



“Mindfulness-Based Interventions for Children and Adolescents With ADHD”

Day: Thursday 12th July 2018 Time: 10:45 – 12:00 Track: Clinical Applications

With a worldwide prevalence of 5% Attention-Deficit-Hyperactivity-Disorder (ADHD) is one of the most common disorders in children. ADHD is characterized by inattentive, impulsive, and/or hyperactive behaviour and interferes with school functioning, in social situations, and at home. Stimulant medication is often the first-line treatment, as it is the most effective treatment for ADHD to date. However, because medication treatment also has shortcomings (side effects, preference not to take medication, non-response etc.), there is a rising need for non-pharmacological alternative treatments. Preliminary evidence in the burgeoning field of mindfulness-based interventions (MBIs) showed reductions in the core symptoms of ADHD and improvements in educational settings. However, this evidence comes from non-controlled studies with small sample sizes, and/or a lack of randomisation. The current stage of research in this field is limited by a lack of randomized and controlled (clinical) trials with large samples, standardized formats for interventions, objective measures, and measures that are generalizable outside the intervention context. Studies presented in this symposium represent a new wave of research with large randomized trials conducted in different countries, assessing the effectiveness of MBIs for children with ADHD and their families in clinical and school settings.

Symposium overview

- Presenter 1** **Renée Meppelink** - Mindfulness versus Medication in Childhood ADHD: An RCT.
- Presenter 2** **Herman Lo** - The effects of family-based mindfulness intervention on ADHD symptomology in young children and their parents
- Presenter 3** **Anna Huguet** - Deficient Emotional Self-Regulation (DESR) in ADHD children: Mindfulness as a first line effective treatment modality
- Presenter 4** **Corina Greven** - The design of a study on mindfulness for children with ADHD and parallel mindful parenting versus care-as-usual: The MindChamp project
- Chair:** **Nirbhay Singh**



Mindfulness versus Medication in Childhood ADHD: An RCT.

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Rationale: Attention-Deficit-Hyperactivity-Disorder (ADHD) is one of the most common childhood disorders, with a prevalence of 5% in the general population. Medication is often the treatment of choice, as it currently is most effective. However, medication takes only short-term effects, treatment adherence is often low and most importantly; medication has serious side effects. Therefore, there is a need for other psychological interventions for children and adolescents with ADHD. Mindfulness Training, based on Eastern meditation techniques, is emerging as a potentially effective training for children and adolescents with ADHD.

Objective: The aim of this study is to compare the effectiveness of mindfulness training to the effectiveness of methylphenidate in a RCT in children and adolescents with ADHD on measures of attention, hyperactivity/impulsivity.

Method: A multicentre RCT with two follow-up measurements was used to measure the effects of mindfulness training versus the effects of methylphenidate. Participants were children and adolescents of both sexes diagnosed with ADHD, referred to urban and rural (academic) treatment centres. Participants were between 9 and 18 years old. In total 94 participants were included. The mindfulness training was conducted in small groups, and consists of eight weekly 1.5-hour sessions. Parents followed a parallel mindful parenting training. Short-acting methylphenidate was administered individually and monitored by a child psychiatrist.

Results: Results of this study will be presented during the symposium, analyses are currently on-going.

Discussion: Results of this study will inform mental health care professionals and health insurance companies about the clinical effectiveness of mindfulness training for children and adolescents with ADHD and their parents compared to the effectiveness of methylphenidate.



The effects of family-based mindfulness intervention on ADHD symptomology in young children and their parents

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Background and objectives: in Hong Kong about 4 percent of the school age children has been diagnosed as having Attention Deficit and Hyperactivity Disorder (ADHD). Some parents reserved to give medications for managing their children's ADHD symptoms due to their concerns about possible side effects. Mindfulness-based program has received more attention but its effects on young children was uncertain. The aim of the study is to investigate the feasibility of a family-based mindfulness intervention in improving children with inattention and hyperactivity symptoms.

Methods: A total of 100 children aged 5 to 7 years with ADHD symptoms and their parents were randomly assigned to a family-based mindfulness intervention (n = 50) or a wait-list control group (n = 50). The child program had eight sessions and each lasted for one hour, while the parent program had six sessions and each lasted for one and a half hour.

Results: Families from intervention group had greater improvements in children's ADHD symptoms, with medium effect sizes of -0.60 for inattention and -0.59 for hyperactivity; overall behaviors; and parenting stress and well-being than those in wait-list control group.

Conclusion: The positive results on the child primary outcome measures have provided initial evidence of the family-based mindfulness intervention as a treatment option to ADHD. The reduction of parental stress and increase in psychological well-being has demonstrated the value of mindfulness in enhancing parent's self-management.



Deficient Emotional Self-Regulation (DESR) in ADHD children: Mindfulness as a first line effective treatment modality

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Background and objectives: Deficient Emotional Self-regulation (DESR) is characterized by emotional lability, low frustration tolerance, impatience, impulsivity and aggressive outbursts. Clinical studies suggest that 25-45% of children with ADHD show DESR. The main goal is to evaluate the influence of a mindfulness structured treatment program in emotional dysregulation in children diagnosed with ADHD (naïve).

Methods: Randomized experimental study (Grant study: BR201501). 72 children between 7-12 years with ADHD were included, randomized into two groups (mindfulness and control group). Participants were recruited from a specialist ADHD unit, part of a child and adolescent mental health department within a pediatric Hospital and from a Child and Adolescent Mental Health Service. Treatment group received an intervention program based on mindfulness (8 sessions, once-per-week, 75 minutes and daily homework assignments). The control group received the usual treatment for this condition and/or school reinforcement and/or after-school reinforcement and/or ADHD psychoeducation, behavioral management. K-SADS-PL interview was administered to assess ADHD presentation. ADHD RS IV parents' version was administrated to assess the severity of ADHD symptoms and Attention/Anxiety-Depression/Aggression (A-A-A) scales on CBCL profile was used to measure DESR. X² test and Student's t-test were performed.

Results: 70.6% were boys with a mean age of 8.79 (SD 1.29). 64.7% had a diagnosis of combined ADHD and 52.9% showed comorbidity. No significant differences were observed in age, gender, comorbidity, ADHD subtype and dysregulation profile at baseline between both groups. 54.2% showed mild DESR and 22.9% presented severe DESR in pre-assessment measure. Children with combined presentation showed higher levels of DESR comparing with inattentive presentation ($p=0.018$). Mindfulness group showed a mean score of 200.63 in AAA scale CBCL profile at baseline and a mean of 190.59 after mindfulness intervention (difference -10.03 points). Control group showed a mean of 194.73 in AAA scale CBCL profile at baseline and a mean of 192.73 after treatment as usual (difference -1.93 points) Statistically significant difference were observed ($p=0.032$).

Discussion: This research suggests beneficial clinical effects of our mindfulness structured program in ADHD and emotion dysregulation symptoms in children.

Conclusion: We propose mindfulness as an effective treatment modality of emotional dysregulation in children with ADHD to include in intervention protocols of ADHD.



The design of a study on mindfulness for children with ADHD and parallel mindful parenting versus care-as-usual: The MindChamp project

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Background and objectives: Attention deficit/ hyperactivity disorder (ADHD) is a heritable neurodevelopmental disorder (youth prevalence 6%) characterised by inattention and hyperactivity-impulsivity. Care-as-usual (CAU) for ADHD consists of psychoeducation, medication and/or behavioural intervention. However, CAU for ADHD comes with limitations, and many families are looking for alternative treatments. Pilot studies in youth with ADHD suggest that mindfulness training may be a promising alternative, by improving self-control (e.g. inhibition, delay of gratification, planning) that is a key problem in ADHD. However, these pilot studies were based on small sample sizes and lacked a control group and/or randomisation. The overall aim of this study is to examine the effectiveness of mindfulness training for youth with ADHD in a randomised-controlled trial (RCT), extending previous pilot work.

Methods: This ongoing RCT compares mindfulness training as an add-on to CAU for youth with ADHD (N=100; ages 8-16 years), with a control group (CAU only). We use the manualised 8-week MYmind mindfulness training, which is based on mindfulness-based cognitive therapy (MBCT) and adapted to the needs of families of ADHD. MYmind includes parallel mindful parenting training for the parents. Data from children, parents and school teachers is collected at baseline, endpoint, 2-months and 6-months (except teachers) follow-up. Data collection includes assessments of child self-control, ADHD symptoms, comorbid symptoms, and parental outcomes (e.g. parental self-control, parental well-being), using diagnostic interviews, neurocognitive testing and questionnaires. In addition, saliva samples are collected from children at baseline and endpoint for DNA and RNA isolation.

Results: Our primary hypothesis is that mindfulness training will reduce self-control problems of youth with ADHD, relative to control group. As secondary hypotheses, we expect reductions in ADHD and comorbid (e.g. ASD) symptoms, as well as improvements in parental outcomes. Design, hypotheses and preliminary data will be presented.

Discussion: If mindfulness training proves effective, this has implications for recommending mindfulness as an add-on to CAU for ADHD. **Conclusion:** Results from this study will directly target unmet clinical needs to impact the health care of youth with ADHD and improve the lives of patients with ADHD and their families.