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The health benefits of mindfulness-based interventions for children and adolescents

One-year estimates of prevalence indicate that approximately one in four adolescents in the United Kingdom and United States experience a mental health disorder (Merikangas, Nakamura, & Kessler, 2009). This rises to one in three for adolescents (UK and US) who have experienced a mental health disorder at some point in their lives (Merikangas et al, 2009). Anxiety disorders are the most common where the lifetime prevalence estimates for adolescents aged 13-18 years old are as high as 32%. This is followed by behaviour disorders and mood disorders where the lifetime estimates are 19% and 14% respectively (Merikangas, He, & Burstein, et al, 2010). Stress and depression, poor emotion regulation capacity, and under-developed behavioural and social coping skills in adolescents are principal factors that can lead to academic non-completion and diminished opportunities in later life (Greenberg, Domitrovitch, & Bumbarger, 2001).

Throughout the last decade, there has been growing interest into the clinical application of mindfulness-based interventions (MBIs) for alleviating issues of psychological distress, as well as for the treatment of medical illnesses more generally. Mindfulness is a spiritual or psychological faculty and described in the healthcare literature as an intentional engaging of a non-judgemental awareness of the present moment (Kabat-Zinn, 1990). The practice of mindfulness – inherited from Buddhist tradition – has been shown to be efficacious for the treatment of a broad range of medical and psychological illnesses (Grossman, Niemann, Schmidt, & Walach, 2004). Mindfulness has been utilized in secularized programs such as Mindfulness-Based Stress Reduction (MBSR) comprising weekly meetings (approximately

three hours duration) typically delivered over an eight-week period. Mindfulness-Based Cognitive Therapy (MBCT) follows a similar structure (i.e., eight-week, group-based, weekly meetings featuring guided mindfulness exercises, a guided meditation CD for daily self-practice, and an all-day retreat) and is advocated by the National Institute for Health and Clinical Excellence (NICE) for the prevention of relapse for those with recurrent depression. Given the large increase in empirical research and usage of mindfulness, the purpose of this short article is to provide a concise overview of the supportive evidence for the use of MBIs for children and adolescents in health and educational contexts.

Empirical research on mindfulness

Meta-analytic studies of MBIs have demonstrated that MBIs generally yield moderate to strong effect sizes, with the strongest effects typically reported for the treatment of anxiety and/or mood-spectrum disorders (e.g., Vollestad, Nielson, & Nielson, 2012). Moderately sized effects have also been reported for reduced anxiety and mood symptoms in study populations with somatic illnesses such as cancer, diabetes, heart disease, and chronic fatigue (Hofmann, Sawyer, Witt, & Oh, 2010). There is also evidence (e.g., from single randomized controlled trials or studies employing other empirical designs) for the salutary effects of MBIs in the treatment of a broad spectrum of psychopathologies such as substance-use disorders, eating disorders, attention-deficit hyperactivity disorder, and bipolar disorder as well as for improved cognitive functioning, social-emotional resiliency, and smoking cessation (e.g., Chiesa, Calati, & Serretti, 2011; Hofmann, et al, 2010;

Witkiewitz, & Bowen, 2010). Meta-analytical findings also indicate moderate success for the direct treatment of various somatic illnesses such as chronic pain, psoriasis, coronary heart disease, fibromyalgia, and cancer (Baer, 2003).

Whilst there is debate surrounding the most appropriate age to introduce mindfulness practice to children and adolescents, there is some evidence that supports the utilization of MBIs for school-age populations (see review by Burke, 2010). In one of the first randomized controlled trials (RCTs) of MBSR for adolescents, outpatients aged approximately 15 years old ($n=102$) with mood, anxiety, and other psychiatric disorders demonstrated significant improvements in levels of anxiety, depression, somatic distress, self-esteem, and sleep quality (Biegel, Brown, Shapiro, & Schubert, 2009). More recently, in an RCT of a 12-week mindfulness and yoga intervention involving 97 school-age children (with an average age of approximately 10 years), those who received the mindfulness training showed significant improvements compared to the control group in problematic responses to social stress including reductions in thought rumination, intrusive thoughts, and emotional arousal (Mendelson, et al, 2010). The intervention was also found to be acceptable to students, teachers, and school administrators. In a controlled study of an intervention known as 'Mindfulness Education' (a teacher-taught classroom-based manualized 10-lesson program involving breath awareness and attentive listening exercises) involving 246 adolescents (with an average age of approximately 13.5 years), those who received the Mindfulness Education program demonstrated significant improvements in optimism and teacher-rated classroom social competent behaviours (Schonert-Reichl, & Lawlor, 2010).

In addition to the health-related benefits of MBIs for school-aged children, there is preliminary evidence to suggest that mindfulness practice also improves cognitive function. For example, elementary school children ($n=64$) aged 7- to 9-years who undertook an eight-week MBI consisting of two 30-minute sessions per week showed significant improvements in metacognition and executive function (Flook, et al, 2010). These outcomes are consistent with findings in adult populations where mindfulness practice has been shown to

improve selective and executive attention as well as working memory capacity (see review by Chiesa, et al, 2011).

A change in cognitive perspective due to participants adopting a more present-orientated attentional focus has been recognized as an important mechanism underlying such changes (Baer, 2003). A greater perceptual distance from maladaptive cognitive processes makes it easier for children and adolescents to let go of and simply observe their thoughts and feelings as passing phenomena. Other proposed mechanisms for MBIs include: (i) greater exposure to thoughts and feelings leading to reduced fear/anxiety responses as elicited by external stimuli, (ii) reduced autonomic arousal leading to greater levels of calm and relaxation, and (iii) greater self-awareness leading to improved psychosocial coping strategies (Baer, 2003).

Cost-effectiveness is a particular strength of MBIs which can be delivered with as little as 3.2 facilitator hours per participant (i.e., based on a total of 32 intervention hours delivered by one facilitator to 10 participants). Compared to pharmacotherapy, reports of adverse side-effects following MBIs are also uncommon. A further strength of MBIs is their versatility. This relates to their suitability for treating a wide variety of health problems as well as the ease at which the structure of MBIs can be modified to suit the needs of different population groups. For example, for the teaching of children and adolescent groups, it is recommended that MBIs undergo the following adjustments: (i) a greater use of explanation and rationale, (ii) integration of age-group specific practices such as 'mindfulness of sounds' (involving mindful listening to different genres of music) and 'mindful texting', (iii) use of appropriate metaphors (e.g., using the example of the difficulty in getting a puppy to sit still as a means of explaining the concept of 'mindlessness' and the 'wandering mind'), (iv) a greater variety and shorter duration of mindfulness practices in order to avoid boredom (e.g., practice session lengths of 1-10 minutes duration), and (v) the engagement of parents and carers (Thompson, & Gauntlett-Gilber, 2008).

Weaknesses of mindfulness research

Although there is evidence of the efficacy of

MBIs, their wider acceptance as viable alternative treatments has been hindered by a significant lack of methodological rigour. Many of the studies (including those of children and adolescents) have small sample sizes. Furthermore, heterogeneity in terms of how the various MBIs conceptualize mindfulness, as well as differences in program structure (i.e., length of program, duration of weekly sessions, quantity of psycho-education, amount of physical exercise/yoga-type activities, and differences in levels of experience and compliance/supervision of course facilitators) limits the validity of collective findings.

Few MBI studies adequately control for potential confounding factors such as concurrent psychopharmacology, concomitant psychotherapy, and/or illness severity although these concurrent conditions are typically less pronounced in child and adolescent samples (Klainin-Yobas, Cho & Creedy, 2012). In fact, even where an RCT design is employed, few of the studies are particularly robust (e.g., due to factors such as insufficient details to enable replication, an overall lack of transparency, an absence of justification of sample sizes, etc.). Coupled with a general lack of information concerning the structure of control-group interventions, 'specificity' in terms of control design presents a further notable limitation. Furthermore, there is a relative scarcity of long-term follow-up data evaluating the maintenance effects of MBIs in both adolescent and adult samples.

Other issues in mindfulness research

Inconsistency in the use and misuse of Buddhist concepts also threatens the longer-term credibility of MBIs. For example, within the psychological literature, mindfulness meditation is generally viewed as being synonymous with a technique known as insight meditation. Although a small number of Buddhist approaches appear to share this view, the more traditional perspective is that insight meditation refers to a subtle form of meditative analysis that can permit a 'penetration' into the 'empty' nature of self and reality. Confusion in this respect is probably the reason why the vital role of insight meditation (in relation to its more traditional depiction) has been largely overlooked in the design of MBIs, and in the

medical and psychological literature more generally.

A further concern relates to the level of experience (and therefore the credibility and aptitude) of teachers and facilitators of MBIs. In addition to being entirely unregulated (i.e., there is no central accrediting body), MBI facilitators may have as little as one year's mindfulness experience following completion of a single eight-week course (Mental Health Foundation, 2009). Cullen (2011), in reference to the stream of mindfulness teachings recently introduced by Western psychologists, states that MBIs are 'their own new lineage'. Lineage is a particularly important term and concept within Buddhism. This essentially relates to the authenticity of the Buddhist teachings (or Dharma) in the sense that there should be an unbroken chain of transmission flowing from teacher to student that can be traced back to the historical Buddha (or to another 'fully realized' being).

However, within Buddhism, and in addition to the direct receiving of transmissions from an accomplished meditation master, lineage can only be said to be truly intact when the teachings are eventually 'brought to life' at the point of realization. In order to effect such a realization, authentic Buddhist masters generally undergo decades of focussed meditation training and invariably endure great hardships prior to teaching the Dharma. Therefore, claims that MBIs constitute an authentic lineage in the traditional Buddhist sense, are at best, totally unrealistic. To highlight this point further, the telephone or email delivery of MBIs as implemented in a number of recent mindfulness studies can hardly be said to be in the spirit of traditional Buddhist transmission (e.g., Salmoiraghe-blotcher, et al, 2012; Gluck, & Maercker, 2011).

Students more accustomed to Buddhist principles have been shown to conceptualize mindfulness in different ways compared with students from non-Buddhist backgrounds (Christopher, Charoensuk, Gilbert, Neary, & Pearce, 2009). Thus, there are issues relating to the cross-cultural validity of existent measures of mindfulness, and it is currently unclear whether Westernized versus Buddhist approaches to meditation and mindfulness involve different mediating mechanisms.

Concluding comments

Interest into the health applications of MBIs has increased substantially in the last ten years including for children and adolescents. MBIs appear to represent a cost-effective, acceptable, and non-invasive means of treating a broad spectrum of medical and psychological illnesses. There is also preliminary evidence of the acceptability and salutary health effects of MBIs in children and adolescent population groups. However, regardless of the growing body of evidence signifying the potential merits of MBIs, future studies should aim to address some of the methodological issues that currently hinder their wider acceptance as robust alternative interventions. Furthermore – and perhaps of greater importance – there is an urgent need for greater continuity, clarity, and consistency in terms of the identity of MBIs. Clinicians and researchers of secularized mindfulness meditation should be mindful of the need to respect and safeguard the credibility, heritage, and ethical values not only of clinical practice in general but also of the Buddhist teachings.

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