcomes over time (Robe & Dobrean, 2023; Tercelli & Ferreira, 2019).

In conclusion, the reviewed studies provide convincing evidence for the effectiveness of mindfulness-based interventions in improving various aspects of functioning among adolescents with ADHD. These interventions demonstrate significant reductions in ADHD symptoms, improvements in executive functioning,

emotional regulation, and behavioral outcomes. However, several factors, including age (Lee et al., 2022) and session duration (Barranco-Ruiz et al., 2019), may influence intervention results, emphasizing the need for tailored and sustained mindfulness interventions.

Further, future research should focus on optimizing the design and implementation of mindfulness interventions for adolescents with ADHD. Longitudinal studies are needed to assess the long-term impact of intervention effects and to identify factors that contribute to treatment success. In addition, the study should explore innovative approaches to promote mindfulness practice beyond the intervention period, such as integrating technology-based interventions or integrating mindfulness into the school curriculum. By addressing these research priorities, we can further advance our understanding of the therapeutic potential of mindfulness for adolescents with ADHD and improve intervention outcomes.

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