

The effects of mindfulness-based interventions on symptoms of attention-deficit hyperactivity disorder among children: A meta-analysis

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Background and objectives

There is growing evidence for the beneficial clinical and educational effects of mindfulness practices for children (Zoogman et al., 2014; Kaunhoven & Dorjee, 2017). Previous research has suggested that mindfulness-based interventions (MBIs) may improve executive functioning in children (Takacs & Kassai, under review). In the current meta-analytic review, the effect of MBIs for the reduction of attention-deficit hyperactivity disorder (ADHD) symptoms was evaluated. Specifically, the primary aim was to determine the effectiveness of MBIs to decrease children's inattentive and impulsive-hyperactive behavior, the two core symptoms of ADHD. The second objective was to identify potential moderators of treatment efficacy. In line with previous studies and our recent investigation, we expected that MBI's render improved attention and reduced impulsivity. The impact of this meta-analysis may extend to both clinical practice as well as to education.

Methods

A systematic search was conducted in the databases of Scopus, Web of Science, PubMed and ProQuest. Published and unpublished (e.g., dissertations) studies that compared the effects of an MBI to a control group in a (quasi-) experimental design on inattentive or impulsive behavior in children (up to 12 years of age) were included in this quantitative synthesis.

Results

Based on 17 studies, preliminary results showed that mindfulness training decreased children's inattentive and hyperactive-impulsive behavioral symptoms with small, but significant overall effect size ($g+ = 0.243$). Considering the core symptoms of ADHD separately, results indicated no significant effect on inattentiveness ($g+ = 0.220$, $k = 4$, $p = .189$) but a marginally significant reduction in impulsivity ($g+ = 0.213$, $k = 6$, $p = .094$) in children. In addition to the aforementioned results, potential moderators of effects (e.g., age, duration of intervention, clinical status, components of intervention) will be discussed as well.

Discussion and conclusion

In conclusion, results indicate that MBIs have potential in decreasing impulsivity in children, the two core symptoms of ADHD. Possible top-down (e.g., conscious monitoring and regulation of attention) and bottom-up (e.g., stress and reactivity) mechanisms for this beneficial effect have been proposed (Zelazo & Lyons, 2012). Although, it has to be noted that the majority of the included studies recruited typically developing children, thus results should be interpreted carefully in relation to clinical samples.