The Effects of Mindfulness Practice for Children (MP-C) with Emotional and Behavioral Challenges: A preliminary investigation

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Abstract

This investigation assesses the effects of learning and practicing mindfulness for children with emotional and behavioral challenges in a community-based afterschool setting. Five children ages 8-12, enrolled at the Attleboro, MA Total Achievement Program (TAP) participated in a mindfulness practice for children (MP-C) program adapted from four sources: Mindfulness-Based Cognitive Therapy for Anxious Children (MBCT-C) (Semple & Lee, 2011), Building Emotional Intelligence guide (Linda Lantieri, 2008), Susan Kaiser Greenland’s The Mindful Child guide, and the Wheaton College Education Department’s Mindfulness Handbook for Children. The eight class sessions included activities to teach self-awareness and self-control through becoming aware of breathing, eating, movement, and thinking. The study investigated feasibility and acceptability of MP-C for the children and the agency, changes in children’s’ attention, mindfulness, and emotional competency.

Attendance and retention rates and program evaluations confirmed the feasibility and acceptability of the MP-C program in this setting. Momentary time sample observations of off-task behavior documented improvements in attention over the eight sessions. Pretest and posttest scores on the Child Acceptance and Mindfulness Measure Children (CAMM) and the Trait Emotional Intelligence Questionnaire-Child Short Form (TEIQue-CSF) showed no significant average change in participants’ mindfulness skills and emotional competency. Case studies illustrate variable aspects of participants’ involvement, change scores and each child’s self-report on the program and its outcomes.

Overall, this preliminary investigation shows support for the feasibility, acceptability and effectiveness of MP-C in an after school therapeutic program. Future studies can address further program development, evaluation, and research design expansion.
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Dedication

This work is dedicated to my family and friends who have always provided me with the love, support, and encouragement to pursue my dreams. My parents truly believed the expression, “it takes a village to raise a child”, and I give thanks to my village for their unwavering presence in my life and instilling me with strong values, confidence, and motivation. Thank you to my grandparents, aunts and uncles, cousins and second cousins, and those family friends that are like aunts to me, who have each inspired me and this project in different ways. This study is dedicated to my parents who live by the values that they teach me and have always encouraged me to make my dreams come true and ride the waves of life with ease and joy. Mary, thanks to you, reciting, “I believe in myself” every night before going to bed gave me the strength I needed to pursue and complete this research project. Lore, the mindfulness practices and lifestyle you showed me have become the backbone to this project; I am so grateful for all you have taught me. I would not be where I am today without the support of my village, so I dedicate this work to you!
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Mindfulness, essential to Buddhist meditation and in other religions for centuries, is described as “paying attention in a particular way, on purpose, in the present moment and nonjudgmentally” (Kabat-Zinn, 1994, p. 4). It is ironic that the intention and reflection of these practices, which seem to be so innately central to what it means to be human, have to be brought back into psychological theory and practice. Fortunately, these last forty years have given us many forms of direct application of mindfulness in Western clinical psychology, medicine, and education in both the U.S. and worldwide (Germer, 2005).

Mindfulness-based practices have been applied to both clinical and healthy populations seeking improvements in mental and physical health. A variety of mindfulness practices have been used in the treatment of a wide range of conditions such as depression, anxiety, stress, chronic illness, eating disorders, trauma, sleep disorders, and addiction. While differing in structure and format, these interventions require the client’s attention on the mind’s drifting into thoughts, memories or fantasies, and the body’s reaction to these mind states. The overall rationale in mindfulness practice is an acceptance of pain, worries, thoughts, and emotions without trying to escape, avoid, or change them and by “fully owning and accepting where one is, change does occur” (Fodor & Hooker, 2008, p. 81; Beisser, 1970, as cited in Fodor & Hooker, 2008, p. 81). One assumption of this investigation is that teaching mindfulness to children may hold promise of not only correcting problems but also offering a set of coping skills for life’s inevitable challenges. A number of clinicians (Semple et al., 2008; Kerrigan et al., 2011; Singh, et al., 2009) and educators (Napoli et al., 2005; Mendelson et al., 2010; Schonert-
Reichl & Lawlor 2010) are applying mindfulness to children and adolescents in clinical and educational settings.

There is growing empirical support for the acceptability and feasibility of mindfulness in education (Meiklejohn et al., 2012) for both teachers and students. For teachers, mindfulness addresses resilience, stress, and classroom management. In children mindfulness education programs target a number of cognitive, social and emotional skills. This growing practice with children sets the stage for this research study, which focuses on the application of mindfulness in an afterschool program, a hybrid setting with both clinical and educational goals. This paper describes the clinical applications of mindfulness practices with adults, its translation into educational and clinical practice with children, and presents a preliminary investigation of mindfulness practices in a community-based afterschool program for children with emotional and behavioral challenges.

**Mindfulness with Adults**

In clinical practice with adults, four models and practices have emerged from the mindfulness tradition: Mindfulness-Based Stress Reduction (MBSR), Mindfulness-Based Cognitive Therapy (MBCT), Dialectical Behavioral Therapy (DBT), and Acceptance and Commitment Therapy (ACT).

**MBSR.** MBSR is the first and most popular mindfulness-based therapy in the U.S (Shapiro and Carlson, 2009). Jon Kabat-Zinn at the University of Massachusetts Medical Center developed this approach in 1979 and it consists of an 8-session group program that meets weekly for 2 ½ to 3 hours. It was developed as a stress-reduction
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strategy for patients who were not responding to the traditional medical treatment for chronic pain or anxiety disorders related to a variety of medical conditions. In addition to the in class sessions, participants are expected over the 8 weeks to practice meditation and yoga at home for 45 minutes, 6 days a week during the 8-week program. The mindfulness practices taught in MBSR include body scan, sitting meditation, walking meditation, gentle yoga, and informal daily mindfulness practice. The program encourages didactic teaching and group discussion to facilitate the learning and internalization of the practice.

**MBCT.** Cognitive therapists John Teasdale, Mark Williams, and Zindel Segal developed MBCT in the late 1990s as a treatment to prevent depression relapse. These colleagues were experts in the field of Cognitive Behavioral Therapy (CBT) and with the surge of interest in MBSR grew interested in a mindfulness therapy for patients with recurring depression. Over time with guidance from Jon Kabat-Zinn they developed a manualized MBCT as a formal therapy combining aspects of MBSR and CBT (Segal, Williams, & Teasdale, 2002). Like MBSR, MBCT is an 8-week group program that uses body scan, sitting meditation, walking meditation, and informal daily mindfulness (Shapiro and Carlson, 2009). It is designed to target the two factors that tend to lead to depression relapse: rumination and experiential avoidance (Crane, 2009). Four goals that guide the MBCT practice: “Step out of ruminative thinking patterns, recognize and be more aware of potential relapse-related mind-body processes, access new ways to relate to both depression-related and other aspects of experience, and turn towards, befriend, and engage with both difficult and other aspects of experience” (Crane, 2009, p. 16). These goals help clients look inwardly and recognize the thought patterns that cause
vulnerability. With this recognition, the mind states can no longer hold such power over the individual.

**DBT.** Developed by Marsha Linehan (1993), DBT applied mindfulness to the treatment of borderline personality disorder and also proposed a new theoretical framework. DBT can be delivered in both group and individual settings. Shapiro and Carlson (2009) describe both the components and theory of DBT. The “dialectic” in DBT is its integration of opposing ideas, focusing treatment on both acceptance and change. Its use to treat borderline personality disorder rests on teaching four skills: mindfulness, interpersonal effectiveness, emotional regulation, and distress tolerance. The mindfulness module teaches the participants that there are three states of mind including: the reasonable mind, emotional mind, and wise mind, and six mindfulness skills including three “what” skills and three “how” skills that can help participants attend to these mind states. The mindfulness skills taught in DBT are invaluable to the three other modules as they are inherently interconnected.

**ACT.** Developed by Steven Hayes, Kelly Wilson, and Kirk Strosahl, ACT aims to address a range of psychological conditions and “increase psychological flexibility by learning how to contact the present moment fully and consciously, based on demands of specific situational circumstances” (Shapiro & Carlson, 2009, p. 56). ACT is delivered in an individual format rather than in a group setting. The acronym, FEAR, describes the four concepts guiding assessment and treatment in ACT. FEAR stands for: Fusion with your thoughts, evaluation of experience, avoidance of your experience, and reason-giving for your behavior. ACT suggests that the healthy alternative to FEAR is ACT: Accept your reactions and be present, choose a valued direction, take action. To help clients learn
to accept their experience and develop psychological flexibility ACT employs six core principles including: cognitive defusion, acceptance, contact with the present moment, observing the self, values, and committed action (Hayes & Strosahl, 2004).

**Treatment Goals.** Each of the mindfulness-based interventions described here have the common therapeutic goals of cognitive change, self-management, relaxation response, and acceptance (Fodor & Hooker, 2008).

**Cognitive change.** The practice of mindfulness may “lead to changes in thought pattern and the attitude of one’s thoughts: cognitive change” (Foder & Hooker, 2008, p. 80). Through the practice of nonjudgmental thinking arises the understanding that thoughts are not necessarily the reality or the truth and when this is realized, thinking patterns change (Kabat-Zinn, 1994). This awareness therefore allows for more cognitive, emotional and behavioral flexibility (Shapiro & Carlson, 2009).

**Self-Management.** The nature of mindfulness practice in and of itself is based upon self-management through sitting and attending to one’s thoughts. “The first stage in change is self-awareness of a problem or pattern...By sitting and using focused awareness on what’s happening at the moment the [problem behavior] emerges; the triggers and stressor may also come into awareness and facilitate more active problem-solving” (Fodor & Hooker, 2008, p. 81). Shapiro and Carlson (2009) explain, “intentionally cultivating nonjudgmental attention leads to connection, which leads to self-regulation and ultimately to greater order and health (p. 99).

**Relaxation Response.** With tension often arises stress, and stress often is the underlying cause of many psychological symptoms and challenging experiences. By
nature in the practice of breathing, noticing thoughts, and noticing body sensations in mindfulness, there is slowing down of thoughts. This reduction in thoughts therefore decreases muscle tension, slows breath, and slows the heart rate. This slowing down effect leads to overall relaxation, which can create more clarity in action and reaction to events.

**Acceptance.** A central tenet of mindfulness practice is accepting where one is emotionally, physically, psychologically in the present moment without trying to escape avoid or change it. Beisser (1970) explains that when one can fully own and accept where one is in the present moment, change does occur” (as cited in Fodor & Hooker, 2008). Additionally by being able to accept unpleasantness does not hold so much power and control over the person. Therefore with acceptance, one will not feel so affected by life’s conditions.

**Empirical Evidence**

**Neurobiological.** Measurement advances in recent years provide an opportunity to measure the effects of mindfulness on brain structure and function. Mindfulness, a practice of becoming aware of one’s thoughts, like all human behavior, will have neurological effects in the brain. While the ultimate measure of the effects of mindfulness is a change in the experience of one’s life, there is scientific value in evidence of concrete changes in brain structure and function (Baron, personal communication, April 30, 2012). While there remains no consensus on the optimal neurobiological measures of mindfulness, two recent reviews (Chiesa & Serretti, 2010; Treadway & Lazar, 2009) summarize research with EEG, fMRI, and biological markers
(stress hormones and antibodies) as indicators of physiological changes induced by mindfulness practice.

Chiesa and Serretti (2010) review 748 studies, and after excluding several studies due to validity threats in methodology and design, use the remaining 52 studies to summarize the neurobiological evidence of the effectiveness of mindfulness practice. EEG studies demonstrated that meditators experience a decrease in alpha frequency, frontal alpha activity and theta bursts. This data suggests that meditators experience a higher degree of relaxation. Similarly, MBSR and MBCT practices demonstrate a shift toward left-sided anterior alpha activation, which is a pattern that is associated with positive emotions. This activation of the left prefrontal cortex, associated with positive mood, also shows a positive correlation with immune function (Davidson et al., 2003, as cited in Meiklejohn et al., 2012).

Neuroimaging/MRI studies demonstrate that mindfulness meditation can induce specific ‘state’ brain modifications that facilitate meditators’ regulation of their attentional processes. Similarly other studies have shown an increase in gray matter concentration facilitates attention (Meiklejohn et al., 2012). Chiesa and Serretti (2010) propose that mindfulness meditation could protect the brain from cognitive decline “through inhibition of the reduction in both grey matter volume and attentional performance associated with age” (Pagnoni & Cekic, 2007, as cited in Chiesa & Serretti, 2010, p. 1242).

Chiesa and Serretti (2010) further report that long-term meditators seem to be able to self-induce a deep relaxation. Further, they hypothesize that this ability of mindful attention related to voluntary regulation of prefrontal cortex activity could help
reorganize the brain activity resulting in a more balanced mind-body interaction, more positive emotions and reducing excessive emotional reactivity.

Research continues with different measures and more controlled methodologies. One example is Hözel et al. (2011)’s study using anatomical Magnetic Resonance (MR) images of 16 healthy, meditation-naïve participants before and after undergoing the 8-week MBSR program designed by Jon Kabat-Zinn to investigate changes in gray matter concentration. The results were compared to a wait list control group of 17 individuals and the analyses showed that there were increases in gray matter concentration within the left hippocampus, which is involved in learning and memory processes, emotion regulation, self-referential processing, and perspective taking (Hözel et al., 2011).

In conclusion, the brain regions that are affected by mindfulness practice implicate cognitive processes including regulation of emotions and behavior, planning, working memory, attention problem solving, verbal reasoning inhibition, mental flexibility, multi-tasking, and the monitoring of actions (Chan et al., 2008). Such research findings with improving methodological clarity and rigor support the value of applications of mindfulness in real-world settings due to its neurobiological evidence.

Clinical. Recent reviews provide evidence for the effectiveness with a range of mental health conditions such as depression, anxiety, posttraumatic stress disorder, social phobia, eating disorders, obesity, personality disorders, substance abuse/smoking cessation, and insomnia (Shapiro & Carlson, 2009). To exemplify this large body of research we will turn to evidence for depression. Empirical evidence points to high success rates with the use of MBCT on individuals prone to depression relapse. Ma and
Teasdale (2004) report that MBCT reduced depression relapse rates from 78% to 26% in 55 patients with 3 or more previous depression episodes. In one study 66% of the participants relapsed after a treatment as usual (TAU) including medication and cognitive behavioral therapy (CBT), while only 37% of the patients receiving MBCT relapsed. Interestingly the patients receiving MBCT subsequently also used less medication than those receiving TAU. These results further indicate the success of MBCT (Baer, 2006).

In another study, participants diagnosed with recurrent depression were split into two groups: MBCT group (plus support to taper/discontinue use of antidepressants), and antidepressant medication group to determine changes in antidepressant relapse. The recurrent/relapse rates in 15-month follow-ups in MBCT were 47% compared with 60% in the medication group. Additionally, in the MBCT group 75% of the participants completely discontinued their medication usage (Kuyken et al., 2008). Because of the strong empirical support for adults with depression, many researchers are investigating the use and effectiveness of MBCT with other clinical groups needing treatment.

**Mindfulness with children**

As mindfulness programs for adults continue to show success, clinicians, educators, and researchers are beginning to design and implement similar interventions for children. This section of the paper will focus on the need for mindfulness interventions for children, with whom and on what targets it has been applied, adaptations made from the adult programs, and available empirical support.

**Rationale.** Today, in our society children are experiencing unprecedented stress resulting in a variety of behavioral and emotional challenges, some diagnosed and
some simply seen as a way of life (Napoli, Krech & Holley, 2005). Research summarized by The National Scientific Council on the Developing Child informs us that the brain develops over time and during critical periods and excessive exposure to stress damages the structure of the developing brain leading to lifelong problems in learning, behavior and overall health (2007). Furthermore, the increase in diagnoses of attention deficit and hyperactive disorder (ADHD), stress disorders, depression, and anxiety among children, demonstrates the increased stressors in young children’s lives. The prevalence of pediatric mental illness calls for a treatment that facilitates healthy brain growth, emotional regulation and competency, attention skills, and awareness. “If students can learn to be “fully-present,” [through mindfulness practice] they can increase the quality of their learning performance by being more focused, and become better able to deal with stressful situations” (Langer, 1993 as cited in Napoli, Krech & Holley, 2008, p. 101).

The most common mental health problems in childhood are anxiety disorders, yet historically very little research has focused on the long term efficacy of psychosocial treatments of anxiety and even less so on the clinical effectiveness of this program in real-world settings (Semple, Reid, & Miller, 2005). Semple and Lee (2008) explain that anxiety is often a precursor to major depression later in life and that left untreated, “children with anxiety disorders are also at higher risk for academic difficulties, social skills problems, and substance abuse”. Because of mindfulness’ success both clinically and biologically with adults struggling with depression, Semple and Lee (2008) along with many other researchers and educators saw its potential for helping children appropriately cope with daily life stressors that appear to contribute to the etiology and
developmental pathways of such problems. Clearly, this informs the need for new and perhaps even preventative treatment and educational practices for children with and without presenting behavior and emotional challenges.

**Applications.** Many mindfulness programs for children in clinical and educational settings have emerged in recent years to support children’s emotional, social, and academic development. Mindfulness in children has been applied to children ages 4 through adolescence. It is believed that children will benefit from mindfulness practice in ways similar to adults (Fodor & Hooker, 2008). Through mindfulness, “children can learn to become more aware of their thoughts, feelings, and body sensations” and accept these experiences non-judgmentally (Lee, 2006, p. 15). While very little research on the effects of mindfulness practice for children is available, it is being applied in schools and clinical programs for children with the expectation that it could help children with attention, self-regulation, awareness, and increase optimism and positive affect (Fodor & Hooker, 2008; Meiklejohn et al., 2012). This energetic adoption of mindfulness practices introduce but do not yet answer some important topics and questions related to child development. For example Lee and Semple (2011) theorize that there are specific cognitive skills a child must have to be able to learn mindfulness including: children should be able to comprehend multiple perspectives, attend to the experience of others, distinguish past, present, future, and be able to make causal inferences. Semple and Lee (2011) suggest that mindfulness might be more effective in older children because they are beyond the egocentrism of the preoperational child and have the ability for theory of mind. Alternatively, others (Griffin, personal communication 2012; Lantieri, 2008) endorse that mindfulness is a basic state of the
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human brain/mind and even essential to typical childhood. These authors suggest mindfulness is innate to children but because these skills are not reinforced by their caretakers and society, “as children grow up, the more repressed, forgotten, and locked within themselves the awareness of their life becomes” (Lantieri, 2008, p. 9). There is agreement, however, that these practices can give children the resilience and coping they will need for living life well.

This section will focus on group mindfulness programs offered to children (and their parents when feasible) in school classrooms, clinical programs, hospitals, and group mindfulness workshops in private settings. While the general theory remains the same, the material and exercises of these programs require modification to fit with the child’s capabilities and experience. In mindfulness programs for children, activities generally contain components such as focused sensory activities, short breath meditations, mindful body scan, mindful body movements, visualization practices, yoga, self and thought awareness activities, discussions and drawing or writing exercises.

**Adaptation of mindfulness techniques for children.** Adaptations must be made to the mindfulness intervention protocol in order to be successful in working with children. While these adaptations have to be made, it is important to note that many clinicians and educators believe that children naturally are more mindful than adults. However, clinicians and teachers must take into account the cognitive function and developmental stage of the age population they are working with in order to make appropriate adjustments needed. Many clinicians, researchers, and educators are making age appropriate changes to the curriculums of mindfulness programs for children therefore there are no published listing of all of the adaptations being made. Two
available models are mindfulness stress reduction for children (MBSR for children) and mindfulness-based cognitive therapy for children (MBCT-C).- Adapted from the traditional MBCT for adults; MBCT-C provides a published manual for use with children and will be the basis for this investigation.

In order to teach mindfulness to children, therapists and teachers have to take into account the cognitive differences between adults and children and the developmental stages of the children regarding attention span, dependence on caretakers, abstract reasoning skills, theory of mind, etc when modifying mindfulness-based practices for children. MBCT-C, an adapted form of MBCT developed by Randye Semple and Jennifer Lee, includes developmentally-appropriate exercises and teaching strategies “to help children become more aware of their cognitions (thoughts), emotions (feelings), and body sensations as discrete entities. Through experiential exercises, children begin to develop a language that describes, without judging, their internal cognitive and affective states…” (Semple, Lee & Miller, 2006, p. 152). The authors adapted MBCT-C with the understanding that children have a limited attention capacity, require multisensory learning, more family involvement, more individualized attention, and more guidance and structure (Semple & Lee, 2008). These modifications are required for all mindfulness programs designed for children. Because children have shorter attention capacities than adults, the time duration of each mindfulness class needs to be reduced to maintain children’s attention span. To ensure more individualized attention from the facilitators, the ratio of teacher/therapist to child needs to be reduced by limiting the participants and increasing the number of group mindfulness instructors (Semple, Lee, & Miller 2006; Semple & Lee, 2008). In addition to logistical adaptations to the program, it is important
to alter the exercises and learning tools used within the sessions to cater to children’s developmental level.

Semple, Lee, and Miller (2006) identify different exercises to use with the children to facilitate their mindfulness understanding. For example, each session has a focus in MBCT-C and also reviews and expands upon the previous week to solidify a deep understanding of the mindfulness practice in children. Different from MBCT and other adult mindfulness practices, the therapists of child mindfulness groups must work to incorporate the use of multisensory learning activities in order to engage the children and facilitate learning the material with ease. Children have a more limited verbal fluency, abstract reasoning, and conceptualization than adults and these skills were crucial to adult programs. But through the use of games, activities and stories in the child mindfulness treatment protocols, children are better able to internalize the mindfulness therapy. It is important to include a discussion component after storytelling to highlight the various ways people can perceive situations. Children experience the ways in which these situational interpretations can lead to different actions or produce anxious mind states. In addition, child mindfulness programs require the use of sensory-rich exercises that address the children’s need for physical mobility (Semple, Lee & Miller, 2006). To aid children’s attention on the body’s sensations, mindfulness exercises for children focus on the senses through mindful eating, listening, smelling, seeing, and touching. From these highly structured and intensive exercises children learn the value of becoming present in these sensory rich daily activities (Semple & Lee, 2008). They also become more aware of their thinking, or rather, the pattern of human thinking. They learn what kinds of thoughts lead to anxiety, for example, and then develop the nonjudgmental mind
to observe these thoughts. To develop a nonjudgmental mind requires one to learn to accept the present moment without desiring different conditions and without rejecting how one is feeling.

Semple & Lee (2008) propose that other components beyond the in-session activities are important to the mindfulness for children interventions. Caregivers are essential in motivating their child’s commitment outside of the program hours. Children often bring home materials such as written summaries, home practice exercises, and it is important that caregivers motivate the completion of these practices. J. Lee explained that in practice, the parent involvement in MBCT-C may often be lacking or even impossible and could be improved (personal communication, October 19, 2010). She went on to explain that parents will only follow through with the at home exercises if they are motivated by their own initial enthusiasm for and success with the mindfulness exercises. Because of this challenge, J. Lee suggested that MBCT-C, and presumably other mindfulness programs for children, could add an additional parent group simultaneous to their children’s, so that they develop a deeper and experiential appreciation for mindfulness (personal communication, October 19, 2010).

The teacher/therapists’ personal experience with mindfulness practices is important for effective teaching and clinical practice (Semple et al., 2005, 2006, 2008, 2011; Lee et al., 2008; Napoli et al., 2005). Similar to the necessity of parental involvement, it is crucial that the therapists leading the group therapy have a deep and sound experiential understanding of the mindfulness model “and be able to nonjudgmentally observe their own cognitions, emotions, physiological responses, and behaviors” (Semple, Lee, & Miller, 2006, p. 161). Many other therapies have goals to
change the thoughts and behaviors of their clients rather than facilitate nonjudgmental acceptance. A clinician or teacher who has not experienced the mindfulness practice in his or her personal life may give subliminal messages influencing the client to change rather than accept their thoughts and behaviors (Semple, Lee & Miller, 2006). Therefore Semple, Lee, and Miller include a 20-to-30 minute personal practice session for the co-therapists before beginning the MBCT-C session to foster their own mindfulness experience and routine. When the clinicians foster their own mindfulness practice, it enriches the therapy for all involved. Mindfulness programs for children have been implemented in both school-based curriculum and clinical settings. Many schools, clinics, afterschool programs, juvenile detention programs, and child groups are incorporating a mindfulness component into their curriculums with the goal to help children develop stronger emotional competency, executive functioning, self-regulation, awareness, and attention skills at a young age.

Clinical settings. MBCT-C, MBSR, and other similar adapted mindfulness-based interventions have been tested with many different age groups and populations of children. Often these studies and programs focus on changes in clinical behavior such as anxiety, depression, medication use, compliance, attention, sleep quality, substance use, aggression, worry, mental health, general mood, coping skills, self-management, psychological symptoms, and perceptions. Table 1 summarizes the major clinical studies in mindfulness-based interventions with children and adolescents.

School-based programs. School-based mindfulness programs, while containing exercises similar to those in child clinical setting, focus on improving skills and behavior needed for school success. These skills and behaviors include: school
readiness, aptitude, mental health, academic achievement, attention capacities, academic engagement, school-relatedness, teacher self-efficacy, decreased behavior problems, anxiety and test anxiety, social emotional competency, stress, mood, school self-concept, and optimism (Biegel & Brown, 2011; Napoli et al., 2008; Mendelson, Greenberg, Dariotis, Gould, Rhoades & Leaf, 2010; Schonert-Reichl & Lawlor, 2010). Educators and psychologists are implementing both school-based studies and on-going mindfulness programs and curricula in schools around the country. Table 2 outlines major school-based mindfulness studies and Table 3 summarizes the on-going school-based mindfulness classes around the country.

**Empirical evidence.** The results of both school-based and clinical mindfulness programs point to a promising future of mindfulness interventions for children. Through behavior checklists, parent surveys, teacher rating scales, observations, self-reports, and physiological measures, mindfulness programs show evidence of helping children both academically and clinically. Currently, most studies are testing the feasibility and acceptability of mindfulness interventions, and these studies have all shown that children in schools and clinical programs are ready, able, and enjoy learning and practicing mindfulness skills.

The results of one pilot study showed that children had significantly reduced attention problems, fewer anger problems, and although not statistically significant, fewer symptoms of anxiety and depression (Lee, Semple, Rosa, Miller, 2008). Another study by Barnes et al. (2004) demonstrated that children’s heart rates and blood pressure were lowered by a school-based three-month daily mindfulness practice. Additionally, this study demonstrated a decrease in depressive symptoms and helps with feelings of sadness.
and anxiousness (Barnes et al., 2004). Singh et al. (2009) illustrated that mindfulness exercises for children and their parents help to increase parent-child relationships and child compliance. Children in this study also “improved significantly and substantially on personal goals, attention, awareness, impulsivity, being attuned, social problems, and happiness” (Singh et al., 2009, p. 204). In almost all of the studies, the investigations reported that mindfulness practice improves attention, social and emotional skills, academic attention and competence, and mood (Kerrigan et al., 2011; Schonert-Reichl & Lawlor, 2010; Mendelson et al., 2010; Biegel & Brown, 2011; Napoli et al., 2008).

**Limitations.** While mindfulness for children is a relatively new intervention with a hopeful beginning, more research is needed to validate its use in educational and clinical settings. Larger sample sizes are needed to generalize the results (Liehr & Diaz, 2010). A recurring challenge in clinical studies is the high dropout rates often due to lack of transportation or caregiver commitment (J. Lee, personal communication, October 19, 2010). Another limitation of current studies is that they rely on self-report, and non-blind third party measures, and use of clinical measurement instruments with non-clinical samples (Burke, 2009; Lee, 2006). These methodologies can increase bias due to demand characteristics of both the participants and investigators, and instruments that do not measure the target behaviors. Prospective studies (e.g., Bögels et al., 2008) with younger children are needed to test the claim that if mindfulness interventions were provided to young children at risk, early practice would provide lasting benefits throughout life. Future investigations will need to address these limitations to research design and expand our knowledge about the impact of mindfulness practice with children.
This Investigation

**Background.** Mindfulness-based interventions with children in clinical and school settings are measuring similar dependent variables and finding similar results. However, no studies have investigated the results of mindfulness-based interventions in community-based afterschool educational and therapeutic settings. For this investigation the use of mindfulness practice was piloted for use in an afterschool program (TAP). Such programs tend to focus on social/emotional competency needed to return to or remain in school and to do well academically. These types of programs are important for children who may be struggling in school and at home with diagnosed and undiagnosed mental health challenges and learning disabilities or at-risk for these difficulties. Afterschool programs can be found across the U.S.A., and could be very important spaces for mindfulness-based interventions and programs as they provide a needed link between educational and clinical settings. Additionally, because children are aware that they are in afterschool programs to help improve social/emotional skills and in turn academic success, these settings offer heightened awareness and motivation needed for the commitment and growth from the mindfulness practices. Given the promising beginning of mindfulness interventions for children in schools and clinics, this investigation explored the feasibility and acceptability of implementing a mindfulness program for children with emotional and behavioral challenges in a community-based afterschool setting.

In consultation with Wheaton College’s Professor of Education, Mary Lee Griffin, and one of the MBCT-C primary investigators and clinician, Dr. Jennifer Lee, I prepared an 4-week, 8 session, mindfulness practice for children (MP-C) program based

Personal communication (November 1, 2011) with Dr. Jennifer Lee helped me address the challenge of choosing the appropriate measures of mindfulness in children. She recommended focusing on two skills, mindfulness itself and emotional competency, versus clinical targets in previous publications, such as anxiety or depression in children. This seems especially appropriate for a skills-based after school program such as TAP. Along with self-reports by children of the program’s effectiveness, Dr. Lee recommended the use of the Child and Adolescent Mindfulness Measure (CAMM) (Greco, Smith, & Baer, 2009, 2011). An earlier version, Child Acceptance and Mindfulness Measure (Greco, Dew, & Baer, 2005), was readily available for this study. One validated measure of emotional competence that was also readily available was the Trait Emotional Intelligence Questionnaire-Child Short Form (TEIQue-CSF).

To the best of my knowledge, this is the first study to use momentary time-sampling, suggested by my thesis advisor, Professor Grace Baron, to sample and record children’s attention to the task during class sessions. This measure provides objective data to support self-report and other data.

In sum, this study explored the feasibility and acceptability of a mindfulness program for children in an afterschool educational/therapeutic setting. In addition, this
single-case, pre-post investigation employed quantitative measures to assess changes in emotional competency, mindfulness/awareness acceptance, and attention to task, a behavioral target, important to both educational and clinical uses of mindfulness. This investigation aimed to provide evidence of MP-C’s relevance and feasibility in community-based therapeutic and educational settings by addressing the following research questions.

1. Can children at this community-based afterschool program learn mindfulness skills?
2. Can TAP children benefit from using mindfulness as a coping skill?
3. Can mindfulness practices help children to develop increased abilities in attention, awareness, and emotional competency?
4. What other changes (if any) may occur from this 8-session, 4-week program?

**Hypotheses.**

**Hypothesis 1:**

The MP-C program is expected to be feasible to implement in a community-based therapeutic and educational afterschool program. Feasibility will be assessed using attendance and retention rates.

**Hypothesis 2:**

The MP-C program is expected to be acceptable to TAP’s children (ages 8-12) enrolled in the from the afterschool therapeutic program. Acceptability will be assessed
using the quantitative and qualitative feedback on the child and teacher satisfaction questionnaires (adapted from Semple & Lee, 2011).

**Hypothesis 3:**

Children who participate in the MP-C program will show lower percentages of off-task behaviors by the end sessions of program as compared to the beginning sessions as determined by the momentary time sample observation measure (Tieghi-Benet, M. C., Miller, K., Reiners, J., Robinett, B. E. Freeman, R. L., Smith, C. L., Baer, D., Palmer, A., 2003)

**Hypothesis 4:**

Children who participate in the MP-C program will demonstrate higher levels of mindfulness in their post-test measure as compared to their pretest measures determined by the total score of the CAMM (Greco, Drew & Baer, 2005).

**Hypothesis 5:**

Children who participate in the MP-C program will demonstrate higher levels of emotional competency in their post-test measure as compared to their pretest measures determined by the total score of the TEIQue-CSF (Mavroveli, S., Petrides, K. V., Shove, C., & Whitehead, A., 2008)

**Method**

Both Wheaton College’s Institutional Review Board and the Risk Prevention and Management Team of Community Care Services, the umbrella organization of TAP pre-approved this study.
**Participants.** English speaking children, ages 8-12, who were enrolled in an afterschool therapeutic program for the clinical population of children diagnosed with emotional and behavioral challenges participated in this study. Seven participants were selected from the pool of children currently enrolled in the Total Achievement Program (TAP) based on recommendations from the Program Director. Informed consent from parents and assent from the children were obtained. One of the seven participants was not willing to respond to the pretest surveys before MP-C began and therefore was eliminated from the study. During the third class, one participant withdrew due to challenges of an approaching transition date from TAP and home and school difficulties, resulting in 5 participants in total. Table 4 displays the demographics of these participants based on information reported from TAP and the CANS.

**Setting.** Figure 1 illustrates the setting. The class was held in a private room in the same building as the TAP program yet separate from the rest of the group. There were curtains hanging on one end of the room to block off the area designated for the Quiet Space. The Quiet Space had beanbag chairs and was dimly lit to help calm the students if they needed to take space. Small square rugs were arranged in a circle allowing enough space between each student. Then each child’s binders were placed on a rug before the children arrived in the classroom to designate where they would be sitting for that class. This prearrangement eliminated any potential conflicts regarding seat location and the possibility for distractions. The mindfulness bell was placed in front of the primary investigator to allow her to ring it when necessary during the session. This general set up was maintained throughout all eight sessions.
Design and Procedures. Each participant acted as his or her own control: the present study used a within-subjects, pre-post design. The pre-test data were collected during the week before the first session by the staff at the afterschool program and the post-test data were collected within a week after the last session, except for one student whose posttest data was delayed due to post-program absences and was collected two weeks after the program completion. The pre and posttest data was analyzed using paired t-tests. The primary investigator conducted a program evaluation questionnaire with the participants the week after the program was completed and transcribed the participants’ responses. The primary investigator, along with a staff member from the afterschool program and a Wheaton College research assistant administered a mindfulness practice program in a small group format. The primary investigator led the activities, while the research assistant recorded observational data. The staff member was available to mediate any challenging situations that arose among the participants and assist the primary investigator in the lessons. The 8-session program was delivered in 45-minute sessions, two sessions per week.

The sessions were held in a quiet room separate from the other children in the afterschool program during the last 45 minutes of the 2-hour afterschool program schedule and after the children had free time and snack with the larger afterschool group. After the sessions, the children were picked up by their rides to return home.

The mindfulness program was adapted from: Semple & Lee (2011)’s handbook of MBCT-C, Lantieri’s Building Emotional Intelligence guide, Susan Kaiser Greenland’s The Mindful Child guide, and the Wheaton College Education Department’s Mindfulness
Handbook for Children. Class instructions include activities to teach self-awareness and self-control through becoming aware of breathing, eating, movement, listening, and thinking. This program introduced simple exercises to demonstrate the concept of mindfulness and how it can be applied to everyday life. Participants were given instruction, in-class opportunities to practice mindfulness, and home exercises after each session to apply this practice outside the designated group time.

Structure and Content of Instructional Sessions. The research team included a primary facilitator, classroom monitor/assistant facilitator, and observer/data collector who were present during each program session. The primary investigator and the research assistant would arrive to TAP twenty minutes before the program start time to set up the classroom. Before beginning each session and before the children arrived in the classroom, the group facilitators would engage in a 3-minute mindfulness practice themselves so as to embody the practice in which they were teaching. Each of the 8 sessions of the program had a theme that would prepare the participants for each following session. The themes of each session were: Finding the Breath, Body Awareness, Body in Motion, Strengthening Attention, Noticing Thoughts and Reactions, Feeling Emotions, Acting with Awareness, and Living with Presence, Compassion & Awareness. However, due to a large number of absences for the Strengthening Attention session, the activities from this session were spread out among the remaining classes so that the children who were absent could still participate in these important activities. Each 45-minute program session followed the same general structure:

1. Take attendance with the Being Present Board (as children walk in to the
2. Opening check-in: each child say one word about how they currently feel followed by the bell and a mindful breath.


4. Introduce the agenda for the current session.

5. Brief check in about home practice experiences.

6. Experiential mindful awareness practices and activities

7. Talk about home practices.

8. Closing check-in: each child say one word about how they currently feel.

Only one student, Molly, completed all eight-class sessions. John had three absences, Susie had three absences, Evan had three absences, and Andrew had 2 absences. Due to the high number of absences, this resulted in slightly modifying the sequence of practices.

At the end of the 8-session program, the primary investigator, along with the afterschool staff and research assistant offered a parent’s night at the afterschool to present their child’s experience and tools for how parents can continue this practice with their children. Two of the participants and their mothers were present at the parent session. At the completion of the formal investigation, the facilitators offered a booster session for the children to reinforce their ongoing mindfulness practice.
Measures.

Demographic data. TAP provided the Child & Adolescents Needs and Strengths (CANS) survey and the afterschool program files for demographic information including age, date of beginning TAP, prognosis, diagnosis, if on medication, hospitalizations, other medical conditions and the behavioral/emotional needs and strengths of the participants.

Pre/post-test measures. Two scale measures were completed at pretest and posttest. The afterschool staff verbally administered the pre and posttest scales and the children responded verbally and/or with use of a pictorial scale with 0 meaning never and 4 meaning always. These include the Child Acceptance and Mindfulness Measure (CAMM) (Greco, Drew & Baer, 2005). See Appendix C. This 25-item measure of mindfulness assesses the degree to which the children and adolescents observe internal experiences, act with awareness, and accept internal experiences without judging them. The Trait Emotional Intelligence Questionnaire (TEIQUE) (Mavroveli, S., Petrides, K. V., Shove, C., & Whitehead, A., 2008) is 35-item 5-point scale for children ages eight to twelve measures nine facets including: adaptability, assertiveness, emotional perception, emotional management, emotional regulation, impulsiveness, relationships, self-esteem, self-motivation, social awareness, stress management, trait empathy, trait happiness, and trait optimism. See Appendix D. Both of these measures are validated and have demonstrated good reliability.

Observational Measures. A Momentary Time-Sampling measure (see Appendix E) was used to assess the children’s attention to task. The research assistant recorded
attention to task abilities through measuring off-task behaviors within a 10-minute time sample for each participant during four of the eight sessions at the beginning, middle, or end of the session to counter-balance any differences in behavior at different times during the session. These observational data were used to record changes in attention, defined as the presence or absence during the sampling period of extraneous vocal or motor behavior, throughout the program.

Additionally, the research assistant recorded observational group notes from the beginning, middle, and end of each class. These group notes were used to identify any changes in group responses and behaviors over the course of the program.

**Inter-rater agreement.** A research assistant was the primary data collector for the momentary time sample measure. On one occasion a TAP teacher, trained in momentary time-sampling, recorded momentary time sample data for two participants, Molly and Evan. An agreement was defined as both the research assistant and TAP teacher recording an instance of off-task behavior, verbal and motor, in the same minute. Percent inter-rater agreement was calculated by dividing the total number of agreements by the total numbers of observations made by the research assistant and multiplying by 100. The inter-rater agreement for off-task behavior was 90% for both Molly and Evan. The inter-rater agreement for Molly’s verbal off-task behavior was 90% and motor off-task behavior 90%. The inter-rater agreement for Evan was 90% for verbal off-task behavior and 80% for motor off-task behavior. Therefore the mean inter-rater agreement for any off-task behavior is 90%; 90% for verbal, and 85% for motor.
Qualitative measures. A self-report measure on children’s daily check-in responses was recorded by the research assistant both at the beginning and end of each class. These responses were then analyzed to determine any changes in children’s self-awareness and ability to identify and recognize their experience in the present moment. The research assistant also recorded general group and individual notes during each session that were analyzed for the case study component.

At the end of the study each child met individually with the primary investigator and completed orally the Child Evaluation Questionnaire adapted from MBCT-C (Semple & Lee, 2011) to give both Likert-scale responses as well as open-ended comments about the mindfulness practices. See Appendix F. Four of the program teachers filled out evaluations for each child participant rating and commenting on any changes observed during normal program classes post MP-C especially in terms of the study target behaviors of attention to task, emotional competency, and mindfulness. See Appendix G.

Results

Research hypothesis 1: Feasibility of MP-C at TAP

The MP-C program can be implemented in a community-based therapeutic and educational afterschool program. Feasibility is supported by retention and attendance rates.

Retention and attendance. One participant withdrew from the study after the third class. All remaining five participants completed the program with an overall
Mindfulness Practice for Children (MP-C) average attendance rate of 72.5%. Completer status was defined as attendance to more than 50% of MP-C classes (at least 5 of the 8 sessions). One participant attended all 8 sessions, while three of the participants attended 5 sessions, and one participant attended 6 of the 8 sessions.

**Research hypothesis 2: Acceptability of MP-C at TAP**

The MP-C program was acceptable to TAP’s children (ages 8-12) enrolled in the afterschool therapeutic program. Acceptability was assessed using the quantitative and qualitative feedback on the child and teacher satisfaction questionnaires (adapted from Semple & Lee, 2011).

**Child satisfaction.** See Table 5 for children’s responses to 10 Likert-scale items on the Child Evaluation Questionnaire. All five of children reported MP-C as ‘helpful’ or ‘very helpful’ (ratings of 4 or 5). Three out of the five participants ‘strongly agree’ (rating of 5) that since being in this program, they felt less worried in their lives, and the other two participants gave a rating of 3 (‘neutral/not sure’). Three of the five participants either ‘agree’ or ‘strongly agree’ (ratings of 4 or 5) that since being in this program, they feel better about how they act with others, while the other two participants gave a rating of 3 (‘neutral/not sure’). Similarly, three of the five participants endorsed that this program has helped them at home (with ratings of 4 or 5), while the other two children felt ‘Neutral/Not sure’ (rating of 3). Finally, four of the five completers reported that they will continue practicing mindfulness awareness techniques in their lives following the program’s end, while one participant felt ‘Neutral/Not sure’ (rating of 3). Children’s
responses to open-ended questions on the Child Evaluation Questionnaire (questions 11-18) are included in Table 6 and in the Case Studies section of this report.

**Teacher satisfaction.** See Table 7 for the teacher’s responses to both the Likert-scale and open-ended questions on the Teacher Evaluation. All four TAP teachers reported that the program had a positive effect on various aspects of the children’s behaviors including attention to ask, emotional competency, and mindfulness after MP-C was completed. On average, the teachers rated each of the four questions highly on the 4-point (0-4) Likert scale with average scores of 3.15, 2.85, 3.05, and 2.75 to the four questions respectively. One of the highest rated behaviors was the ability to pay attention to what s/he is doing ($M = 3.15$) and the other highest was the ability to stick to and focus on TAP activities ($M = 3.05$). More detailed qualitative feedback and responses from the teachers will be presented in the Case Studies and Discussion sections.

**Research hypothesis 3: Reduction of off-task behaviors**

Children who participate in the MP-C program showed, overall, lower percentages of off-task behaviors by the end sessions of program as compared to the beginning sessions as determined by the momentary time sample observation.

Figure 3 displays the group’s mean occurrence of any off-task behavior over the four observation periods. The group average of intervals with off-task behavior decreased from 70% in the first observation, to 50% in the final observation.

Figure 2 displays each participant’s momentary time sample data of off-task behavior, the occurrence of either motor or vocal, over the four observation periods.
(There are only three observation points for Andrew due to an absence during the final observation.) Susie demonstrated reduced intervals off-task behaviors with percentages decreasing from 100% to 40% from the first observation to the final observation. Evan showed a reduction of sample off-task behaviors of 80% to 20% from the first observation to the final observation. Molly reduced the intervals with off-task behaviors in her initial observation from 80% to 70% in the final observation, and similarly Andrew’s initial observation of 70% off-task behaviors reduced to 60% in the final observation. John was the only participant whose percentage of intervals of off-task behaviors increased from the first observation of 20% to 70% in the last observation.

**Motor behavior.** Figure 4 illustrates the trend toward fewer intervals, over the four observations, with interfering motor behaviors. Evan decreased his intervals of interfering off-task motor behaviors between the first and last observation from 70% to 0%. Susie demonstrates a reduction of intervals with off-task motor behaviors from the first observation with 100% to the last observation with 40% off-task motor behaviors. Andrew reduced his sample off-task motor behaviors from 70% to 50%. John and Molly showed no reductions from the first observation to the last with percentages of 20% and 70% respectively. Both demonstrated great variation in motor behavior across all four observation periods.

**Vocal behavior.** Figure 5 shows the large variability in the participants’ vocal response during the four observation periods. There was no overall trend of decreased intervals with off-task vocal behavior. However, comparing just the first observation to the last observation most participants showed reductions in intervals with interfering
vocal behaviors. Molly reduced her off-task vocal behaviors from 40% to 0%, Evan showed decreases from 50% to 20%, Susie showed decreases from 30% to 10%, Andrew decreased from 20% to 10%, and John increased from 0% to 50%.

**Research hypothesis 4: Increase in mindfulness**

Children who participate in the MP-C program did not demonstrate higher levels of mindfulness in their post-test measure as compared to pretest measures determined by the total score of the CAMM (Greco, Drew & Baer, 2005).

The research hypothesis 3 was not statistically supported statistically in this study. The mean increase in scores was 3.6 with a 95% confidence interval ranging from -14.769 to 7.596. Paired t tests on change in CAMM score before and after MP-C showed no significant increase in the CAMM total score among the participants who completed the program, $t(4) = -.893, p = .422$, from pretest ($M = 51.60, SD = 8.295$) to posttest ($M = 55.20, SD = 10.803$). Table 8 displays the results of the paired t test.

The Wilcoxon Signed Rank Test (for use with small samples) also revealed no statistically significant increase in the CAMM scores, $z = -.730, p = .465$. The median score on CAMM increased slightly from the pretest ($Md = 49$) to posttest ($Md = 57$). Table 9 displays the results of the Wilcoxon Signed Rank Test.

**Research hypothesis 5: Increase in emotional competency**

Children who participate in the MP-C program did not demonstrate higher levels of emotional competency in their post-test measure as compared to their pretest
measures determined by the total score of the TEIQue-CSF (Mavroveli, S., Petrides, K. V., Shove, C., & Whitehead, A., 2008)

The research hypothesis 3 was not statistically supported in this study. The mean increase in scores was .4 with a 95% confidence interval ranging from -14.047 to 13.247. Paired $t$ tests of the change in TEIQue-CSF score before and after MP-C showed no significant increase in the TEIQue-CSF total score among the participants who completed the program, $t(4) = -.081, p = .939$, from pretest ($M = 122.80, SD = 14.202$) to posttest ($M = 123.20, SD = 14.822$). Table 10 displays the results of the paired $t$ test.

The Wilcoxon Signed Rank Test demonstrated no statistical increase in the TEIQue–CSF scores, $z = -.365, p = .715$. The median score on TEIQue–CSF increased from the pretest ($Md = 120$) to posttest ($Md = 121$). Table 11 displays the results of the Wilcoxon Signed Rank Test.

Case Studies

**John**

**Clinical background.** John is a 12-year-old Caucasian boy, diagnosed with ADHD, Mood Disorder NOS, and Prolonged Posttraumatic Stress Disorder. He is on medication for his mental health condition and was hospitalized for aggression in 2007. John was described by his teachers as struggling with impulsivity, aggression, anxiety, and poor emotional control and seems to do better in a well-structured environment. TAP teachers explained that when upset, instead of communicating, John tends to run away
either to another room or outside to hide causing a danger to himself. Academically John appears to demonstrate cognitive limitations.

**Observations and outcomes.** In the first session, John appeared to be quiet and relatively attentive to the task at hand, with some motor off-task behaviors. He asked relevant questions during one of the activities. It appeared that he did not quite understand what was expected of him and watched his peers for cues. John was absent for the second class, but during the third class he demonstrated more active and off-task behaviors, both motor and vocal. John seemed to be very distracted by his peers and was laughing, talking, and touching others in the group. In his beginning class check-in he reported that he felt “happy”, and at the end of the class check-in he reported the he felt “peaceful”. He seemed less engaged in this class than the first class. While he continued to demonstrate off-task motor behaviors in the following sessions, he asked good questions and tried to follow directions. In the fifth class he was able to articulate how he was feeling with more detail than the previous classes in the two check-ins reporting, “good and hyper” and then “excited and happy”. However, in the sixth class he seemed quite disengaged and went into the quiet room for one of the exercises and only returned to the room when invited to, not on his own initiative. In the two check-ins for this day John reported that he felt, “excited because next Sunday I am going to the movies with my family” and then, “really good”.

John had a very powerful and interesting experience in the seventh MP-C class. Immediately after the “Sun in your Heart” activity which involves imagining a sun in the heart area radiating and warming up the entire body, John became very upset and asked,
“When will this program be over?” and exclaimed, “I don’t even know why my mom signed me up for this stupid program!” The primary investigator and TAP teacher invited him to go into the quiet room to take a break but he did not want to leave, nor did he want to participate in the group. Physically appearing very upset, he took a seat on the side and the primary investigator changed the activity to yoga to help involve the children and raise the spirit of the class. John remained seated on the side until he saw his peers struggling with a yoga pose and he got up quickly and said, “I can do it”. After the yoga was over he asked, “Does this program make you stronger?” The primary investigator and the TAP teacher explained that mindfulness makes you a lot stronger. The P.I. related mindfulness to football, which John loves, by explaining that mindfulness helps one to become more aware and be a more successful team player. After this conversation John began to participate enthusiastically and responded very appropriately and thoughtfully to the following social visualization exercise. He began asking detailed questions, identified his and others’ emotions in hypothetical situations. By the end of the class he was grinning and looked very calm, relaxed, involved and happy. In the final check-in he reported that he felt, “Excited, sad, surprised, proud, brave, strong, and peaceful”. This was the most articulate John had been in all of the sessions. After class he asked if he could share something that he was proud of to the other children in Friday’s class and the primary investigator recommended that he write it in his notebook so he does not forget. John wrote in capital letters across the entire page of his notebook, “P-R-O-U-D”.

In the Child Acceptance and Mindfulness Measure, John demonstrated the greatest total score increase of all participants. His total pretest score was 49 (out of 100), and his posttest total score increased to 66 (out of 100). This demonstrates an increase of
7 points. This change score seems to support his self-report and our behavioral observations.

**Teacher comments.** All of the four TAP teachers indicated in the teacher evaluation form that they have noticed a difference in John’s ability to express his feelings verbally as opposed to running away or hiding since participating in MP-C. During MP-C the teachers report that John did not demonstrate any challenging behaviors. They also shared that he has demonstrated a quicker recovering time and more self-composure when challenges do arise. For example, on one occasion the teachers reported that he became quite angry, and, as he often does, ran to another room and shut the door. When asked if he wanted to practice a mindfulness exercise he quickly said “No!” but soon rejoined the group for snack. After snack he went back into the room but left the door open. The teacher asked John if he would like to practice a mindfulness exercise and this time he quickly said yes and told her he wanted to do the “snake pose”. After doing the pose with the teacher for a short time he rejoined the group and participated for the rest of the day. For him, the teachers explain, this is a great improvement.

**Child comments and conclusions.** Unfortunately, due to a doctor’s appointment, John was unable to attend the final MP-C class but he was able to express himself very thoughtfully in the post-program evaluation with the primary investigator and the parent’s night. When asked to define mindfulness John described it as “peaceful, happy”. He described that he had learned, “Really a lot of stuff. Stuff I shouldn’t do to my parents, and that I shouldn’t hurt when I am mad and that I should relax when I am mad. I
learned to be happy”. He said the he felt proud of “Being peaceful while doing stuff and feeling proud of myself”. John rated all of the evaluation questions either a ‘5’ or a ‘4’, the two highest ratings. John indicated that he found every part of the program helpful and that the most helpful part of the program was

“Doing the activities with you and helping my friends being a role model and helping them act straight like they do. The bell ringing really helped me and the walking mindfulness: running and walking, running and walking in a circle”.

In the question asking how he feels when he looks back on the four weeks of MP-C he reported that he feels, “really good and proud of myself and happy, peaceful, surprised and helpful. Nice”. Finally, John reported that he looks forward to, “doing this program again and helping out the kids with their problems by doing the stuff that you did. I learned a lot from what you taught me.”

In the parents’ night, John was very involved and enthusiastic to demonstrate what he has learned and how it has helped him. His comments were very articulate, in a way that he did not demonstrate in the beginning of the program. Voluntarily in the beginning of the parents’ night he raised his hand and said, “I just want to say that this program helped every kid who was in it and every kid learned a lot from it. Every kid with problems should learn mindfulness and do a program like this”. Later, after engaging in some mindfulness exercises with his mom again he raised his hand and said while smiling, “It’s kind of cool that we are teaching mindfulness to our parents!” Finally, at the end of the parents’ night he asserted, “Mindfulness has really helped me and I am excited to teach other kids with problems mindfulness”.

John experienced a dramatic change in attitude and behavior throughout the program. He began MP-C very quiet and displayed limited engagement. At points he seemed engaged and interested, but during the seventh class he had a very challenging experience. However, his decision to stay in the class and continue trying, unlike his typical escape/avoidant pattern, transformed his experience in MP-C. John was one of the participants who rated MP-C the highest and explained that this program has helped him greatly and that he feels “really good and proud of myself and happy, peaceful, surprised and helpful”. This self-report demonstrates that MP-C has had an impact on him and it is hoped that he will continue to use the skills he learned as a coping mechanism and give him confidence that he can get through challenging moments without running away. Of the five participants he demonstrated the greatest change over the sessions in articulating both self-awareness and emotions he was experiencing.

**Susie**

**Clinical background.** Susie turned 9 years old during the MP-C program and is a Caucasian female, diagnosed with a Mood Disorder NOS and ADHD and is currently taking medication for her mental health conditions and has been hospitalized for homicidal ideation in 2010. TAP teachers have described Susie as exhibiting impulsivity, hyperactivity, aggression, and struggles with peer and social interactions. However, the TAP teachers have also explained that since being in TAP, 1 year and 5 months, her aggression has decreased noticeably. Susie has no reported learning disability; she has no issues in school achievement and attends it regularly.
Observations and outcomes. Susie began the program as a very active child. She demonstrated a lot of off-task motor and vocal behaviors. While she tried to participate in all activities, she was very physically active and fidgeting quite a bit during the non-physical activities. In the third class, which focused on the body in movement, Susie did a very good job. She was very focused and participatory in the yoga exercises and was a good role model to her peers. Similarly, in the walking mindfulness exercise, Susie demonstrated high levels of attentiveness to her body sensations and attention to the instructions. In the fifth class, Susie demonstrated a very positive and attentive response to the noticing thoughts exercise. During this visualization, Susie was very calm and focus with limited motor movements. When she shared her experience she drew a picture and explained that she noticed she had many thoughts and even after noticing them they kept coming back. She also explained, “I saw a lot of little thoughts and one big thought”. She demonstrated a strong ability to be aware of her thoughts and understand what was going on inside of her head. As the classes went on, Susie’s off task motor and vocal behaviors decreased. Unfortunately Susie was absent for the sixth and seventh class due to unknown circumstances. During all of the initial and final check-ins, Susie said that she felt “happy”, and this did not change throughout the classes.

During the last class, when children were asked to describe what they have learned and what they feel proud of Susie reported that she learned it is, “good to be kind to everyone and notice everything around you.” She also said that she felt proud that she was good to other people. Susie described that mindfulness means “Happiness and being kind to people and being relaxed. Also it means to notice what you are thinking”.
Susie demonstrated a great decrease in off-task motor and vocal behaviors over the four momentary time sample observation periods. During the first observation Susie showed 100% off-task behaviors in the 10-minute observation period. The last momentary time sample observation revealed that Susie demonstrated off-task behaviors only 40% of the time.

**Teacher comments.** The TAP teachers indicated that they have not noticed a decrease in her hyperactive behaviors since the program but one teacher explained that Susie has shown some “increased insight”.

**Child comments and conclusions.** In Susie’s evaluation, her responses were consistent with the observations made of her in class. She indicated that her least favorite part of the program was “the talking about the stuff, like breathing and stuff”. This demonstrates that she had a very hard time with the activities that required stillness. Susie said that she will miss “the yoga positions and thinking activity” she added, “I always notice them [thoughts] and get too caught up in them”. And in the future she hopes that she will “not get too caught up in my thoughts or books”. These responses confirm the observations in class. During the noticing thoughts exercise, Susie seemed to be very aware and focused, and in her response it shows that this activity really helped her and left an impact on her. Also, this demonstrates that in general, the movement activities were more effective than the still relaxation activities. Overall, Susie found the program ‘Helpful’ and would recommend this program to her friends. While Susie seemed to be more aware of her distracting thoughts and her attention to tasks increased over the
sessions, there is little evidence to indicate an overall change in self-awareness and articulation in the emotions she was experiencing.

Molly

**Clinical background.** Molly is a Caucasian 12-year-old girl, diagnosed with ADHD, Mood Disorder NOS, and Anxiety State NOS. Molly is on medication for her mental health conditions and has no reported hospitalizations. Molly’s other medical conditions include allergies, asthma, and bowel issues, which often produce anxiety for her. TAP teachers have explained that Molly struggles with anxiety and trauma, therefore experiences social and emotional challenges. TAP teachers describes that Molly often speaks with a defensive, hostile, oppositional and negative tone especially when anxious or given constructive criticism. They also assert that Molly has low self-esteem and has difficulty taking complements or feeling good about herself. Academically Molly often does not complete homework assigned to her from school, but has no reported intellectual disabilities.

**Observations and outcomes.** Initially Molly seemed very fidgety and a little bit irritable and defensive. She would participate in the activities, but constantly look at Susie and giggle or become distracted. During the first two classes, Megan came up with excuses for reasons she would not be able to do the home practices, and was defiant when given suggestions. However as the classes went on, Molly appeared to become more comfortable and interested in the program and less defiant. In fact, although in the previous class she said she would not able to do the body relaxation home practice exercise, when she came into the third class she voluntarily shared that she had practiced
it before bed and that it “felt good that my body was relaxing”. By the fourth class Molly was very involved and always came in having completed the home practice and ready to share her drawings and experiences. Molly’s drawings were very descriptive and demonstrate effectively her experiences and observations throughout MP-C. These pictures are displayed in Figures 6-12. Molly did very well in class 4, which was focused on becoming aware of seeing, hearing, touching, and tasting, and very eloquently described her acute awareness and observations at the end of these exercises.

During the last class Megan mentioned how she has been using the mindfulness skills to help her during times of distress outside of MP-C and that they have been very helpful. She showed the class a picture of herself doing the downward dog yoga pose and explained that she did this when she felt angry with her brother. She asked many questions that indicating her concern with the program ending and her trying to accept it. These questions included, “Are we going to be doing this next year too?” “Can you come every month so we can do this again?” Reassuringly she said, “I’m graduating [from TAP] soon so there will be more time to do this”. When the class was asked to share what they learned and what they felt proud about Molly shared, “I learned that it feels good to feel relaxed” and she felt proud that “this has been helping me”. What asked to explain what mindfulness means to her she said, “[Mindfulness means] to relax when I am mad”. However in her notebook she drew a picture and wrote a more detailed definition that stated, “Mindfulness means to relax when I am mad and to think about what’s happening now and don’t worry about what is going to happen. But sometimes it is ok to think about what is going to happen”. This definition clearly demonstrates her experience in MP-C and what mindfulness has meant to her and what it has taught Molly.
Molly demonstrated relatively consistent motor off task behaviors over the four momentary time sample observation periods; however her vocal off-task behaviors decreased. Additionally neither Molly’s CAMM nor her TEIQue-CSF scores changed from pretest to posttest.

**Teacher comments.** All four of the TAP the teachers explained that after MP-C Molly is demonstrating less negative attitude and is more expressive. One teacher said that Molly “seems to exhibit better self-esteem”. Another teacher said that Molly seems less anxious and is “using a more polite tone of voice with staff and peers”. Another teacher explains that she seems more able to accept feedback from the TAP staff. The TAP Program Director shared that Molly has taught her brother the mindfulness techniques, which shows that she is taking these skills home and sharing them. Molly’s therapist reported that she has been more open in her therapy sessions and readily wants to play the therapeutic games with him that she used to refuse to play.

**Child comments and conclusions.** In her evaluation Molly indicated that MP-C has been ‘Very helpful’ to her and that she will continue practicing mindful awareness in her life after the program. Molly reported that she found all parts of the program helpful especially the yoga and mindful breathing. She said that in the future she hopes that she can “teach my daughter or son this practice”.

Molly’s attitude changed dramatically from the beginning on MP-C to the end. She came in with a negative and defiant attitude and by the end she was a role model of how to participate and how MP-C can help inside and outside of TAP. Molly was one of the only participants who consistently completed her home mindfulness practice, and
shared her experiences in class. Molly’s reports in her final check-ins were consistent with what she had reported in her initial check-in. This might indicate that she has difficulty accepting changing her schemas and consciously noticing changes in her emotional state, because although her reports did not change, her affect was noticeably different. Of the five participants she demonstrated the greatest noticeable change in affect over the eight sessions.

Evan

**Clinical background.** Evan is a 10-year-old Caucasian male who has been diagnosed with an Anxiety Disorder and is currently on medication for this condition. Evan has no reported hospitalizations but he does have reported nighttime enuresis. The TAP teachers have indicated that Evan struggles with peer interpersonal relationships, has poor social skills, demonstrates immature and anxious behaviors frequently, and can be oppositional with parents. The teachers also explain that he often does not open up about what is bothering him and he is often not aware of his surrounding or good at following social cues. Evan has no reported learning disability and has no school achievement issues, yet his social skills deficits at times impact his social networks at school.

**Observations and outcomes.** Evan missed three classes spread out among the eight classes, that means that he did not build up the momentum that others built and he did not experience the cumulative approach of the classes. Initially Evan appeared fairly quiet and although he displayed some off-task motor behaviors, he was not disruptive to others and asked relevant questions. As the classes went on Evan began to show more
off-task behaviors and spoke frequently without raising his hand and interrupting others. By the second class, Evan began using more descriptive words to describe how he was feeling in the initial and final check-ins. For example, at the end of the second class’ check he said he felt, “relaxed, sad and happy”. His reflections and drawings were often quite thoughtful and valuable to the group. On the days that he was present, he would always try to practice the subsequent home practices and come in ready to share. Evan had a particularly hard time focusing on the mindful listening activity and said, “It was kind of confusing [listening to really soft sounds]”. In contrast, during mindful touching exercise and notice five new things exercise Evan demonstrated high levels of attention and focus. During the reflections from these activities Evan articulated that he became aware of objects and sensations of which was not previously aware.

It seemed that Evan was the most focused on the day that only he and another student was present. This might indicate that he would do better with an even smaller group. When more students were present, he seemed to be more inclined to demonstrate disruptive behaviors and distract himself and others. During the last class Evan was very focused on the drawing activity and listened respectively to other children. When asked what he had learned from MP-C and felt proud about he responded, “I learned it’s good to notice everything” and he felt proud “of coming”. Evan described that mindfulness meant “happiness” to him.

Evan’s momentary time sample observations revealed a great decrease in off-task behaviors between the first and the last observation. During the first three observations Evan’s percentage of off-task behaviors increased slightly from 80% to 100% but the
fourth observation showed that his off-task behaviors had decreased to 20% during this observation period. Both his CAMM and TEIQue-CSF scores increased from the pretest to the posttest. Evan’s CAMM scores increased 8 points suggesting an increase in mindful awareness post MP-C, and his TEIQue-CSF increased 13 points suggesting an increase in emotional intelligence/competency post MP-C.

**Teacher comments.** Two of the TAP teachers indicated that Evan is now expressing how he feels more appropriately than he did before MP-C and one teacher highlights, “He is aware of his surroundings and is less sensitive it seems to staff feedback” in response to a change observed after MP-C. The staff also commented that in general Evan seems more pleasant and has a longer attention span. They expand on this by saying that now instead stopping a game in the middle he “will stick with a game until it’s over”. Therefore it seems that MP-C has been a benefit to Evan, especially when it comes to noticing his surroundings and coming back to the present moment.

**Child comments and conclusions.** In his evaluation, Evan rated MP-C very highly on most questions. He found the program ‘Very helpful’ and would recommend it to his friends. In his responses he indicated that since MP-C he feels less worried in his life, better able to manage his anger, better about how he acts with others, that it has helped him at home, and that he will continue practicing mindfulness in his life post MP-C. His answers to the open response questions demonstrated that he has found MP-C helpful to him, especially in terms of becoming more aware and noticing what is happening in the present moment. At the end of the interview he asserted that he was happy that the TAP teacher learned these skills too so that he continue to practice in TAP,
in addition to outside of TAP. While Evan seemed to be more aware of his surroundings, we have little indication of an overall change in self-awareness and direct application of these skills into his life outside of TAP.

Andrew

Clinical background. Andrew is a Caucasian 8-year-old boy who has been diagnosed with ADHD and Generalized Anxiety Disorder and is on psychiatric medication and he has no reported hospitalizations. The TAP Program Director has described Andrew as struggling with hyperactivity, impulsivity, aggression, excessive worry, depression, and easily frustrated. TAP teachers noticed depressive symptoms in Andrew as evidenced by his affect, lack of energy or will to participate, refusal of snack, and increased withdrawal. Andrew has reported difficulties getting along with his sisters and playing appropriately with them. At home is where a lot of his difficulties and family’s struggles occur. Academically his achievement is good however at times his emotional instability interferes with his intellectual abilities. The Program Director indicates in his CANS form that “He is a bright child who has the potential to learn coping skills and gain insight into his triggers, he may particularly benefit from CBT-based interventions.”

Observations and outcomes. During the first session Andrew was very quiet and did not speak very often nor ask questions and when he did he spoke very softly. He was very fidgety and moved almost constantly when his eyes were open, but seemed focused and followed directions. Consistently throughout all of the classes, Andrew’s body calmed down and barely moved as he was doing the mindfulness visualizations and
relaxation with his eyes closed. As soon as he opened his eyes, his body began moving again. After the body relaxation exercise he was able to articulate how his body felt and how the relaxation helped him. Andrew explained that he could feel “the blood moving throughout my body” after the relaxation exercise. This statement shows just how aware and present he was in his body. Comparing his typical off-task motor behaviors in the program to his still, relaxed, and calm body during the relaxation and visualization exercises it appeared as if he were a different person. As Andrew seemingly became more comfortable in the program and with the group, he began to demonstrate more off-task vocal behaviors yet at the same time more on-task vocal responses to the exercises. The physical relaxation and movement exercises helped Andrew. He was very focused on the mindful walking activity and he was walking very slowly, with deliberate and managed steps.

During the last session when he was asked to explain what he had learned during the program and what he felt proud about Andrew responded, “[I learned to] notice things around me so I don’t forget.” Then he struggled to think of something that he felt proud of and finally said that he felt proud of, “coming”. When asked to define what mindfulness means to him, Andrew described that mindfulness is “Noticing what is going on around you, inside of you [while putting his hand on his chest] [pause], and even on you!”

While his momentary time sample observations only demonstrated a slight decrease in off-task behaviors, Andrew’s TEIQue-CSF scores increased slightly from pretest to posttest, with total of 109 and 114 respectively. This change score seems to
support his self-report and our behavioral observations and indicate that he experienced a change in terms of coping with emotional stressors in his life and that MP-C has been helpful to him.

Child comments and conclusions. Andrew rated MP-C as ‘Very helpful’ to him and chose ‘Strongly agree’ that this program has helped him to feel less worried in his life, that it has helped him feel better about how he acts with others, that he is more patient in his life, that it has helped him in school, and that he will continue to practice mindful awareness post MP-C. Andrew chose ‘Agree’ that this program has helped him at home and further articulated this response in his open response answers. Andrew described the body relaxation exercise as the most helpful and elaborates on this as he says, “Nothing [in this program] was not helpful; it actually really helped me. Since my big sister flips out 5 times a month, that means… [Did the math in his head] 60 times a year, it helps me to relax. Tensing and then relaxing my body helps me to relax and I listen to my headphones at the same time so I can’t hear as much”. In response to this question ‘In the future, I hope that…’ he said, “My whole life changes. My family will change if my sisters and my mother go [to MP-C], because sometimes she [mother] gets over-aggravated with my sisters and me and this would help her [mother] relax”. In this response it is clear that Andrew is aware of the fact that although this program has helped him, his family is often his stressor, which has not changed. He wants his family to participate in MP-C so that maybe the stressors in his home life would dissipate. Additionally the fact that he wishes others could experience MP-C could also be another indication of the value he sees in the program. He is aware however that these skills are with him for the rest of his life and he plans on using them and using his binder to help
him remember. Figures 13-15 show Andrew’s in-class drawings. Andrews’s drawings are very abstract and could express his emotions during the exercises; however they are not distinguishable as concrete objects or experiences.

**Teacher comments.** One of the teachers had not worked with Andrew recently so did not feel that she could accurately evaluate his progress. The rest of the TAP teachers gave Andrew high scores on his ability to pay close attention to what he is doing in the moment and varying scores on the other teacher evaluation measures but no scores lower than ‘2’. Two out of the three teachers noticed changes in his behavior since MP-C. One of the teachers said that Andrew “has been more interactive with others since the Program began and he smiles more and is able to focus more”. The other teacher explained, “He has come a long way in a little time regarding feelings recognition”. Due to Andrew’s positive behavior, he transitioned out of TAP three weeks after MP-C ended. Of the five participants, Andrew demonstrated the strongest ability to apply these skills to stressful situations in his life outside of TAP, and was able to articulate specifically how MP-C has helped him.

**Summary of case studies**

All children reported that they found MP-C helpful to them and each child took away a different aspect of the program that he or she found helpful. For example, John seems to have developed a stronger ability to remain present in challenging situations and not run away and hide from them. He reports that he feels proud of himself and brave. Susie, who is generally very physically active, demonstrated a decrease in motor off-task behaviors. She also reports struggling with getting caught up in her thoughts and that
MP-C helped her to step away from her thoughts and become more present. Molly, who struggles with aggression and anxiety, reports that MP-C has helped to calm her down when she feels angry. Both TAP teachers and the P.I. observed a decrease in defiant behaviors and defensive and oppositional tone throughout MP-C. Evan reported that he learned how to become more aware of what is going on around him and has felt less worried since MP-C. This could help him better manage his anxiety and poor social skills if he continues to use mindfulness as a coping skill. Finally, Andrew explains that MP-C has helped to relax him when stressful events happen at home in particular and he has found this relaxation through awareness of his body. This may continue to help Andrew bring more emotional stability when stressors occur and still his normally hyperactive body. Taken as a whole, observations during MP-C and other TAP activities, self-reports, and quantitative measures point to learning outcomes in a number of key areas of mindful awareness and self-regulation.

**Awareness.** The case studies demonstrate that all of the children developed some awareness as a result of the mindfulness program. Some children indicated that they became more aware of what was happening internally in their minds or bodies, while others indicated more awareness of what was occurring around them. The self-reports and observations showed that the awareness then helped the children understand themselves better and manage certain situations.

**Relaxation.** After many of the exercises in class the children said that they felt calm and relaxed, the experience of relaxation was enjoyable, and it helped to calm their bodies and minds. Some children were very articulate in their description of this
experience while others simply described it as “relaxing”. This success with using the relaxation response motivated the children to apply mindfulness to their lives outside of the program.

**Home application.** The children who rated this program as most helpful also indicated that they used some of the exercises and skills taught outside of the TAP setting and mindfulness program. Children applied these exercises in times of stress or strong emotions to help them to cope with the challenging experiences. The students who applied these practices at home reported that they helped them to relax, and feel calm, peaceful, and happy.

**Resilience and self-regulation.** The children indicated that the relaxation and peacefulness resulting from the mindfulness exercises helped them to feel less angry or scared for example, during times of stress. This led to more resilience, which allowed children to become less likely to demonstrate challenging or disruptive behaviors through self-regulation. The changes in attitudes and behaviors as reported by the TAP teachers also indicate that children were more able to regulate their emotions and behaviors before they became more problematic.

**Discussion**

**Program Feasibility**

From the point of view of the participants, the TAP teachers, and to a much lesser extent the children’s parents, MP-C practices are applicable in a community-based after-school program. All five participants completed the program with an attendance rate of
72.5%, which was only slightly lower than TAP’s 2011-2012 academic year overall attendance of 75%. Interestingly, TAP’s February 2012 attendance for all children was 71%; this is slightly less than the 72.5% attendance for the MP-C.

Attendance in mental health programs for children is affected by a number of factors and is often quite low. Wierzbicki and Pekarik (1993) reported an average dropout rate of nearly 50% across over 100 studies of psychotherapy attrition. Research has shown that factors such as parent education and poverty as significant predictors of mental health program drop out (Stevens, Kelleher, Ward-Estes, & Hayes, 2006). Additionally, McKay and Bannon (2004) point out that other factors such as transportation and caregivers’ personal relationship can affect the retention rates in community-based interventions.

Program attendance of course, is not always under children’s control. Demographic data from the CANS described all of the primary caregivers of the participants as currently struggling with their own mental health conditions and personal preferences that may have influenced their child’s attendance. For example one parent called in her son’s absence (on a day that he was scheduled to be transported to TAP by her from a doctor’s appointment) and said, “I won’t be able to leave the house again to drive him to TAP today”.

The children in this study were also dependent on public transportation (taxis and special school buses) to arrive at TAP and sometimes the transportation companies would not pick them up or forget to drop the children off at TAP and drive them home. And
sometimes problems of the coordination of public and parental transportation, for example, when a child had an after school doctor’s visit, resulted in absence from TAP.

Of course attendance also rests on variables such as parental commitment and motivation (see limitations section p. 60) and child’s distress level. Attendance and retention might also be affected by one of the many stressful factors in the child’s life. In the case of the one early drop-out, the child was experiencing an approaching transition date from TAP and emotional and behavioral challenges in both school and home due to a recent school suspension. During his remaining days at TAP, he repeatedly chose not to participate often segregating himself in a nearby quiet room. TAP teacher-clinicians interpreted his behavior as an early disengagement from any therapeutic activity in the program. Future MP-C programs may need to consider the complexity of variables that affect participation in community-based and after school programs. In this child’s case, motivation to attend MP-C was clearly affected by the larger turmoil in his life. Since a higher attendance rate could affect the effectiveness and helpfulness of MP-C, changes would be made to improve the attendance rates and feasibility of MP-C. Future studies should consider strategies for increasing attendance and motivating active participation by children and parents.

**Program Acceptability**

The program evaluations were very positive, as both children and teachers endorsed the benefits of mindfulness in terms of behavioral and affective changes. The anecdotal and observational evidence further support MP-C as an acceptable program to implement in community-based after school therapeutic and educational settings. All of
the participants rated this program as being ‘Helpful’ or ‘Very helpful’. Each child seemed to take from it a different yet beneficial aspect. For example, John who often runs away from difficult emotions and situations was having a challenging time in MP-C but developed the strength to rejoin the group. This decision made him feel very proud and gave him more self-confidence. Susie found that this program helped her to “not get so caught up in [her] thoughts” and experience the present moment. Molly reported mindfulness especially helping her “relax when [she] feels mad” and demonstrated more positive affect throughout the program. Evan demonstrated an increase in overall awareness and reports that MP-C has been helpful to him in terms of managing fear, anger, social interactions, and challenges at home. Andrew, who struggles with family conflicts especially with his siblings, found the body relaxation exercise especially helpful and has continued to use it when challenges at home arise. These self-statements illustrate children’s reported benefits and applications of MP-C to their awareness of and response to stressors.

The TAP teachers believed MP-C to be successful in helping children on various aspects. Teachers reported both subtle and more substantial changes in children’s affect throughout the MP-C program. At least one of the four TAP teachers reported a change in some aspect of behavior for all of the five participants. The teachers continue to remind the participants to use the mindfulness exercises in TAP when they are facing difficulties, and they report this has helped some of the participants. The TAP director has planned to have the MP-C participants teach other TAP children some of the mindfulness activities. Overall, the teachers found MP-C an acceptable program for children in TAP and plan to continue teaching activities from the program as a part of the TAP curriculum.
Acceptability of program format. The inclusion of the TAP teacher in MP-C facilitated the sustainability of the program. The involvement of a TAP teacher in the program facilitates the potential for the teacher to offer the program exercises to other TAP children. He can also help to remind the participants to use the skills they have learned in MP-C in moments of difficulty and their daily lives. One of the participants commented that he was happy the TAP teacher learned the exercises so that he can help to remind the children to use these skills. It is important that any mindfulness program implemented by an outside teacher be sustainable in the host organization to facilitate the post-program growth of the participants.

The 45-minutes allotted for each session allowed enough time to experience each practice deeply, while not too long as to lose the children’s attention. The general structure of allowing the initial and closing emotional check-in emphasized and facilitated the growth of self-awareness and emotional reflection and understanding. The check-ins also allowed the researchers another qualitative measure to observe throughout the program sessions. The theme of each class gave the participants a concrete understanding of what they would be learning and how they can apply it. The researcher asked the participants to draw with pencils about their experiences in the exercises, which aided in their self-reflection for some participants. Other participants preferred verbally reflecting on their experiences therefore it is important to vary the teaching tools. The present study was generally successful in varying the exercises to maintain engagement. However, the initial sessions covering the breath and the body did not include enough movement or “fun” exercises with which the children could relate. In future programs it
would be helpful to incorporate different child-centered breathing exercises and movement exercises even into these early sessions to capture initial engagement.

MP-C fit well into the TAP schedule. The classes were taught about an hour after the children arrived at TAP and had participated in free time and snack. This helped their involvement in MP-C because they had the opportunity to release their energy from the school day and eat a healthy snack. At the end of the MP-C class the children immediately left for their rides home. The children left with the mindfulness practices fresh and easily retrievable to apply in their home environments, which for many of the participants is the most stressful environment. In future studies it is important to carefully consider the schedule of the after-school program to find the right fit for the mindfulness program classes.

**Attention to Task**

One of the most robust findings of this investigation is the decrease in unrelated or disruptive words or actions over the eight classes. Even though the five participants illustrate various patterns of extraneous speaking or moving, overall they each increased in attention. Measuring extraneous vocal and motor behavior can demonstrate the individual patterns by which children develop attention to the tasks of mindfulness.

The participants in this study either demonstrated systematic changes in off-task activities or idiosyncratic changes. Both Susie and Andrew demonstrated systematic decreases of off-task behaviors across the four observations. In contrast, John, Molly and Evan demonstrated idiosyncratic changes in their extraneous behaviors. John began the first observation with very little non-attentive behaviors; during the second time sample
these behaviors increased greatly. At observation three John’s off-task motor activities decreased, while his verbal disruptive behaviors remained relatively the same as the previous observation. While Molly’s unrelated physical movements were highly variable, her verbal disruptions decreased over the four observation periods. Evan experienced a dramatic decrease in unrelated movements and verbalizations between the third and fourth observation, while during the previous three observations these extraneous behaviors increased. Yet Evan experienced a systematic decrease in his verbal off-task behaviors. Clearly the participants demonstrate variation in their off-task behaviors, yet the general pattern of decrease is quite evident.

**Momentary time-sample.** The momentary-time sample measure is a useful one when the behavior under investigation is not easily counted (Tieghi-Benet, Miller, Reiners, Robinett, Freeman, Smith, Baer & Palmer, 2003); there appears to be no previous published use of this measure in previous studies of mindfulness. Previous mindfulness studies have used self, teacher, and parent-report measures and surveys to measure changes in attention rather than a quantitative observational measure (Zylowska et al., 2008; Semple et al., 2009, Semple & Lee, 2011). Semple and Lee (2011) emphasize the challenge of finding an accurate and easy measure of attention due to the expertise requirements and target behaviors. The momentary time sample may be a useful way to quantify the observations and calculate changes with a sample of attentional behaviors, which is often more reliable than self-report. In a study measuring mindfulness, it is important to find an accurate and clear representation of the change in attention, and the time-sample gives a concrete representation of the changes that can occur. Additionally this measure is very practical because it requires only a trained
observer. The high inter-rater reliability increases the confidence in these data. In the present study due to a limited number of available trained observers, inter-rater reliability was taken on only one observation period for two participants. In future studies it will be important to employ this reliability with all of the study participants. Finally this measure would be relatively easy to implement in either clinical and/or school-based settings.

The momentary time-sample measure also gives more confidence in the qualitative observations. For example, on the day that Molly seemed more focused, engaged and involved, as noted by the research assistant’s qualitative observational notes, was also the day that during her 10-minute time-sample Molly demonstrated less unrelated movements and verbalizations. This demonstrates that the quantitative time-sample data can inform and validate the qualitative observations and vice versa. Therefore its utility was valuable in the present study.

It is important to note that the measure examines a 10-minute observation interval rather than a constant measurement. Therefore, it is only a sample and cannot capture all behaviors. Additionally, the momentary-time sample as applied in the present study did not focus on measuring the change that occurs outside of the program. Yet this study is successful as it relies on observation and moves away from self-reports from children in terms of attention.

**Mindfulness Skills**

Children did not demonstrate a change in mindfulness as measured by the CAMM. This measure demonstrated no particular pattern in the change of scores from pre to post test. Two children demonstrated increased posttest scores, one participant
showed no change, and the other two children demonstrated slight decreases in the posttest scores. There are many possible explanations as to why this measure did not show any overall change in mindfulness.

One explanation of the non-significance can be attributed to the short time period of the program. MP-C was conducted over a period of four weeks, with two classes a week. Additionally, while the attendance and retention rates were high, because the program consisted of 8 classes, foregoing even one class meant missing a significant portion of the program. While learning can still occur with absences, these absences could have limited the ability to change the self-narratives. If children are accustomed responding to questions such as those on the CAMM, (for example, “I push away thoughts that I don’t like”) with specific answers based on their general schemas about their internal experience, four weeks will not be able to change these self-narratives.

Another possible explanation, because MP-C teaches awareness, is that children may have been more aware of their behaviors, even the non-mindful behaviors, after the program. Therefore the children may have responded more accurately on the posttest than during the pretest. In a few children the scores of the CAMM in fact decreased rather than increased which could be explained by a more keen self-awareness of dysfunctional behaviors.

This study demonstrates that a measure such as CAMM may not be useful in an investigation of this length and structure. Using the CAMM as an assessment tool may be more effective with a program that runs over several months. It is probable that skills such as mindfulness and awareness in young developing children might need more
practice and more time for functional and successful application in real life of the skills learned in class. A more concrete and situation-specific version of this survey with questions varying to include settings similar to the afterschool setting, it is possible that the results might demonstrate a change.

Despite this measure’s non-significant findings, qualitative information from children’s self-reports showed, for most of the individuals, verbal statements and drawings that could be interpreted as mindful change.

**Emotional Competence Skills**

Emotional Competence skills did not change significantly between pre and posttest of the mindfulness intervention. Three children demonstrated increased posttest scores, one participant showed no change, and the other child demonstrated a slight decrease in the posttest scores. There are many possible explanations as to why this measure did not show any overall change in emotional competence.

Like the mindful and acceptance measure, one explanation of the non-significance can be attributed to the short time period of the program. The questions in this survey are very broad and do not focus on the subtle ways in which a person may improve his or her emotional competency. In four weeks a child’s schemas cannot change so greatly as to change the way in which one identifies oneself and therefore responds to these broad questions. It will be important to find a measure that asks narrower questions that are more concretely and directly related to the settings familiar to the participants.
As with the CAMM, absences by four of the five children could have affected the results of this measure as well. The absences, while they may not have inhibited the helpfulness of MP-C, may have limited the degree to which the participant could internalize and apply the skills learned in MP-C to their lives. This therefore, could have limited the degree to which the participants’ emotional competency improved on a reportable level.

Despite this measure, the verbal statements, observations, and teacher reports of most of the participants could be interpreted as changes in emotional competence.

**Limitations of this investigation**

**Length of MP-C.** MP-C consisted of 8 classes, twice a week for 4 weeks. This is a very short amount of time for children to learn and be able to internalize a new coping skill such as mindfulness. Mindfulness-based interventions, whether in clinical or educational settings, are generally taught for 8-12 weeks, once a week (Semple & Lee, 2011; Meiklejohn et al., 2012), whereas MP-C was offered twice a week instead of once a week allowing a chance to see the effects of a shorter yet higher frequency program. Although children had the opportunity to experience and learn new mindfulness practices twice a week rather than once, four weeks is may still be too short for deep learning and significant change to occur. A longer program offered twice a week is recommended to offer the repetition and length needed for more lasting change and learning. A longer program will solidify the skills learned in the program and allow children enough time to practice these skills outside of the program and receive support and guidance. Further, it
would be expected that children’s habitual reactions and responses would transform more dramatically with a longer and higher frequency mindfulness program.

**Sample.** The participant sample in this study was limited to available TAP clients, all Caucasian, English-speaking, and of United States ethnicity. This therefore limited the generalizability of the investigation. In the future it will be important to recruit from a larger population to receive a more diverse participant sample. This study included 5 participants and this small number therefore cannot capture the diversity of experiences that a larger sample size could demonstrate. The low number of participants can explain, in part, the non-significance found between the pre and posttest of the two survey measures. The participants demonstrated that MP-C helps the decrease off-task behaviors and increase attention given the momentary-time sample measure, but a larger sample size could give more representative results. Therefore, future replication studies may want to include a larger sample size for more representative results.

**No comparison group.** A compare group in this study was not used due to the limited number of children enrolled in TAP at the time of the study and study time constraints. This study was concerned with the changes occurring within subjects rather than across groups. However, a control group would have provided a baseline understanding for the momentary time-sample measure. While there is a clear decrease in off-task behaviors when looking at both the group averages and the individual participants’ observations, it would be beneficial to know whether these reductions would have occurred in a non-mindfulness group program. A control would also be helpful to know whether the survey assessments are adequate measures to capture change by
comparing the pre and posttest changes of the experimental group with the changes of the control group. In a future replication study, it would be interesting to include a control group enrolled in a non-mindfulness program.

**Assessment measures and implementation.** Both the CAMM and TEIQue were not useful in the application of this study. In both surveys the questions may have been too broad and not specific enough to the situations experienced by these participants to capture the changes that did occur due to MP-C. Additionally, it is also possible that due to the population of these participants, most of them do not have the attention span required to sit and answer these questions, or might have already learned to ”just get through” such required tests and measures that may be an all too frequent part of their treatment. The TAP teachers who administered the pre and posttests commented that some of the participants were not paying attention to the responses they were giving. Therefore, if future studies use questionnaires with this population, it will be important that they are short and contain specific and relatable questions.

**Self-report measure.** At the end of the study the primary investigator sat down with each participant to ask his or her evaluation of the program. The researcher read a series of questions to the participants and transcribed their responses. Due to the fact that the children’s self-reports were conducted with the primary investigator/mindfulness teacher, there is an element of “desire to please” that must be accounted for. The researcher told the participants to respond honestly because their responses will help to improve the program for the future, to eliminate any “desire to please” constraints. However, it is inevitable that some of the children still felt some pressure to provide the
answer he or she thought the researcher would want to hear. Therefore, in the future it will be important to find a neutral interviewer to assist the participants in completing the evaluations.

Additionally, the teachers filling out the program evaluation were not blind to the study’s hypotheses. While all of the teachers committed to responding honestly and objectively, this could have confounded the teachers’ responses as they were aware of the target behavioral changes. In future studies it is important that the teachers remain blind to the hypotheses of the study as to not confound the responses in the program evaluation.

**Caretaker involvement.** Another limitation of this study is the absence of a family/caretaker introduction session and a parallel caretaker program. Past studies have demonstrated that children whose parents were involved experienced greater behavioral improvements than those whose parents were not involved (Lee, 2006). In fact, key components of MBCT-C include parents as an integral part of the program with regular parent-therapist contact before, during, and after (Semple & Lee, 2011). This is because if parents understand why this is an important practice, they will encourage their children to practice mindfulness in the home which will facilitate consistent practice. Overall the TAP program provides children with a number of strategies for handling these mental health challenges, however parental involvement in TAP, as in many community-based programs, is low. Future investigations might explore ways to make parent sessions that meet their needs and availability.

Due to time constraints of this study, the investigator was unable to offer an orientation of MP-C for the families. An information sheet was sent home to the families
recommended for the study and invited parents to contact the primary investigator with questions. Only one out of the 7 families recommended for the study opted to contact the researcher. The one mother who emailed the investigator with concerns also attended the post-program parent night, where only one other mother was present. It could be that her initial email contact with the researcher motivated her to also attend the parent night.

In general TAP experiences challenges with family involvement. It is especially difficult to engage the parents of children at TAP because children arrive and leave TAP using public transportation rather than their families. The TAP program experiences challenges involving the caretakers in the child’s care plan. Parents are rarely present at TAP and due to many different circumstances even when they are invited, very few are able to attend. Therefore, it would be very important in a replication study, to find a way to motivate the families of children in a community-based setting to attend an initial program orientation, and this could possibly motivate more participation in a community-based program in general.

**Future Directions/Modifications**

**Family involvement.** Based on the literature, a challenge that is frequently encountered in mindfulness interventions with children is parent involvement; researchers suggest adding a parent group to the protocol (Semple, Lee, & Miller, 2006). Future studies should investigate different protocols to engage families in the mindfulness practices. One participant in the present study commented, “…My family will change if my sisters and my mother go [to MP-C], because sometimes she [mother] gets over-aggravated with my sisters and me and this would help her [mother] relax”.

Andrew shows that he needs to feel a sense of consistency between the skills he learned at TAP and his experience with his family at home. A simultaneous and required parent group might improve generalization to the home and the family. Also, a parent program will facilitate open dialogue between the parents and the researcher, and, in turn, the engagement of the families.

For many parents of children in community-based settings such as TAP, transportation and time are obstacles that impede family involvement. It will be important for researchers to find a way to increase the families’ contact with the community program. This might mean a program like MP-C would need to add transportation for the entire family and implement reminder calls to the participants’ houses. Parents and children would engage in mindfulness-home practices together to increase the overall consistency of the practice outside of the program. Parents’ involvement may also help to reduce absences during the mindfulness program, which in turn will help to improve the results. The effects of higher family involvement in mindfulness-based interventions for children is a very important element to investigate in future research studies, and would add significantly to the existing literature.

**Individual variables.** There are several individual variables that affect the results and effects of this study and should be considered in future studies including willingness to learn, expectation and demand, homework completion, personality characteristics, and teacher comfort level and development.

**Willingness to learn.** Some children may arrive to a mindfulness program excited and eager to learn the practices, while others might approach it with a sense of skepticism
or disengagement. It is important to recognize these attitudinal variations and try to account for this confounding variable by engaging all of the children. Teachers should help the participant find a personal motivation for mindfulness and help to instill a willingness to learn in each child.

**Expectation and demand.** Children may approach the mindfulness program with a certain set of expectations just as the teacher may enter the program with a certain set of demands. Although not explicit, these expectations and demands have a confounding effect on the results and must be acknowledged. That is why it is important that a third-party interviewer conduct the questionnaire and self-report measures as opposed to the primary investigator as to control for the confounding expectations and demands as much as possible.

**Homework completion.** In this study, homework was encouraged but not required as to not create a stress or anxiety for the children. However, because of this not all children completed their homework for the next class and therefore missed out on the important learning that occurs outside of the classroom. It was clear that Molly, who began doing her home practice before each class, benefited greatly from this practice and experienced the ways in which mindfulness can be applied to her life. Other participants such as Susie did not do this and therefore the mindfulness skills were isolated to MP-C and therefore she did not see the relatability of these skills to her daily life.

**Personality characteristics.** Each child has their own personality characteristics, which inevitably affect the reception and learning of mindfulness. While these personality characteristics cannot be controlled for, it is important to be aware of them
when analyzing the results of these studies. In studies looking at the effects of mindfulness practice in children, a case studies qualitative analysis is important to look at the ways in which certain personality characteristics affect the effects of mindfulness and learn which character may or may not compliment a practice like this.

**Teacher variables.** A teacher’s comfort and experience also present possible confounds. In the present study the investigator’s increasing comfort with the role of teacher and her growing understanding of the participants’ emotional and behavioral styles and needs, resulted in more effective class sessions. Therefore, while a manualized mindfulness program may help validate future MP-C efforts, future research studies also should directly control for experience in classroom management and with clinical populations.

**Conclusion**

Overall, MP-C appears to be feasible and acceptable with this sample of children in a community-based therapeutic after school program. The majority of the participants were able to engage in the class activities, grasp the concepts of mindfulness, and integrate it into their lives outside of MP-C. Attendance and retention rates demonstrate the feasibility of the program while the child and teacher evaluations confirm the acceptability of MP-C. The momentary time-sample illustrated, through the reductions of off-task behaviors, that children experience improvements in attention over the eight MP-C classes. Pre and post measures show no significant impact on the traits, mindfulness or emotional competency, as measured by formal instruments. It is possible that MP-C was too short to affect any changes or that these measures do not capture changes that did
occur. A larger sample size with more response variability can help address the usefulness of such measures in future research. Observations on attention and children’s self-reports, however, provided anecdotal evidence supporting MP-C as a tool to help children manage challenging behaviors and emotions. More research is needed to determine if and how mindfulness can address the needs of children with emotional and behavioral challenges in an after school community-based setting.
References


Mindfulness Practic for Children (MP-C)


Table 1

<table>
<thead>
<tr>
<th>Study</th>
<th>N</th>
<th>Age/grade</th>
<th>Intervention location</th>
<th>Treatment group</th>
<th>Design</th>
<th>Dependent variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ott (2002)</td>
<td>1</td>
<td>9 years</td>
<td>Outpatient clinic</td>
<td>Mindfulness meditation intervention</td>
<td>Qualitative design</td>
<td>Reflux symptoms, medication, sleep quality</td>
</tr>
<tr>
<td>Semple et al. (2005)</td>
<td>5</td>
<td>7-8 years</td>
<td>School</td>
<td>MBCT-C, 6 wks, wkly</td>
<td>Single case pre-post design</td>
<td>Anxiety, internalizing and externalizing behavior</td>
</tr>
<tr>
<td>Singh, et al. (2009)</td>
<td>2</td>
<td>10-12 years</td>
<td>Not stated</td>
<td>Mindfulness training, 12 wks parent, 12 wks child</td>
<td>Experimental design-multiple baseline</td>
<td>Children’s compliance</td>
</tr>
<tr>
<td>Semple et al. (2009)</td>
<td>25</td>
<td>9-13 years</td>
<td>Clinic-based educational setting</td>
<td>MBCT-C, 12 wks, wkly, 90 hrs per session with three month follow-up</td>
<td>Experimental design with randomized cross-lagged design with Waitlist control group</td>
<td>Behavior, anxiety, attention</td>
</tr>
<tr>
<td>Saltzman and Goldin (2008)</td>
<td>74 (39 children, 35 parents)</td>
<td>Grades 4-6</td>
<td>Community setting</td>
<td>Modified MBSR, 8 wks, wkly</td>
<td>Experimental design with waitlist control and pre-post measures</td>
<td>Attention, self compassion, depression, anxiety, mindfulness</td>
</tr>
<tr>
<td>Lee et al. (2008)</td>
<td>25</td>
<td>9-12 years</td>
<td>Community based reading clinic</td>
<td>MBCT-C, 8 wks, wkly</td>
<td>Single case pre-post design</td>
<td>Internalizing, externalizing behavior, anxiety, depression</td>
</tr>
<tr>
<td>Bootzin and Stevens (2005)</td>
<td>55</td>
<td>13-19 years</td>
<td>Clinic</td>
<td>MBSR, 5/6 wks, 6 wk cognitive therapy, light therapy</td>
<td>Single-case design with observation and baseline, post treatment, and 3 &amp; 12 month follow-up measures</td>
<td>Sleep data, substance use, mental health, worry</td>
</tr>
<tr>
<td>Zaylowka et al. (2007)</td>
<td>32; 8 adolescents, 24 adults</td>
<td>Adolescent mean 15.6 years; adult mean 48.5 years</td>
<td>Not stated</td>
<td>Mindful Awareness Practices (MAPs), 8 wks, wkly</td>
<td>Single-case design with pre &amp; post measures</td>
<td>Attention, anxiety, depression</td>
</tr>
<tr>
<td>Singh, et al. (2009)</td>
<td>2 children, 2 mothers</td>
<td>10-13 years</td>
<td>Not stated</td>
<td>Mindfulness meditation, 4 wks, 3 x wkly</td>
<td>Single case design with multiple baseline across participants</td>
<td>Aggressive and non-compliant incidents</td>
</tr>
<tr>
<td>Singh et al. (2009)</td>
<td>3 children, 3 caregivers</td>
<td>17 years</td>
<td>Home-based</td>
<td>Multiple components: mindfulness meditation x 24 months, exercise, food awareness program</td>
<td>Single case design with multiple baseline across participants</td>
<td>Parent-child interactions, compliance</td>
</tr>
<tr>
<td>Bögels et al. (2008)</td>
<td>14 adolescents and parents</td>
<td>11-18 years</td>
<td>Community mental health clinic</td>
<td>MBCT, 8 wks, wkly</td>
<td>Single case design with pre &amp; post test</td>
<td>Goals, behavior, happiness, mindfulness</td>
</tr>
<tr>
<td>Biegel et al. (2008)</td>
<td>102</td>
<td>14-18 years</td>
<td>Outpatient psychiatric clinic</td>
<td>MBSR, 8 wks, wkly, and TAU (treatment as usual)</td>
<td>Experimental design with waitlist control and pre, post, follow-up and observational assessments.</td>
<td>Mental health, global assessment of functioning, stress, psychological symptoms, self-esteem</td>
</tr>
<tr>
<td>Liehr and Diaz (2010)</td>
<td>17</td>
<td>Mean age 9.5 years</td>
<td>Summer camp</td>
<td>15-min class, 5 days/wk, 2 wks. MIndfulschools curriculum</td>
<td>Experimental design with control group receiving health education intervention</td>
<td>Anxiety, depression, sadness</td>
</tr>
<tr>
<td>Kerrigan et al. (2011)</td>
<td>59 adolescents</td>
<td>13-21</td>
<td>Outpatient clinic</td>
<td>8 wks, wkly</td>
<td>Non-control qualitative design</td>
<td>Changes in thinking, experiences, behavior, perceptions, perspectives, sense of self, life orientation, coping skills, mindfulness</td>
</tr>
<tr>
<td>Study</td>
<td>N</td>
<td>Age/grade</td>
<td>Intervention location</td>
<td>Program components</td>
<td>Design</td>
<td>Dependent variables</td>
</tr>
<tr>
<td>-------------------------------</td>
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<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Smalley et al. (unpublished)</td>
<td>44</td>
<td>4-5 years</td>
<td>Pre-school</td>
<td>Mindfulness awareness practices 2 x wkly, 8 wks</td>
<td>Not available</td>
<td>Social skills, temperament</td>
</tr>
<tr>
<td>Napoli et al. (2005)</td>
<td>228</td>
<td>Grades 1-3</td>
<td>School</td>
<td>Mindfulness training, 12 wks parent, 12 weeks child</td>
<td>Experimental design with randomized control group with pre &amp; post measures</td>
<td>Children’s compliance</td>
</tr>
<tr>
<td>Wall (2005)</td>
<td></td>
<td>11-13 years</td>
<td>School</td>
<td>Elements of MBSR and Tai chi</td>
<td>Qualitative design with self-report and observational measures</td>
<td>Not reported</td>
</tr>
<tr>
<td>Beauchemin et al. (2008)</td>
<td>34</td>
<td>13-18 years</td>
<td>School</td>
<td>Mindfulness meditation</td>
<td>Single-case design, with pre &amp; post measures</td>
<td>Anxiety, social skills, academic performance</td>
</tr>
<tr>
<td>Biegel &amp; Brown (2011)</td>
<td>79</td>
<td>Grades 2-3</td>
<td>School</td>
<td>Mindfulness training 5 wks, 3 x wkly, 15 minutes per session</td>
<td>Single-case design, with pre &amp; post measures</td>
<td>Academic achievement, attention capacities, academic engagement, social relatedness, teacher self-efficacy, behavior problems</td>
</tr>
<tr>
<td>Schonert-Reichl &amp; Lawlor (2010)</td>
<td>139</td>
<td>Grades 4-7</td>
<td>School</td>
<td>Mindfulness Education program. Wkly, 40-50 mins per session</td>
<td>Experimental design with waitlist control, pre &amp; post measures for non-control group</td>
<td>Optimism, school and general self-concept, positive &amp; negative emotions, social emotional competence</td>
</tr>
<tr>
<td>Mendelson et al. (2010)</td>
<td>97</td>
<td>Grades 4-5</td>
<td>School</td>
<td>Mindfulness program 4 x wkly, 12 wks, 45 mins per session.</td>
<td>Experimental design with randomized control group</td>
<td>Stress, depression positive and negative emotions, relations with peers and school.</td>
</tr>
<tr>
<td>Napoli et al. (2008)</td>
<td>228</td>
<td>Grades 1-3</td>
<td>School</td>
<td>Attention Academy Program (AAP). 12 Bi-monthly sessions, 24 wks, 45 mins per session</td>
<td>Experimental design with control group</td>
<td>Anxiety and Attention</td>
</tr>
<tr>
<td>Barnes et al. (2004)</td>
<td>73</td>
<td>Grade 7</td>
<td>School</td>
<td>Mindfulness training daily for 3 months</td>
<td>Experimental design with random control group</td>
<td>Blood pressure, heart rate, behavior</td>
</tr>
</tbody>
</table>
### Table 3

*On-going school-based mindfulness curricula (from Meiklejohn et al., 2012)*

<table>
<thead>
<tr>
<th>Program &amp; Developer(s)</th>
<th>Age Group Targeted</th>
<th># Years In Use</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inner Kids Program</td>
<td>Pre-K-8</td>
<td>11</td>
<td>The New ABCs – Attention, Balance &amp; Compassion are taught through games, activities, instruction and sharing. We begin with mindful activities that develop breath awareness, move to activities that develop sensory awareness, and then to activities that develop awareness of thoughts, emotions and worldview. We also play games and activities that heighten awareness of other people’s bodies and other people’s thoughts/emotions, and world-views. In all classes we include activities that promote kindness to self and others as well as patience, generosity, and gratitude. Our work is informed by an always-present theme of community service and compassionate action.</td>
</tr>
<tr>
<td>Susan Kaiser-Greenland</td>
<td></td>
<td></td>
<td><a href="http://www.susankaisergreenland.com">www.susankaisergreenland.com</a></td>
</tr>
<tr>
<td>Inner Resilience Program (IRP)</td>
<td>K-8, plus teachers, parents &amp; administrators</td>
<td>9</td>
<td>The IRP’s mission is to cultivate the inner lives of students, teachers and schools by integrating social and emotional learning with contemplative practice. The mindfulness-based approaches used in IRP help create healthy environments for teaching and learning by assisting both teachers and students to hone the skills of self-regulation, attention, and caring for others. The IRP framework has the following essential ingredients: regular classroom instruction to develop students’ social, emotional and inner life skills; a more mindful approach to behavior and classroom management aligned with Inner Resilience methods; a safe, orderly and peaceful classroom climate which values reflection; mindfulness based practices integrated throughout the curriculum; Inner Resilience workshops that inform and engage parents; professional development for staff on their personal learning of these skills as well as support for implementing this work in the classroom.</td>
</tr>
<tr>
<td>Linda Lantieri</td>
<td></td>
<td></td>
<td><a href="http://www.innerresilience-tidescenter.org">www.innerresilience-tidescenter.org</a></td>
</tr>
<tr>
<td>Learning to BREATHE</td>
<td>Adolescents</td>
<td>4</td>
<td>Learning to BREATHE is a universal school-based prevention program for adolescents which integrates principles of social and emotional learning with mindfulness components of Mindfulness Based Stress Reduction (MBSR) developed by Jon Kabat-Zinn (1990). Its emphasis is presented to students as a way to empower them as they grapple with the psychological tasks of adolescence. Program goals include: enhancing capacity for emotion regulation; strengthening attention; expanding the repertoire of stress management skills; and helping students integrate mindfulness into everyday life.</td>
</tr>
<tr>
<td>Patricia C. Broderick, Ph.D.</td>
<td></td>
<td></td>
<td><a href="http://learning2breathe.org">http://learning2breathe.org</a></td>
</tr>
</tbody>
</table>
### Mindfulness Practic for Children (MP-C)

<table>
<thead>
<tr>
<th>Program</th>
<th>Audience</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning to BREATHE</td>
<td>Adolescents</td>
<td>4</td>
</tr>
<tr>
<td>Patricia C. Broderick, Ph.D.</td>
<td>(USA)</td>
<td><a href="http://learning2breathe.org">http://learning2breathe.org</a></td>
</tr>
<tr>
<td>Mindfulness for Teenagers</td>
<td>Age 14-24</td>
<td>2</td>
</tr>
<tr>
<td>David Dewulf</td>
<td>(Belgium)</td>
<td><a href="http://www.heartfulness.net">www.heartfulness.net</a></td>
</tr>
<tr>
<td>Mindfulness in Schools Project (MiSP)</td>
<td>Age 14-18</td>
<td>3</td>
</tr>
<tr>
<td>Richard Burnett, Chris Cullen, Jini Lavelle</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Learning to BREATHE is a universal school-based prevention program for adolescents which integrates principles of social and emotional learning with mindfulness components of Mindfulness Based Stress Reduction (MBSR) developed by Jon Kabat-Zinn (1990). Its emphasis is presented to students as a way to empower them as they grapple with the psychological tasks of adolescence. Program goals include: enhancing capacity for emotion regulation; strengthening attention; expanding the repertoire of stress management skills; and helping students integrate mindfulness into everyday life.

Program offers Mindfulness Based Cognitive Therapy (MBCT) with elements of Mindfulness Based Stress Reduction (MBSR) including teachings on the physiology of stress and stress within communication. Specific practices taught include mindfulness of: breathing; body sensations; pleasant and unpleasant events; movement; thoughts and emotions.

The backbone of this curriculum is a 9 week course. Core MBSR/MBCT teachings are distilled and made accessible for an adolescent audience. Teachings include: mindfulness of breath, body scan, mindful eating, mindful movement, mindfulness of thought and sound, several variations on the 3 minute silence, & mindful texting. The program is offered during normal school lessons. See the MiSP website for copies of research.
<table>
<thead>
<tr>
<th>Program</th>
<th>Age Range</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mindful Schools</td>
<td>K-12</td>
<td>4</td>
</tr>
<tr>
<td>Megan Cowan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Randima Fernando</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laurie Grossman</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kate Janke</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Richard Shankman</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(USA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><a href="http://www.mindfulschools.org">www.mindfulschools.org</a></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MindUP</td>
<td>Pre-K - 8</td>
<td>8</td>
</tr>
<tr>
<td>Diane Dillon et al</td>
<td></td>
<td></td>
</tr>
<tr>
<td><a href="http://www.thehawnfoundation.org">www.thehawnfoundation.org</a></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[USA]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sfat Hakeshev (The Mindfulness Language)</td>
<td>Ages 6-13</td>
<td>18</td>
</tr>
<tr>
<td>Nimrod Sheinman, parents &amp; teachers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Israel)</td>
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</tbody>
</table>

The mission of Mindful Schools, located in Oakland, California, is to be a leader in integrating mindfulness into education. The program involves direct teaching to students in K–12 schools and through trainings for educators. In their first four years, they have brought an in-class program to over 11,000 children in 41 schools, 71% of which serve low-income students. The 15-session program delivered over eight weeks engages children through lessons including mindfulness of sound, breath, body, emotions, test taking, generosity, appreciation, kindness and caring, and others. They offer parent classes at the schools where they teach and in the coming year will provide a mindfulness manual for parents. They have trained 1,500 educators through a Mindfulness Fundamentals Course, a Curriculum Course, and conferences.

MindUP is a classroom-tested, evidence-based curriculum framed around 15 easily implemented lessons that foster social and emotional awareness, enhance psychological well-being, and promote academic success. MindUp pursues objectives roughly parallel to those of the five-point framework of competencies laid out in the work of the Collaborative for Academic, Social, and Emotional Learning (CASEL). The core practice of MindUP is mindful breathing which is ideally done three times a day (for a few minutes each time) at intervals reflective of classroom culture and needs. The program is currently being used in about 250 schools throughout North America. Research may be found at the MindUP website.

 Goals include: mindful learning (experiential awareness and mind-body practices) as a way to develop cognition, wisdom and skills; guiding students to “stop”, “tune in”, “pay attention to what’s inside”; and teaching constructive rest as a useful catalyst in “cognitive learning”. Methods include mindfulness of: breath, body boundaries, body sensations, postures and movements, sounds, emotions and imagery processes.
<table>
<thead>
<tr>
<th>Mindfulness Practice for Children (MP-C)</th>
<th>88</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Still Quiet Place</strong></td>
<td>Pre-K-12, parents &amp; teachers</td>
</tr>
<tr>
<td><a href="http://www.stillquietplace.com">Still Quiet Place</a> (USA)</td>
<td>This program focuses on developing mindful awareness to support participants in responding rather than reacting to difficult situations, and in cultivating peace and happiness. Mindfulness skills taught include awareness of: breath; body; thoughts; feelings; physical sensations; loving kindness; walking; yoga; mindfulness in daily life; and responding vs. reacting.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Stressed Teens</strong></th>
<th>Ages 13-18</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://www.stressedteens.com">Stressed Teens</a></td>
<td>Mindfulness-Based Stress Reduction for Teens (MBSR-T) is closely related to the traditional MBSR program created by Jon Kabat-Zinn and colleagues. The primary focus is on formal and informal mindfulness practices which include: body scan; walking meditation; sitting meditation; sitting meditation with heartfullness; yoga; mindful stopping; and mindful homework/test taking.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Wellness Works in Schools™</strong></th>
<th>Ages 3-18</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://www.wellnessworksinschools.com">Wellness Works in Schools™</a> (USA)</td>
<td><em>Wellness Works in Schools™</em> is an innovative health and wellness program based on mindful awareness principles and practices. The program responds to contemporary educational challenges by helping students develop the needed skills to address important issues like: stress, mental health, emotional balance, behavior, and learning readiness. <em>Wellness Works</em> embraces a whole person/whole child perspective and is grounded on universal health and wellness principles, validated by contemporary medical and science-based research.</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Gender</td>
<td>Age</td>
</tr>
<tr>
<td>--------</td>
<td>--------</td>
<td>------</td>
</tr>
<tr>
<td>Susie</td>
<td>Female</td>
<td>8-9</td>
</tr>
<tr>
<td>Molly</td>
<td>Female</td>
<td>12</td>
</tr>
<tr>
<td>Evan</td>
<td>Male</td>
<td>10</td>
</tr>
<tr>
<td>Andrew</td>
<td>Male</td>
<td>8</td>
</tr>
</tbody>
</table>
Table 5

*Child Evaluations (quantitative data)*

<table>
<thead>
<tr>
<th>Question</th>
<th>Min</th>
<th>Max</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall, how would you rate the mindfulness program?</td>
<td>4</td>
<td>5</td>
<td>4.8</td>
</tr>
<tr>
<td>This program has been helpful to me.</td>
<td>3</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>I would recommend this program to my friends.</td>
<td>2</td>
<td>5</td>
<td>3.4</td>
</tr>
<tr>
<td>Since being in this program, I feel less worried in my life.</td>
<td>3</td>
<td>5</td>
<td>4.2</td>
</tr>
<tr>
<td>Since being in this program, I feel better able to manage my anger.</td>
<td>3</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Since being in this program, I feel better about how I act with others</td>
<td>3</td>
<td>5</td>
<td>3.8</td>
</tr>
<tr>
<td>Since being in this program, I feel more patient in my life.</td>
<td>3</td>
<td>5</td>
<td>3.6</td>
</tr>
<tr>
<td>This program has helped me in school.</td>
<td>2</td>
<td>5</td>
<td>3.4</td>
</tr>
<tr>
<td>This program has helped me at home.</td>
<td>3</td>
<td>5</td>
<td>3.8</td>
</tr>
<tr>
<td>I will continue to practice mindful awareness in my life after the program is over.</td>
<td>3</td>
<td>5</td>
<td>4.2</td>
</tr>
<tr>
<td>Name</td>
<td>Q11</td>
<td>Q12</td>
<td>Q13</td>
</tr>
<tr>
<td>------</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>John</td>
<td>Doing the activities with you and helping my friends being a good role model and helping them act straight like they do. The bell ringing really helped me.</td>
<td>Nothing.</td>
<td>The walking mindfulness: running &amp; walking, running &amp; walking in a circle.</td>
</tr>
<tr>
<td>Susie</td>
<td>The bell.</td>
<td>The talking about the stuff, like the breathing and stuff.</td>
<td>The snake position.</td>
</tr>
<tr>
<td>Evan</td>
<td>Helping me notice things. Noticing everything.</td>
<td>Nothing was not helpful.</td>
<td>The notice 5 New Things activity.</td>
</tr>
<tr>
<td>Andrew</td>
<td>The tensing and relaxing body exercise.</td>
<td>Nothing.</td>
<td>The biodots.</td>
</tr>
</tbody>
</table>
### Table 7

**Teacher Evaluations**

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Name</th>
<th>Attention</th>
<th>Express feelings</th>
<th>Focus</th>
<th>Coping Skills</th>
<th>Eval_5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cory</td>
<td>John</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>Billy may not even be aware of his own improvements but he has not been a threat to run away at TAP which is obviously a huge deal!</td>
</tr>
<tr>
<td>Susie</td>
<td></td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>NR</td>
</tr>
<tr>
<td>Molly</td>
<td></td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>Megan seems to exhibit better self-esteem</td>
</tr>
<tr>
<td>Evan</td>
<td></td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>NR</td>
</tr>
<tr>
<td>Andrew</td>
<td></td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>Malachy struggles still to vocalize his emotions but he has come a long way in a little time regarding feelings recognition.</td>
</tr>
<tr>
<td>Cara</td>
<td>John</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>Billy has been better able to verbally express his feelings rather than running when upset. He has been a good role model for peers in the group.</td>
</tr>
<tr>
<td>Susie</td>
<td></td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>I recently had a discussion with Toni about problems that have been happening at home and she was more willing to open up about it than she has in the past with me.</td>
</tr>
<tr>
<td>Name</td>
<td>Score</td>
<td>Intensity</td>
<td>Change</td>
<td>Notes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>-------</td>
<td>-----------</td>
<td>--------</td>
<td>-------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Molly</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>Megan has seemed less anxious recently and has used a more polite tone of voice with staff and peers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evan</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>Ethan does not typically open up to staff about what is bothering him and this has remained the same.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Andrew</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>I have spent very little time with Malachy recently, so I can't speak to any changes that have happened. In the past, Malachy has been very reserved and does not open up about feelings or what is bothering him.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Krysten</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>William used to get upset and run away or speak out. Now he stays calm and expresses his feelings verbally. He understands how to cope and maintain his self-composure.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>John</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Susie</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>NR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Molly</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>Megan has always struggled with talking about feelings. Often times she becomes guarded and has a tendency to give others a lot of attitude. Megan has appeared more happy/smiling, laughing, being more calm. She has not been giving nearly as much attitude.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Mindfulness Practice for Children (MP-C)**

<table>
<thead>
<tr>
<th>Name</th>
<th>Score 1</th>
<th>Score 2</th>
<th>Score 3</th>
<th>Score 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evan</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>NR</td>
</tr>
<tr>
<td>Andrew</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>NR</td>
</tr>
<tr>
<td>Jen</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>John</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Susie</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Molly</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Evan</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Andrew</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

He has shared more about what happens at school and how he is feeling. He has gotten into arguments with peers from time to time but has more tolerance, stays in the room, allows staff interventions, and has quick recovery time.

Toni has continued to exhibit hyperactive behaviors; however, she has been easily redirected and has shown increased insight.

Megan has been more open and has expressed that she has taught her brother the techniques as well.

Ethan has missed some sessions, but I think they were a benefit to him. He is aware of his surrounding and is less sensitive it seems to staff feedback.

Malachy has been more interactive with others since the program began. He smiles more and is able to focus more.
<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest (n=5)</td>
<td>51.6</td>
<td>8.295</td>
<td>0.422 (ns)</td>
</tr>
<tr>
<td>Posttest (n=5)</td>
<td>55.2</td>
<td>10.803</td>
<td></td>
</tr>
</tbody>
</table>
Table 9

*Results of the CAMM Wilcoxon Signed Rank Test*

<table>
<thead>
<tr>
<th></th>
<th>Md</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest (<em>n=5</em>)</td>
<td>49</td>
<td>0.465 (ns)</td>
</tr>
<tr>
<td>Posttest (<em>n=5</em>)</td>
<td>57</td>
<td></td>
</tr>
</tbody>
</table>
Table 10

*Results of the TEIQue-CSF Paired t-test*

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>122.8</td>
<td>14.202</td>
<td>0.939 (ns)</td>
</tr>
<tr>
<td>Posttest</td>
<td>123.2</td>
<td>14.822</td>
<td></td>
</tr>
</tbody>
</table>
Table 11

*Results of the TEIQue-CSF Wilcoxon Signed Rank Test*

<table>
<thead>
<tr>
<th></th>
<th>Md</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest (n=5)</td>
<td>120</td>
<td>0.715 (ns)</td>
</tr>
<tr>
<td>Posttest (n=5)</td>
<td>121</td>
<td></td>
</tr>
</tbody>
</table>
Figure 1

*MP-C Classroom Setting*
Figure 2

Each Participant occurrence of any off-task behavior
Figure 3

*Entire Group Mean of Any Off-Task Behavior*
Figure 4

*Each Participant Motor Off-Task Behaviors*
Figure 5

*Each Participant Vocal Off-Task Behavior*
Figure 6

*Molly’s Mindful Thinking Exercise Drawing*
Figure 7

*Molly’s Mindful Eating Drawing Exercise Drawing*

I don't like raisins but when I ate the slow the kind of tasted good but when I ate it fast I did not like it.

Slow  fast

Yum  uck
Molly’s Mindful Yoga Exercise Drawings

Mindful Yoga Positions Pictures

It made me feel good to do yoga stuff.

Downward facing dog

Butterfly

Tree

Cobra

Cat and cow
Figure 9

Molly’s ‘Seeing Five New Things’ Drawing

1. Vase with heart
2. Number 13
3. Tissue box on tv
4. Box on table
5. Paper with rainbow on it

Blue-Clam
Figure 10

*Molly’s ‘Sun in My Heart’ Drawing*
Figure 11

*Molly’s Home Practice Reflection Drawing*

Tuesdays

I did the down word's
dog when I was mad
at my brother.

It me feel happy
and not mad at
him. It made me
calm down.
Figure 12

Molly’s Mindfulness Definition

Mindfulness means to relax when I am mad, and to think about what is happening now and don’t worry about what is going to happen. But sometimes it is okay to think about what is going to happen.
Andrew’s Mindfulness Definition

mindfulness is noticing what’s happening.
Appendix A

*Parental Consent Form*

Dear _____________,

I am writing to ask your consent to have your child, __________ ____________, in a class that teaches emotional awareness. This class can help children to understand their thoughts and their reactions to events in their lives and give skills to help make better choices in their behavior. Studies tell us that children benefit from, and seem to enjoy, learning these activities based on a method to teach inner awareness that is called Mindfulness practice. Wheaton College’s Education students are teaching these mindfulness practices in local schools, including Norton & Attleboro.

I have been practicing mindfulness since I was six years old. During my internship last year with TAP, I asked if TAP might be interested in exploring mindfulness techniques for use in the after-school program. Jen Schwarz encouraged me to propose a pilot study as my senior honors thesis at Wheaton College. So she and I along with my research supervisor, Prof. Grace Baron, of Wheaton College’s Psychology Department ask your consent for your child’s participation.

Here is some more information about this pilot investigation and what will be asked of your child:

**What is mindfulness?**

Mindfulness is a tool to help people understand their thoughts and their reactions to events in their lives and give skills to help make better choices in their behavior. It can teach children to:

- Approach life with curiosity and an open mind
- Calm down when they are angry and upset
- Concentrate and ignore distractions

Classes will include activities to teach self-awareness and self-control through breathing, eating, movement, and thinking.

**Why teach mindfulness practices to your child at TAP?**

We hope that mindfulness practices might add to the menu of coping skills TAP children can use to learn and practice self-management.

**When will this class be held?**

This class will begin on January 11th, 2012 for four weeks on Wednesdays and Fridays with a booster session and a program completion ceremony in February or March that you can attend. One TAP teacher and a Wheaton College research assistant will work with me to teach and take notes during the mindfulness classes.
Before the classes begin and after they are done, I will ask your child some questions to measure your child’s emotional awareness and mindfulness skills. Your child’s participation in the study is completely confidential. S/he will never be identified in any writing or speaking that I do about this research. I am interested in the group responses to the program; your individual child’s progress is something that you can discuss with the TAP staff as needed. One audiotape that I will make during one session as well as survey responses will be destroyed after the study is completed to protect your child’s identity and security. Your child’s participation is voluntary, and we will tell the child about this class before we begin. S/he can choose to not participate in this study at any time.

While children typically find mindfulness practices both easy and fun, some mindfulness exercises might trigger unpredictable emotional responses. Should this happen with your child, TAP staff will be available to help your child as they do in all TAP programs.

This study can benefit you and your child in that your child could leave this study with new coping skills to use as a self-help practice in daily situations. At the end I will welcome you to a parent session to learn about this program and have your children show you what they have learned.

Please complete the form below and return it to Jen Schwarz at TAP.

If you have any questions about participation please do not hesitate to contact me, Liza Detenber, or my co-supervisors, Professor Grace Baron or Jennifer Schwarz.

Contact Information:
Liza Detenber, ph: 413-427-7011, email: lizadetenber@gmail.com
Grace Baron, Ph.D. Professor of Psychology, Wheaton College, ph: 508-286-3689, email: gbaron@wheatonma.edu
Jennifer Schwarz, M.A, ph: (508) 223-4109, email: jschwarz@communitycareservices.org

I have read the above description and understand the expectation of participation.
___ I agree to let my child participate ___ I do not agree to let my child participate

____________________________ ____________________
Parent/Guardian’s Signature Date

____________________________
Parent/Guardian’s PRINTED NAME
Appendix B

Student Assent Form

1. My name is Liza Detenber. You may know me because I helped out at TAP last year.

2. I am leading a practice that teaches you how to pay attention to what your mind is thinking and how your body feels and how to become aware of your emotions. This is called mindfulness. Children can learn to do this, I know, because I learned it and began practicing it when I was six years old.

3. If you agree to join this group, I along with a teacher from TAP and another Wheaton college student will lead you in a class for __ weeks that helps you practice mindfulness. We will talk, use our imaginations, draw, write, move, and eat together in these sessions. I will ask you to some questions in the beginning and the end of the program, and tape record your answers. These questions will be about your thoughts and how your body feels.

4. If you have questions about this program, you can ask me at any time. If you decide that you do not want to finish the program with me, you can stop at any time and no one will be upset.

5. Signing your name below means that you agree to join this group. If you do not want to be in this group, please do not sign the paper.

____________________________________________
Signature of Student

___________________
Date

____________________________________________  
Signature of Researcher  

___________________  
Date
Appendix C

Child an Adolescent Mindfulness Measure (CAMM)

Child Acceptance and Mindfulness Measure (CAMM)

Author: Laurie A. Greco, S. E. Dew & S. Baer

The CAMM is a 25-item measure of mindfulness and assesses the degree to which children and adolescents observe internal experiences, act with awareness, and accept internal experiences without judging them.

Scoring: Respondents are asked to indicate how true each item reflects their experience using a 5-point scale ranging from 0 (Never true) to 4 (Always true). A total acceptance-mindfulness score can be generated by reverse scoring negatively worded items (see below) and summing the item total, yielding a possible range in scores from 0-100. Higher scores indicate higher levels of acceptance and mindfulness.

Reverse-scored items: 2, 4, 5, 7, 8, 10, 11, 15, 16, 17, 18, 19, 20, 21, 25

Reliability: The CAMM demonstrates good internal consistency, with Cronbach’s alpha = .87.

Validity: Research using the CAMM suggests the measure has good concurrent validity.

Reference:

### CAMM

(GRECO, DEW, & BAER, 2005)

We want to know more about what you think, how you feel, and what you do. Read each sentence. Then, circle the number that tells **how often** each sentence is **true for you**.

<table>
<thead>
<tr>
<th></th>
<th>Never True</th>
<th>Rarely True</th>
<th>Sometimes True</th>
<th>Often True</th>
<th>Always True</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
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<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
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<td>7.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
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<td>8.</td>
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</tr>
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<td>9.</td>
<td>0</td>
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<td>2</td>
<td>3</td>
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</tr>
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<td>3</td>
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<td>12.</td>
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<td>13.</td>
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</tr>
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<td>14.</td>
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<td>16.</td>
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</tr>
<tr>
<td>17.</td>
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<td>18.</td>
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<tr>
<td>19.</td>
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<tr>
<td>20.</td>
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<tr>
<td>21.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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</tbody>
</table>

*Revised date (4 October 2006)*
<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>22. I notice when my feelings begin to change.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>23. I pay close attention to whatever is happening right now.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>24. I notice how things around me smell.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>25. I stop myself from having feelings that I don’t like.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Revised date (4 October 2006)
Appendix D

**Trait Emotional Intelligence Questionnaire-Child Short Form (TEIQue-CSF)**

**Trait Emotional Intelligence Questionnaire-Child Short Form**

S. Mavroveli & K.V. Petrides, Institute of Education, University of London

**INSTRUCTIONS:**

- Please remember there are no right or wrong answers.
- Work as quickly as possible and do not think too much about the questions.
- Circle the answer that you believe describes you best.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Disagree completely</td>
<td>Disagree</td>
<td>Neither agree nor disagree</td>
<td>Agree</td>
<td>Agree completely</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Disagree completely</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Agree completely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I always try to be in a good mood.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>I like meeting new people.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>I find it hard to get used to a new school year.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>I feel great about myself.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>When I feel sad, I try to do something to change my mood.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>I often feel sad.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>If I’m happy with someone, I will tell them.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>I get along with everyone.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>I often feel angry.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>The kids at school like playing with me.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>When I’m in a new place, I get used to it quickly.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
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<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>12.</td>
<td>Often, I’m not happy with myself.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13.</td>
<td>Many times, I don’t think before I do something.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14.</td>
<td>I’m very good at understanding how other people feel.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15.</td>
<td>I don’t like trying hard for something.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16.</td>
<td>It’s easy for me to understand how I feel.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17.</td>
<td>If I have to do something, I know I can do it very well.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18.</td>
<td>I get angry very easily.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19.</td>
<td>I try to do my homework as well as I really can.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20.</td>
<td>It’s easy for me to talk about my feelings.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>21.</td>
<td>I don’t like waiting to get what I want.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>22.</td>
<td>I’m a very happy kid.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>23.</td>
<td>I don’t like studying hard.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>24.</td>
<td>I think I may be sad when I grow up.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>25.</td>
<td>Most people like me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>26.</td>
<td>I think very carefully before I do something.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>27.</td>
<td>I’m not good at controlling the way I feel.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>28.</td>
<td>I get used to new people very quickly.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>29.</td>
<td>I can’t find the right words to tell others how I feel.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>30.</td>
<td>I don’t like trying out new things.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>31.</td>
<td>I like being with other people.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>32.</td>
<td>I know how to show to others how much I care about them.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>33.</td>
<td>I’m often confused about the way I feel.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>34.</td>
<td>I find it difficult to understand what others are feeling.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>35.</td>
<td>If I don’t do something well, I don’t like trying again.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>36.</td>
<td>Usually, I think very carefully before I talk.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Appendix E

Momentary Time-Sample Form

### Momentary Time Sampling Form

**Student’s Name:** ___________________  **Date(s):** ___________________

**Behavior Definition** *(in specific, observable, measurable terms):*

________________________________________________________________________

**Total Observation Time:** __________  **Length of each interval:** __________

<table>
<thead>
<tr>
<th>Interval #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
</tr>
<tr>
<td>M</td>
</tr>
<tr>
<td>V</td>
</tr>
</tbody>
</table>

Observer’s notes:
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

<table>
<thead>
<tr>
<th>Interval #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
</tr>
<tr>
<td>M</td>
</tr>
<tr>
<td>V</td>
</tr>
</tbody>
</table>

Observer’s notes:
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Appendix F

Child Evaluation Questionnaire

Mindfulness Practice for Children
Child Evaluation Questionnaire

Name_______________________________ Date________________

Please circle the answer that best describes your experience (or use the thermometer to mark which number best represents your experience).

There are no right or wrong answers.

1. Overall, how would you rate the mindfulness program?
   1. Very unhelpful
   2. Unhelpful
   3. Neutral/Not sure
   4. Helpful
   5. Very helpful

2. This program has been helpful to me.
   1. Strongly disagree
   2. Disagree
   3. Neutral/Not sure
   4. Agree
   5. Strongly Agree

3. I would recommend this program to my friends.
   1. Strongly disagree
   2. Disagree
   3. Neutral/Not sure
   4. Agree
   5. Strongly agree
4. Since being in this program, I feel less worried in my life.
   1. Strongly disagree
   2. Disagree
   3. Neutral/Not sure
   4. Agree
   5. Strongly Agree

5. Since being in this program, I feel better able to manage my anger.
   1. Strongly disagree
   2. Disagree
   3. Neutral/Not sure
   4. Agree
   5. Strongly agree

6. Since being in this program, I feel better about how I act with others.
   1. Strong disagree
   2. Disagree
   3. Neutral/Not sure
   4. Agree
   5. Strongly agree

7. Since being in this program, I am more patient in my life.
   1. Strong disagree
   2. Disagree
   3. Neutral/Not sure
   4. Agree
   5. Strongly agree

8. The program has helped me in school
   1. Strong disagree
   2. Disagree
   3. Neutral/Not sure
   4. Agree
   5. Strongly agree
9. The program has helped me at home
   1. Strong disagree
   2. Disagree
   3. Neutral/Not sure
   4. Agree
   5. Strongly agree

10. I will continue to practice mindful awareness in my life after the program is over.
   1. Strong disagree
   2. Disagree
   3. Neutral/Not sure
   4. Agree
   5. Strongly agree

As best you can, please complete the following statements:

11. The most helpful part of the program was ________________________________
    _____________________________________________________________
    _____________________________________________________________
    _____________________________________________________________
    _____________________________________________________________

12. The least helpful part of the program was ______________________________
    _____________________________________________________________
    _____________________________________________________________
    _____________________________________________________________
    _____________________________________________________________

13. The most helpful activity was______________________________
14. The least helpful activity was ______________________________

____________________________________________________________________________________________
____________________________________________________________________________________________
____________________________________________________________________________________________
____________________________________________________________________________________________

15. When I look back on the past four weeks in the program I feel ____________

____________________________________________________________________________________________
____________________________________________________________________________________________
____________________________________________________________________________________________
____________________________________________________________________________________________

16. I will miss __________________________________________

____________________________________________________________________________________________
____________________________________________________________________________________________
____________________________________________________________________________________________

17. I will look forward to ________________________________

____________________________________________________________________________________________
____________________________________________________________________________________________
____________________________________________________________________________________________

18. In the future, I hope that I will ________________________

____________________________________________________________________________________________
____________________________________________________________________________________________
____________________________________________________________________________________________
Appendix G

Teacher Evaluation Questionnaire

Mindfulness Practice for Children
Teacher Evaluation Questionnaire

Child_________ Teacher_____________________

During the past four weeks this child has taken part in 8 classes to teach MP-C. We are interested in your observations of how the child is doing right now in the TAP program. We’ve targeted the behaviors in the questions below and know that MP-C is but one of the strategies that TAP uses to teach coping.

How would you rate this child on the following:

I. How the child is doing right now

1. S/he pays close attention to what s/he is doing.
   0  1  2  3  4

2. Since being in this program the child is able to express how s/he feels appropriately.
   0  1  2  3  4

3. S/he is able to stick to and focus on TAP activities.
   0  1  2  3  4

4. S/he easily uses coping skills to handle problems.
   0  1  2  3  4

II. Can you share any other observations about changes in this child during these four weeks?