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## Mindfulness for Children and Youth: A Review of the Literature with an Argument for School-Based Implementation

### Méditation de pleine conscience pour les enfants et les jeunes: Survol de la littérature et argumentation pour sa mise en œuvre en milieu scolaire

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#### ABSTRACT

Interest in the use of mindfulness-based activities with children and youth is growing. The article evaluates empirical evidence related to the use of mindfulness-based activities to facilitate enhanced student learning and to support students' psychological, physiological, and social development. It also provides an overview of interventions that include mindfulness. There is a need to provide children with a way to combat the stress and pressure of living in today's highly charged world: mindfulness may be one helpful alternative. The implications of a universal school-based mindfulness intervention are discussed, and directions for future research are offered.

#### RÉSUMÉ

L'emploi des activités basées sur la pleine conscience avec les enfants et les jeunes attire de plus en plus d'intérêt. Dans cet article, on évalue les preuves empiriques concernant les emplois des activités basées sur la pleine conscience qui cherchent à aider les étudiants à apprendre et à appuyer leur développement psychologique, physiologique, et social, ainsi qu'on fournit une synthèse des interventions qui incluent la pleine conscience. Il est nécessaire de donner aux enfants un moyen de battre le stress et la pression du monde surchargé d'aujourd'hui, et la pleine conscience peut s'avérer une des options utiles. La discussion traite les implications d'une application universelle d'interventions basées sur la pleine conscience dans les écoles et offre des conseils pour des recherches futures.

Children and adolescents are experiencing stress at unprecedented levels (Barnes, Bauza, & Treiber, 2003; Fisher, 2006; Mendelson et al., 2010). Increasing stress may result in anger, anxiety, depression, and externalizing behaviours (e.g., conduct disorder), as well as lowered self-esteem and self-confidence (Barnes et al., 2003; Mendelson et al., 2010; Smith & Womack, 1987). Research suggests that anxiety, depression, and low self-esteem can negatively influence students' school performance by disrupting their thinking and hindering their learning (Barnes et al., 2003; Fisher, 2006; Mendelson et al., 2010). This places schools in the position of influencing students' social, emotional, and behavioural development in ways that educators did not see in previous generations. Teachers need proven methods

and strategies to assist students in coping with an increasingly challenging world. Children and youth need strategies that will empower them and support them in successfully navigating their world.

In this article, research investigating the use of mindfulness techniques in managing a variety of challenges faced by child and youth populations is examined. An argument for integrating these techniques into a universal school-based prevention program is provided, as well as directions for future research. The review begins by providing a brief overview of the historical and theoretical underpinnings of mindfulness and some definitions of mindfulness.

#### THEORETICAL UNDERPINNINGS

The definition of mindfulness is varied in nature. No one definition can claim consistent usage. Langer and Moldoveanu (2000) suggest that it is “best understood as the process of drawing novel distinctions” (p. 1). The definition put forward by Langer and Moldoveanu articulates that, by drawing novel distinctions or seeing things in new ways, we stay in the present. Kabat-Zinn’s definition, “paying attention in a particular way: on purpose, in the present moment, and non-judgmentally” (1994, p. 4), is frequently used in the literature. This definition aligns itself with Shapiro, Carlson, Astin, and Freedman’s (2006) three aspects of mindfulness: intention, attention, and attitude. Bishop et al. (2004) proposed an operational definition of mindfulness that consists of two components: self-regulating attention and adopting an open and accepting orientation toward one’s experiences. A common element in all these definitions is a focus on attention, which is at the core of traditional Buddhist mindfulness practices (Kabat-Zinn, 2003).

Kabat-Zinn (2003) speaks to the underlying Buddhist traditions of mindfulness and notes that the actual practice of mindfulness is rooted in a larger framework of nonharming. Kabat-Zinn suggests that mindfulness practices based in the Buddhist tradition can ameliorate suffering by calming and clearing the mind, opening the heart, and distilling attention. When practiced in the Buddhist tradition, mindfulness is more than a tool; it is a way of being in the world and understanding the world.

Introducing children to this practice may better prepare them for present and future challenges. The openness and readiness to learn that many children possess may make them receptive to learning mindfulness. Children spend a large percentage of their time in the school environment; therefore, this is an ideal setting for them to learn mindfulness-based practices.

#### *Overview of Mindfulness*

Mindfulness is a way of directing one’s attention that originates in Eastern meditation traditions (Baer & Krietemeyer, 2006; Kabat-Zinn, 2003). When utilizing or adapting mindfulness-based practices in secular contexts, such as education, it is important to remember the origins and treat it respectfully. By

being respectful of the historical beginnings of mindfulness, future generations will gain a greater understanding of mindfulness practice (Kabat-Zinn, 2003). Brown and Ryan (2003) identify consciousness, with its attributes of awareness and attention, as a core characteristic of mindfulness. According to Napoli, Krech, and Holley (2005), the key features of mindfulness include a focus on the breath, paying attention to the events occurring within one's mind and body, and bearing witness to one's own experience. Shapiro et al. (2006) propose that development occurs when individuals are able to broaden their perspective and see beyond their own frame of reference.

In essence, the literature reviewed suggests that mindfulness training teaches individuals a different way of being. While engaged in mindfulness practice, individuals pay open-minded and open-hearted attention to thoughts or events as they unfold. Mindfulness involves paying attention to both the thoughts themselves and one's reaction to them. By utilizing a mindfulness-based technique such as a body-scan meditation, individuals have an opportunity to view their reactions simply and nonjudgementally, like ships passing on a river, rather than truths that need to be accepted and acted upon (Williams, 2010).

#### WHY MINDFULNESS WITH CHILDREN AND YOUTH?

Research suggests that mindfulness training can reduce stress and improve self-confidence, relationships with others, attention, optimism, and self-esteem (Fisher, 2006; Schonert-Reichl & Lawlor, 2010). Semple, Lee, and Miller (2006) suggest that mindfulness-based approaches may be suitable interventions for anxiety, depression, and/or conduct disorder. Shapiro, Brown, and Astin (2008) discuss three ways to apply meditation to higher education that are similarly applicable to elementary and secondary education. Mindfulness may enhance cognitive and academic performance, manage academic stress, and affect the holistic development of the individual (Shapiro et al., 2008). Valentine and Sweet (1999) found that mindfulness meditation increased students' ability to sustain focused attention even when the stimulus was unexpected.

Mindfulness-based practices appeal to children and youth because they are self-management techniques and therefore allow them to play a key role in their own growth and development (Semple, Reid, & Miller, 2005). When teaching mindfulness practices, it is necessary to consider the developmental stage of potential candidates in addition to addressing differences in attentional and cognitive abilities and interpersonal functioning (Semple et al., 2006). Teaching mindfulness techniques to all students creates the potential for greater self-awareness, improved impulse control, and decreased emotional reactivity to challenging events (Thompson & Gauntlett-Gilbert, 2008).

Napoli et al. (2005) posit, "the consistent reinforcement of using the mindfulness activities in each class will have long lasting effects and can filter through the children's school experience and personal lives" (p. 114). Schonert-Reichl and Lawlor (2010) found that students who participated in a mindfulness education

program saw significant increases in optimism and socially competent behaviours. It can be argued that instruction in mindfulness-based practices will empower children and youth and provide them with a valuable skill that they can use throughout their lives.

### *Stress in the Lives of Children and Youth*

Many children face a constant barrage of images and sounds in today's technologically focused world. This constant overload can challenge children's thinking capacity and make learning difficult (Fisher, 2006). These stressors can increase risk for a variety of negative outcomes in children and youth "including social-emotional difficulties, behavior problems, and poor academic performance" (Mendelson et al., 2010, p. 985). Mindfulness-based interventions show promise in helping children manage stress by improving self-regulation, mood, and social-emotional development (Mendelson et al., 2010).

Barnes et al. (2003) suggest there has been an increase in negative school behaviours, which is partly attributable to increased exposure to chronic psychosocial stress in the form of family breakdown, violence in media, information overload, and poverty. This has resulted in children and youth exhibiting increased anger and violence, which correlates to an increase in anxiety and stress levels (Barnes et al., 2003).

Other stressors experienced by children and youth are breakdown of relationships with friends and/or family, education and work stressors, parental divorce, death of a loved one, and suicide (Parker & Roy, 2001). Increased stress is a risk factor for depression, and stressful life events are predictive of less positive response to treatment (Parker & Roy, 2001). Research suggests that mindfulness-based training may improve students' ability to tolerate stress (Shapiro et al., 2008). The negative impact that stressful life events have on psychological and physiological functioning heightens the importance of finding an effective strategy to manage life stressors that is amenable to children and youth.

## MINDFULNESS-BASED INTERVENTIONS

Research suggests that there are a variety of mindfulness-based interventions that are effective with children and youth (Abrams, 2007; Galantino, Galbavy, & Quinn, 2008; Mendelson et al., 2010). These approaches include yoga, body scan, meditation, breathing exercises, and Tai Chi, all of which may increase an individual's capacity for attention and awareness (Abrams, 2007; Mendelson et al., 2010). Yoga and Tai Chi may be more appealing to youth because they combine focused attention on the breath with movement, thus providing an outlet for youthful energy (Mendelson et al., 2010).

Mendelson et al. (2010) utilized yoga, breathing exercises, and guided mindfulness practices in their study of the impact of mindfulness interventions on stress in fourth- and fifth-grade students. The goal of using these interventions was to improve the children's capacity for sustained attention as well as increase their

awareness of and ability to regulate their cognitive, physiologic, and bodily states (Mendelson et al., 2010). Participants reported that they enjoyed the intervention and noticed a decrease in their symptoms of stress (Mendelson et al., 2010). Research also shows yoga has physiological benefits that increase resilience to stressful events in practitioners (Galantino et al., 2008).

Napoli et al. (2005) used breath work, body scan, movement, and sensorimotor activities in their research into whether mindfulness training increases elementary school children's ability to focus and pay attention. By teaching children mindfulness practices, instructors have an opportunity to teach them to accept all of their thoughts, feelings, and behaviours without judgement (Abrams, 2007). Children and youth who engage in mindfulness practices are able to self-soothe, calm themselves, and become more present (Abrams, 2007).

Singh, Wahler, Adkins, and Myers (2003) developed a simple mindfulness-based intervention, *Meditation on the Soles of the Feet*, that they have taught to children, adolescents, and young adults presenting with conduct disorder and mild intellectual disabilities (Singh et al., 2007). The rationale for this intervention is that by shifting attention away from an anger-producing or anxiety-provoking stimulus to a neutral point such as the soles of one's feet, children and youth can gain increased control over behaviours (Singh et al., 2003). Singh et al. (2007) suggested, "By dropping the mind to the soles of the feet, the individual is able to anchor the mind on a neutral setting event and be in the present moment" (p. 59). Adolescents utilizing this approach reported feeling more relaxed, an increased ability to control their behaviour, greater focus, and improved sleep (Singh et al., 2007).

### *Mindfulness-Based Stress Reduction*

Kabat-Zinn (2003) developed mindfulness-based stress reduction (MBSR) to train clients in ancient and potentially transformative practices that would supplement their medical treatments. MBSR utilizes mindfulness-based practices as the primary change agent (O'Brien, Larson, & Murrell, 2008). These mindfulness practices include mindful eating, body scan, sitting meditation, Hatha Yoga, walking meditation, and mindfulness in everyday living (Baer & Krietemeyer, 2006). The developers originally planned MBSR as an 8-week educational course designed to empower participants by encouraging them to take an active role in their well-being. Hospitals, clinics, schools, prisons, and a number of other settings throughout the world now offer MBSR (Kabat-Zinn, 2003). Kabat-Zinn et al. (1992) found that MBSR was an effective intervention for reducing the symptoms of anxiety.

MBSR has been adapted for use with children and adolescents with some success (Saltzman & Goldin, 2008). According to Saltzman and Goldin (2008), children who have participated in a MBSR intervention show improvements in attention, self-regulation, social competence, and general well-being. Adaptations to MBSR for children may include shortening the meditation practices and having a mindful eating practice at each session (Saltzman & Goldin, 2008).

### *Mindfulness-Based Cognitive Therapy*

Researchers used mindfulness-based cognitive therapy (MBCT) in the treatment of recurring depression (Ma & Teasdale, 2004). The premise behind adding mindfulness-based techniques to cognitive-behavioural therapy (CBT) is that by learning a new way of paying attention to their thoughts, clients could reduce their tendency for depressogenic thinking (Ma & Teasdale, 2004). MBCT is a manualized treatment that was adapted from MBSR, thus combining aspects of CBT for depression with aspects of mindfulness-based stress reduction (Ma & Teasdale, 2004; Morgan, 2005).

The mindfulness-based component of MBCT involves guided or unguided mindfulness exercises designed to increase nonjudgemental awareness of thoughts, feelings, and emotions as they occur, which is also referred to as decentring (Ma & Teasdale, 2004; Morgan, 2005). The theory is that by practicing mindfulness when one begins to see a shift to more negative thinking, it is possible to disengage from the automatic ruminative thought patterns that can increase the likelihood of relapse into depression (Ma & Teasdale, 2004). Research into MBCT suggests that it is effective for individuals who have experienced three or more episodes of depression, and is most effective when environmental factors are not the cause of the relapse (Ma & Teasdale, 2004).

However, MBCT is not just an intervention for depression; research has also indicated it to be efficacious for generalized anxiety disorder (Evans et al., 2008). Results from this study suggest that MBCT may be an effective intervention for reducing anxiety and mood symptoms and enhancing awareness of moment-to-moment experiences (Evans et al., 2008). A significant finding is that participants in the study reported feeling they had gained something of “lasting value” by participating in the study (Evans et al., 2008, p. 720). This provides further support to the benefits of mindfulness-based practices and the benefits that practitioners may see in various aspects of life and functioning.

MBCT has been adapted for children, and there is now a mindfulness-based cognitive therapy for children (MBCT-C). A 12-week developmentally appropriate version of MBCT has been designed to improve self-management of attention, promote decentring, enhance emotional self-regulation, and develop social-emotional resiliency (Semple & Lee, 2008; Semple, Lee, Rosa, & Miller, 2010). In adapting MBCT for children, the seated breath and body meditations are shortened and mindful movement exercises are added to make it more suitable and appealing to children (Semple et al., 2010). When considering the developmental stage of children, it was necessary to adapt MBCT related to their attentional capacity and stage of abstract reasoning (Semple & Lee, 2008).

#### EMPIRICAL EVIDENCE: WHAT THE RESEARCH REPORTS

##### *Effects of Mindfulness on Mental Health and Psychological Well-Being*

The number of children and adolescents diagnosed with mental health disorders, such as depression and anxiety, is increasing (Farrell & Barrett, 2007; L.

Hayes, Bach, & Boyd, 2010; Kashani & Orvaschel, 1988; Parker & Roy, 2001). Not only do mental health concerns appear to be on the rise, but so do incidences of childhood trauma (Gordon, Staples, Blyta, & Bytyqi, 2004; Lilly & Hedlund, 2010). Research suggests that children who actually have a diagnosis represent only a small percentage of the population that is coping with a mental health issue (Farrell & Barrett, 2007). This alarming finding reinforces the need for a universal prevention program that has shown some efficacy in treating the whole child.

When children or youth are coping with a mental health concern, it can inhibit their ability to disregard meaningless stimuli, which results in increased distractibility, poor organizational skills, and a decreased ability to focus on a specific task (Shapiro et al., 2008). Increasingly, research is providing support for the use of mindfulness-based activities to reduce mental health concerns, such as anxiety and depression, and enhance psychological well-being (Baer, 2003; Beauchemin, Hutchins, & Patterson, 2008; Brown & Ryan, 2003; Evans et al., 2008; Lilly & Hedlund, 2010; Smith & Womack, 1987). In light of the acceptability of mindfulness to children, it seems a logical approach to alleviating psychological distress and improving overall well-being.

#### MINDFULNESS FOR TRAUMA

Trauma experienced early in an individual's life can increase the possibility of experiencing deleterious psychological and physiological outcomes later in life (Cohen, Mannarino, & Deblinger, 2006). Exposure to psychosocial trauma may permanently alter the stress-response system and predisposes children to mental health disorders, such as depression and anxiety (Cohen et al., 2006; Selhub, 2007). Depersonalization or feeling detached from one's body or mind is a form of mental escape that has been linked with childhood trauma (Michal et al., 2007). Michal et al. (2007) studied the effect of mindfulness on the severity of depersonalization and found a strong inverse correlation between mindfulness and depersonalization. The authors acknowledge the limitations of this study; however, their results are intriguing and warrant further inquiry. Abrams (2007) suggests that mindfulness practices such as yoga, breathing, and meditation can be useful for grounding during traumatic flashbacks.

While mindfulness practices may be useful for some people, it is important to note that there are people experiencing traumatic stress for which mindfulness-based practices are contraindicated (Shapiro & Carlson, 2009). Therefore, it is important for the individual teaching mindfulness to have some history on the participants and knowledge of when mindfulness may not be suitable.

Gordon et al. (2004) utilized mind-body skills to treat posttraumatic stress disorder in Kosovo high school students. The interventions used in this study included activities such as meditation, relaxation techniques, and guided imagery (Gordon et al., 2004). Gordon et al. found that mind-body skills training groups were effective in reducing symptoms of posttraumatic stress in this population.

## MINDFULNESS FOR ANXIETY AND DEPRESSION

Anxiety has been found to be the most reported psychopathology in childhood and adolescence (Kashani & Orvaschel, 1990; Semple & Lee, 2008; Silverman, Pina, & Viswesvaran, 2008). Costello, Egger, and Angold (2005) report the lifetime estimate of developing any anxiety disorder at between 8.3% and 27%. Anxiety disorders in youth may persist into adulthood and cause considerable impairment in many areas of life (Silverman et al., 2008). Anxiety can co-occur with other anxiety or affective disorders as well as depression, conduct disorder, oppositional defiant disorder, and attention deficit hyperactivity disorder (ADHD) (Costello et al., 2005; Simon & Bögels, 2009).

Anxiety negatively affects a wide range of behaviours, and this negative influence only increases with age, affecting inter- and intrapersonal areas (Kashani & Orvaschel, 1990). Impaired attention is a core symptom of anxiety; therefore, strategies such as mindfulness-based practices that work to improve students' attentional focus may reduce anxiety in children (Semple et al., 2005). Biegel, Brown, Shapiro, and Schubert (2009) studied the effectiveness of MBSR with adolescent outpatients. The participants self-reported reduced symptomology related to anxiety, depression, and somatic distress in addition to increases in self-esteem and improved sleep (Biegel et al., 2009). Effective interventions for childhood and adolescent anxiety are critical for improving the quality of life for those affected.

Depression is prevalent in children and adolescents, with depression rates of 18% overall, and 25% in females (L. Hayes et al., 2010). The likelihood of developing depression during adolescence is increasing, and the age of onset is decreasing (Parker & Roy, 2001). As with anxiety, depression co-occurs with another condition anywhere from 40% to 95% of the time (L. Hayes et al., 2010). Mendelson et al. (2010) found that the children who took part in their mindfulness-based intervention reported less ruminating and persistent or worrying thoughts, thus positively influencing their long-term mental health.

A number of studies have been conducted that show support for the use of mindfulness in addressing anxiety and depression (Lee, Semple, Rosa, & Miller, 2008; Semple et al., 2005; Semple et al., 2010). Semple et al. (2010) found significant reductions in anxiety in participants who presented with clinical levels of anxiety at pretest. Lee et al. (2008) reported that MBCT-C was a feasible and acceptable intervention that showed potential in the treatment of internalizing and externalizing symptoms. Finally, Semple et al. (2005) found some evidence to suggest that mindfulness-based practices are acceptable and potentially helpful to anxious children.

## MINDFULNESS FOR EXTERNALIZING SYMPTOMS

Twemlow, Sacco, and Fonagy (2008) studied the use of mind-body techniques as a way of reducing destructive aggression. Their results suggest that physical movement is a critical component of reaching youth who are historically resistant

to talk therapy (Twemlow et al., 2008). The purpose of the physical movement as described by Twemlow et al. “is to provide a safe container and a healing non-coercive social context, which allows violent individuals a chance to re-tool their experiences under the guidance of a healthy ethical role model” (p. 29). Twemlow et al. suggest that individuals may begin training in martial or meditative arts to heal psychological wounds as well as to increase self-discipline and spiritual practice, and as an outlet for aggression.

Redfering and Bowman (1981) used Benson’s (1975) meditative-relaxation technique in their intervention with children demonstrating externalizing behaviours. Their results suggest that the relaxation response can be easily learned and practiced by behaviourally disturbed children as well as contributing to study participants’ internal control. Participants saw a decrease in off-task behaviour and an increase in attending behaviours after taking part in the intervention (Redfering & Bowman, 1981). Redfering and Bowman (p. 127) concluded their paper by stating, “A logical extension of this kind of research is to explore the levels of generalization to various classroom settings,” and yet here we are, more than 30 years later, as this is just beginning to be studied.

Zylowska et al. (2008) studied the effects of mindfulness meditation training on the symptoms of ADHD in adolescents. Participants self-reported decreased ADHD symptoms and high satisfaction with the training (Zylowska et al., 2008). Participants in Bögels, Hoogstad, van Dun, de Schutter, and Restifo’s (2008) study, which utilized MBCT-C as an intervention with youth presenting with different externalizing disorders, reported similar results. One drawback of the intervention noted by adolescents who wished to participate was that it interfered with out-of-school activities, suggesting that implementing it within the school curriculum could increase its acceptability and feasibility (Zylowska et al., 2008).

Singh et al. (2007) utilized the *Meditation on the Soles of the Feet* program with a group of seventh-grade boys exhibiting aggressive behaviours. Aside from observing reductions in their aggressive behaviours, participants reported being more relaxed, increased impulse control, better focus, and improvements in sleeping (Singh et al., 2007). The effects of this intervention were maintained for more than one year (Singh et al., 2007).

#### EFFECTS OF MINDFULNESS ON DEVELOPMENT OF THE WHOLE CHILD

Mental health professionals, educators, and others are increasingly interested in supporting the development of the whole child. Schools are beginning to spend time developing the emotional intelligence of the students, not just focusing on academics. Mindfulness meditation and other mindfulness-based practices traditionally value the promotion of empathy, creativity, prosocial relationships, and compassion for self and other, the development of which will help children throughout their lives.

### *Mindfulness for Biopsychosocial Spiritual Health*

Mendelson et al. (2010, p. 992) state, “Enhancing regulatory capacities and responses to stress among at-risk youth has the potential to facilitate development of core competencies that will promote a range of positive emotional, behavioural, and academic outcomes,” thus positively impacting development. Mindfulness-based practices such as interventions, philosophies, and support for growth and healing are part of the so-called third wave of therapy approaches (Abrams, 2007; S. Hayes & Greco, 2008).

Bootzin and Stevens (2005) investigated a multimodal intervention for treating sleep disturbances in adolescents who had previously undergone treatment of substance abuse. One of the components of treatment was MBSR. The results of the study suggest that participants who completed at least four sessions showed improved sleep, which contributes to enhanced positive health, social, and emotional outcomes (Bootzin & Stevens, 2005).

Flook et al. (2010) found that a mindfulness-based curriculum improved executive functioning in third- and fourth-grade students. Flook et al. contend that introducing mindfulness-based practices in elementary school may be a viable and cost-effective way to improve students’ socio-emotional, cognitive, and academic development.

Research on the utility of mindfulness meditation among youth with learning disabilities found that participants reported decreases in anxiety, increases in social skills, and improved academic performance (Beauchemin et al., 2008). The rationale for choosing mindfulness meditation as the treatment modality in this study was “because it is designed to reduce stress, promotes self-understanding and acceptance, discourages negative self-evaluations (i.e., cognitive interference), and cultivates a stable and nonreactive present-moment awareness” (Beauchemin et al., 2008, p. 38). Although the results of the study were positive, any conclusions on the relationship between mindfulness meditation, anxiety, academic performance, and social skills remain tentative due to the methodological weaknesses of the study. This research study lacked a control group, had a sample size of 34 students, and lacked long-term follow-up (Beauchemin et al., 2008).

Kabat-Zinn (1994) suggests that mindfulness practice may lead to a greater sense of trust and closeness with peers and others as well as an increased ability to approach stressful events as challenges rather than threats. This may be related to an enhanced ability to view thoughts and emotions nonjudgementally and to not react impulsively (Kabat-Zinn, 1994). The research reviewed in this article suggests that mindfulness training contributes to aspects of character that produce balanced children and youth, reflected in greater creativity, greater prosocial behaviour, better psychological health, and healthier peer relationships.

### *Mindfulness for Increasing Self-Awareness and Self-Esteem*

Coholic, Loughheed, and Lebreton (2009) examined the benefits of holistic art-based group work with boys and girls aged 8 to 12. According to Coholic

et al., the exercises and group processes followed in their study align themselves with mindfulness meditation practice. In order to make the practices and ideas meaningful to children, the researchers shortened and simplified the exercises and integrated an active and sensory focus (Coholic et al., 2009). Although it is not possible to draw conclusions from this study, it does suggest that the children who completed the group felt more positive and were coping in a more productive way (Coholic et al., 2009). This is similar to the findings in Wall's (2005) study, which saw participants experiencing increased feelings of well-being and self-awareness, and less reactivity.

Lau and Hue (2011) showed similar results in their study utilizing a mindfulness-based intervention with adolescents in secondary school. Participants reported a significant increase in personal growth as a dimension of well-being after the mindfulness training. Lau and Hue utilized a control group in their study, which did not see the same increases as the mindfulness-based intervention group.

### *Mindfulness with Children from Different Cultures*

Napoli et al.'s (2005) paper provides some support for utilizing mindfulness-based practices with diverse populations. They suggest that mindfulness skills can help reduce stress related to racism and oppression in children and youth. Facilitators can teach mindfulness techniques in a way that is secular, thus increasing the acceptability of these practices to diverse populations (Napoli et al., 2005). Further support for the use of mindfulness-based practices with child and youth populations from diverse cultures can be found in the premise that Tai Chi and MBSR provide strategies for students to be less reactive to emotional cultural triggers and increase their awareness of self and others (Wall, 2005).

Liehr and Diaz (2010) studied mindfulness interventions on depression and anxiety with children from Caribbean and Central American countries. The results suggested that mindfulness-based activities were enjoyed by the participants and depressive symptoms decreased (Liehr & Diaz, 2010). Lau and Hue (2011) used a mindfulness-based intervention in their study with adolescents in Hong Kong secondary schools and saw a significant reduction in depression and an increase in well-being. These studies suggest similar findings. Positive support for mindfulness-based interventions is being found in different areas of the world.

### *Feasibility of School-Based Mindfulness*

Napoli et al. (2005) state, "Research indicates that incorporating stress reduction programs into the school curriculum is associated with improvement of academic performance, self-esteem, mood, concentration and behavior problems" (p. 105). According to Ritchhart and Perkins (2000), "for generations, educational philosophers, policy makers, and practitioners have decried the mindlessness of schools and their tendency to stifle creativity, curiosity, and enthusiasm while nurturing passivity and superficial learning" (p. 28). In contrast to mindlessness, mindfulness is a facilitative state of mind that encourages increased creativity, flexibility, use of information, as well as retention of information (Ritchhart &

Perkins, 2000). Not only does mindfulness training in the schools have the potential to improve the psychological and physiological health of students, it also has the potential to change how and what students learn in a meaningful way.

Burke (2010), in her review of the current research into the use of mindfulness-based approaches with children and youth, found that mindfulness-based interventions were acceptable and feasible to the populations studied, and no studies reported any undesirable effects. As early as 1973, mindfulness meditation was being utilized in schools to increase field independence and reduce test anxiety (Linden, 1973). Here we are 39 years later, still discovering the benefits of mindfulness in schools.

Semple et al. (2010) reported that a group of inner-city minority children that were typically hard to reach enthusiastically embraced MBCT-C. Participants in their study stated MBCT-C was helpful in both home and school environments (Semple et al., 2010). Further research reviewed in this article supports the feasibility of implementing mindfulness-based practices in school settings. The implementation of a mindfulness-based program need not be time consuming. Research suggests that 10 to 15 minutes of mindfulness practice daily or a few times per week may result in students that are more successful and create a more peaceful learning environment (Benson, 1975; Fisher, 2006). There is compelling research to suggest that people who regularly practice mindfulness meditation “experience less anxiety and depression, have more positive outlooks, and have a greater sense of calmness, awareness, and sense of control,” which reinforces what it has to offer to students and schools (Selhub, 2007, p. 5).

#### MINDFUL LEARNING

Fisher (2006), in describing his own experience using a brief meditation with 10-year-olds in an inner-city school states, “This small investment of time I found had a marked effect in calming the class and focusing them ready for learning” (p. 151). Benefits of a student-centred classroom that utilizes mindfulness as a part of the daily curriculum have been found, ranging from students who are creative and critical thinkers and who are able to apply learned material to new and novel situations, to classrooms that are calmer and more peaceful (Napoli et al., 2005). Langer and Moldoveanu (2000) assert that practitioners of mindfulness see improvements in their attention, which results in a greater enjoyment of the task at hand and improved memory, factors that are helpful for students.

In support of mindful learning, Langer (1993) argued “that not only should learning be fun on its own terms, but that learning or gain that is not fun is mindless” (p. 43). Mindfulness encourages the taking of multiple perspectives and embraces the realization that there is not one optimal perspective—rather, all may be valid (Langer, 1993). Shapiro et al. (2008) argue that despite the importance of sustained, focused attention in learning, educators rarely teach how to achieve this in the majority of educational settings.

It is suggested that the better we think we know something the more mindlessly we view it (Langer, 2000). According to Langer (2000), by teaching children in

absolutes, we prematurely close the door on alternative possibilities. This does our children a disservice. The facts that children and adolescents are taught are not context-free. If we teach children mindfully and they learn mindfully, they are able to hold multiple perspectives and embrace ambiguity.

#### SUPPORT FOR MINDFULNESS TRAINING IN SCHOOLS FOR CHILDREN AND ADOLESCENTS

Twemlow et al. (2008, p. 17) state, “schools often over focus on the use of verbal techniques both to teach and [to] control students’ behavior.” In contrast, they suggest using action in schools to make ideas real. Mendelson et al. (2010) found that mindfulness-based approaches were acceptable to students as well as teachers, and their results saw decreases in stress responses such as rumination, intrusive thoughts, and emotional arousal.

Barnes et al. (2003) successfully implemented a transcendental meditation program with 25 high school students. This suggests that it is feasible and acceptable to implement a school-based stress reduction program to improve the physical and psychological health of students and thus reduce negative behaviour.

Schools that teach mindfulness-based strategies take the view that students and teachers directly influence one another and are partners in learning (Napoli et al., 2005). Benefits of teaching mindfulness in school include an increase in creativity, greater cognitive flexibility, and better use of information to improve memory for retention of teachings (Napoli et al., 2005). With increasing diagnoses of depression, anxiety, ADHD, and other externalizing disorders, there is also increasing demand on the teachers’ knowledge and skills. Including mindfulness training in the school curriculum may save teachers time in the long run because students may be able to deal with situations more effectively, resulting in fewer in-class interruptions, thus allowing teachers to teach and students to learn.

Saltzman and Goldin (2008) advise proponents of mindfulness to clearly articulate to school administrators and other stakeholders “the secular and universal nature of mindfulness” (p. 158). By being proactive in providing a clear explanation of what mindfulness is and is not, teachers can alleviate any misperceptions or confusion before the program can be negatively affecting. As suggested by Saltzman and Goldin (2008), for children to enjoy the greatest benefits of mindfulness and to ensure acceptance of the program, it is crucial to educate and inform school administrators, teachers, and parents about mindfulness practices.

#### UNIVERSAL TREATMENT AND PREVENTION PROGRAMS

Mindfulness is amenable to universal prevention programs because it focuses on universal vulnerabilities in children and youth rather than specific problems (Bögels et al., 2008). It is a strength-based intervention rather than one focused on pathology. A universal mindfulness program would involve the whole school. This results in less stigmatization and labelling than would pulling students out for a targeted program. Universal programs are a cost-effective method to deliver school-based programs that are preventative rather than remedial (Farrell & Barrett, 2007).

Farrell and Barrett (2007) reported on the use of a universal prevention program in preventing anxiety and depression in school-age children. Farrell and Barrett argue that universal programs present a positive approach to social-emotional learning and focus on enhancing the strengths of all children. Napoli et al. (2005) suggest implementing mindfulness training into the physical education curriculum to teach children, from the beginning of their school career, ways to manage stress and focus attention. Because many children and parents never seek clinical interventions for emotional disorders, providing universal prevention programs in schools is a way to reach this population. Given the high prevalence rates of anxiety, depression, and other disorders, prevention offers an attractive cost-effective alternative to intervention.

A further benefit of a universal prevention program is that it is perhaps less threatening than a therapy session where there may be a need to explore traumatic or painful experiences. Instead, the teacher presents it as a group intervention that may benefit everyone by helping them learn to manage life stressors and feel better about themselves (Coholic et al., 2009). Mendelson et al. (2010) speak to the positive benefits of a program that focuses on building capacity in children and youth rather than focusing on symptomology or disorders. In teaching mindfulness techniques to students, it is possible to implement the mindful practice of reflection at every level of the school system (i.e., the student, the classroom, and the school).

While mindfulness-based practices show promise and a universal school-based approach appears to be an ideal approach to implement, there is limited support in the literature for universal treatment programs. L. Hayes et al. (2010) reviewed treatment programs for adolescent depression and found that, with universal prevention/intervention programs implemented in the school, gains were not maintained at follow-up. However, many of the studies reviewed had methodological weaknesses, one particular flaw being the use of self-report questionnaires designed to measure clinical change being utilized with nonclinical participants (L. Hayes et al., 2010). When viewed in the light that 10 students need to receive targeted intervention to prevent 1 case of depression, universal prevention programs become more justifiable (L. Hayes et al., 2010).

#### FUTURE DIRECTIONS IN RESEARCH

As the research reviewed in this article suggests, there is increasing support for integrating mindfulness training into education curriculums for children and youth. The body of research devoted to mindfulness with children and youth is expanding; however, there is still little devoted to education specifically. More research into the effects of mindfulness training for children and youth is needed to tease out how and why mindfulness benefits the whole person and why this is a valuable addition to existing curriculums.

This final section includes three recommendations for future research, drawing on what has been identified as shortcomings in the existing studies (Brown & Ryan, 2003; Burke, 2010; Shapiro et al., 2006; Toneatto & Nguyen, 2007).

These recommendations relate to increased methodological rigour, a wider range of outcomes studied, and the study of best practices for integrating mindfulness training into educational settings.

### *Methodological Rigour*

It is necessary for future studies to identify what type of mindfulness activity is being utilized. For example, some studies utilize mindfulness-based movement such as yoga or Tai Chi, while others might focus on the breath in a mindfulness-based meditation. Research that examines each mindfulness-based activity separately will increase understanding of the contributions of each. This will add to the existing research and assist in developing a better idea of what best practice with children and youth will look like.

The assessment tools used to assess mindfulness in children and youth have not always been adequately tested for use with this population (Burke, 2010; Lee et al., 2008). It is important to develop assessment tools specifically for children and youth and test their reliability and validity. The only measure that has been normed and adapted for use with children is the Child and Adolescent Mindfulness Measure (Thompson & Gauntlett-Gilbert, 2008). Having a mix of qualitative and quantitative studies is another way to gain a richer understanding of how and why mindfulness training works.

There are few true experimental studies investigating the use of mindfulness training with children. Many of the studies reviewed here are quasi-experimental at best. For mindfulness training to become an evidence-based intervention, it is crucial that future studies randomly assign participants to an active control group. In addition to random assignment, longer-term follow-up assessments are important to determine whether the benefits of mindfulness training are sustained over time. Finally, use of larger samples will potentially allow for the generalization of results to the greater child and youth population.

### *Outcomes*

The studies reviewed here provide a broad range of outcomes; however, there is the potential for even greater exploration of the phenomenon being studied. It is possible for researchers to study related phenomena instead of limiting the study to one aspect of psychological functioning. Instead of focusing only on the relationship between mindfulness and anxiety, researchers could also look at the relationship between mindfulness and depression, as well as between mindfulness and externalizing behaviours. Studies could also assess outcomes in behaviour and physiological functioning.

Researchers are just beginning to identify the benefits of mindfulness training for children, and the likelihood of researchers finding other benefits is quite high. Only by expanding the outcomes being measured and hypothesizing on a wider scale will the full value of mindfulness training be understood. An expansion of outcomes may require the development of new tools to measure the phenomena under investigation accurately.

### *Integration*

Ideally, future research should endeavour to investigate factors and processes applicable to the education settings of children and youth. An important question to explore is what conditions are most conducive to optimizing the effects of mindfulness training in a school setting. For example, is mindfulness practice at the start of the day more beneficial than mindfulness practice after lunch?

Another area of interest to curriculum developers might be how the amount of time spent in mindfulness practice affects outcomes. Research results thus far have shown mixed results, with some finding that increased time in mindfulness practice is beneficial and others showing no significant difference (Biegel et al., 2009; Toneatto & Nguyen, 2007; Valentine & Sweet, 1999). Research into whether students who engage in mindfulness practices at home as well as at school experience any greater benefit are of interest.

The teaching and study of mindfulness training in schools comes with questions about how best to implement it in a proactive and meaningful way. For example, where does it fit in the curriculum and who should teach it? Research suggests that teachers of mindfulness-based activities should have a regular, personal, and mindfulness-based practice in order to speak with any authority and answer the questions of students (Kabat-Zinn, 2003; Semple & Lee, 2008). It would be disingenuous to teach mindfulness if one does not practice it.

One final note—there have been individuals for whom mindfulness-based practices are contraindicated. There may be individuals with certain mental health concerns, personality disorders, psychosis, major depressive disorders, or traumatic stress for whom mindfulness-based practices like meditation are not appropriate (Shapiro & Carlson, 2009). However, as research into mindfulness-based practices grows, more evidence points to the benefits of practice when these factors are not present.

### CONCLUSION

The potential benefits of integrating mindfulness-based training into school settings are significant in regards to effects on cognitive, emotional, interpersonal, and spiritual domains. Research reviewed here suggests that mindfulness-based practices can have a positive impact on academic performance, psychological well-being, self-esteem, and social skills in children and adolescents. There is evidence that mindfulness-based training in schools is feasible and acceptable to those who have participated in it.

While the research in this area continues to grow, there is a need for well-designed, methodologically sound research to guide educators and administrators in integrating mindfulness-based practices into the school setting. Support for mindfulness training is increasing; however, larger randomized control trials are necessary to provide greater empirical support. Farrell and Barrett (2007) state, “prevention programmes in schools offer much promise in targeting the prevalence of emotional disturbance in young people—ongoing research and practice will

inform us of the actual value and impact of this approach over time” (p. 63). The work of researchers such as K. Schonert-Reichl at the University of British Columbia as well as Patricia Jennings and Trish Broderick at Penn State University are providing further support for the role of mindfulness in the education of children.

There is a strong argument for implementing mindfulness practices into the school curriculum. Not all the evidence may be in; however, there is convincing circumstantial evidence that mindfulness practices improve the well-being of many who utilize them. Children deserve to experience life positively, and society has a duty to provide them with the skills and strategies to manage life’s more challenging moments. Mindfulness may be one way to provide this.

The present moment is filled with joy and happiness. If you are attentive, you will see it. (Hanh, 1991)

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