

Mindfulness-Based Intervention for Primary School Aged Children

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Abstract

Early intervention for children with psychological problems reduces the risk of long-term negative outcomes. Treatment programs that target children from disadvantaged backgrounds require special attention because these children are at greater risk of psychological problems and have less access to mental health services. Evidence regarding the effectiveness of mindfulness-based treatments for children is emerging. These treatments emphasise experiential processes, which may be of particular benefit for children from disadvantaged backgrounds. The following study comprised two phases with the initial phase being a pilot study where an adult mindfulness-based cognitive therapy program was adapted for nine Grade 6 children who attended a Primary School in a socially disadvantaged and culturally diverse area of Melbourne. Results of this pilot study indicated that the program was both feasible and acceptable for this population of children. Evaluations of this study were used to refine a mindfulness-based intervention (MBI). The MBI was evaluated in the second and main phase of the study involving 76 children aged between 8 and 12 years from the same Primary School. A hierarchical design with cluster randomisation methodology was used to compare the benefits of the refined MBI to a Relaxation Training (RT) program and an Active Control (AC, i.e., a teacher run nonspecific health and wellness program). Results showed significant pre- to post-test improvements in self-report and teacher informant anxiety levels, self-report depressive symptoms and teacher informant attention problems for both the MBI group and the RT group when compared with the AC group with medium to large effect sizes. The results for the MBI group showed a significant improvement in a measure of self-concept compared to both the AC and RT groups. The study provides support for the benefit of this adapted MBI for children from disadvantaged backgrounds in reducing anxiety, depression and attention problems with the additional benefit of improving self-concept. Further testing of mindfulness to help temper psychological symptoms in disadvantaged children is warranted to advance these initial and promising findings.

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Declaration

I declare that this thesis is my own account of my research and does not contain work that had been previously submitted for a degree at any institution or for publication, without due acknowledgement.

X

Emma Louise Butler

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Table of Abbreviations

AC	Active control
ACT	Acceptance and commitment therapy
ADHD	Attention deficit hyperactivity disorder
A-MAAS	Adapted Mindfulness Attention Awareness Scale (Brown & Ryan, 2003)
APA	American Psychiatric Association
BECK	The Beck Youth Inventories of Emotional and Social Impairment Second Edition (Beck, Beck, Jolly, & Steer, 2005)
CBCL/6-18	Child Behavior Checklist for Ages 6 to 18 Years (Achenbach, 2001a)
CBT	Cognitive behavioural therapy
CD	Conduct disorder
CDS	Children's Depression Scale (Lang & Tisher, 1983)
Cog State	Cog State Chase Test (Cog State, 2007)
CVS	The Crichton Vocabulary Scale (Raven, 1988)
DBT	Dialectical behaviour therapy
DSM-IV-TR	Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (American Psychiatric Association, 2013)
GAD	Generalized anxiety disorder
MAAS	Mindfulness Attention Awareness Scale (Brown & Ryan, 2003)
MBCT	Mindfulness-based cognitive therapy
MBI	Mindfulness-based intervention
MBST	Mindfulness-based stress reduction
MDD	Major depressive disorder
MPP	Mindfulness pilot program
NATSEM	National Centre for Social and Economic Modelling

ODD	Oppositional defiant disorder
RPM	The Raven's Progressive Matrices (Raven, 1988)
RSA	Respiratory sinus arrhythmia
RT	Relaxation training
TRF/6-18	Teacher Report Form for Ages 6 to 18 Years (Achenbach, 2001b)

Table of Variable Abbreviations

Anxiety	Anxiety T-score from the Beck Youth Inventories Second Edition (Beck, Beck, Jolly, & Steer, 2005)
Cog state	Overall reaction time test scores from four Cog State Chase Test trials (Cog State, 2007).
Depression	Depression T-score from the Beck Youth Inventories Second Edition (Beck, Beck, Jolly, & Steer, 2005)
Mindfulness	Total score from Adapted Mindfulness Attention and Awareness Scale (Brown & Ryan, 2003)
Parent affective	DSM orientated affective T-score from Child Behavior Checklist for Ages 6-18 (Achenbach, 2001a)
Parent anxiety	DSM orientated anxiety T-score from Child Behavior Checklist for Ages 6-18 (Achenbach, 2001a)
Parent attention	Attention problem T-score from Child Behavior Checklist for Ages 6-18 (Achenbach, 2001a)
Parent internalising	Child Behavior Checklist for Ages 6 to 18 Internalizing T Score
Pleasure	Total score from Pleasure and Enjoyment Scale from the Children's Depression Scale (Lang, & Tisher, 1983) adapted for the present study.
Self-concept	Self-concept T-score from the Beck Youth Inventories Second Edition (Beck, Beck, Jolly, & Steer, 2005)
Teacher affective	DSM orientated affective T-score from Teacher Report Form for Ages 6-18 (Achenbach, 2001b)
Teacher anxiety	DSM orientated anxiety T-score from Teacher Report Form for Ages 6-18 (Achenbach, 2001b)
Teacher attention	Attention problem T-score from Teacher Report Form for

Ages 6-18 (Achenbach, 2001b)

Teacher internalising Teacher Report Form for Ages 6 to 18 Internalizing T Score

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Chapter 1

Introduction and Overview of Thesis

Behavioural and emotional problems during childhood often cause long term difficulties for children and their families. Such problems include externalising behaviours (e.g., aggression, oppositional behaviour, hyperactivity) and/or internalising behaviours (e.g., anxiety and depression) or attention problems. Historically, child psychopathology research has received limited attention compared to adult psychopathology (Kazdin, 1993). Research shows that half of all lifetime cases of mental illness begin by age 14 (Kessler, Chiu, Demler, Merikangas, & Walters, 2005). It is now recognized that the early identification of these problems and appropriate intervention reduces the risk of children developing long-term mental health issues (Hemphill & Littlefield, 2001). This highlights the need for research on effective treatments for children (Kessler et al., 2005). Research on the efficacy and effectiveness of psychological treatments for children has shown less than satisfactory outcomes compared to those for adults (Weisz, McCarthy, & Valeri, 2008).

Research on the effectiveness of existing treatment programs for children from disadvantaged backgrounds (e.g., culturally diverse, non-English speaking backgrounds, and/or low socioeconomic status) is also lacking (Spokas, Rodebaugh, & Heimberg, 2008). This is concerning because children from disadvantaged backgrounds are at greater risk of the negative consequences of psychopathology (Spokas, Rodebaugh, & Heimberg, 2008). Specifically, these children are more likely to experience stress and social disadvantage, and are at greater risk of mental health problems than the general population (Sawyer, 2008; Yamamoto, Silva, Fewrari, & Nukariya, 1997).

Cognitive Behavioural Therapy (CBT) is moving into a third wave that incorporates the principle of mindfulness (Baer & Krietemeyer, 2006). Treatment approaches involving mindfulness are thought to improve a person's ability to perceive his/her environment in the present moment without judgement or evaluation (Baer & Krietemeyer, 2006). To date, these approaches have been incorporated into a number of different treatment interventions, including: mindfulness – based stress reduction

(MBSR; Kabat-Zinn, 1982, 1990); mindfulness-based cognitive therapy (MBCT; Segal, Williams, & Teasdale, 2002); dialectical behaviour therapy (DBT; Linehan, 1993); and acceptance and commitment therapy (ACT, Hayes, Strosahl, & Wilson, 1999). There is now good evidence to support the use of these interventions to reduce stress, anxiety, depression and improve health, self-esteem and general wellbeing in adults (Baer, 2003; Grossman, Niemann, Schmidt, & Walach, 2004).

Mindfulness-based intervention (MBI) has been incorporated increasingly into clinical practice to improve mental health problems in adults. It has been suggested that MBI may also be well suited to children because their personalities are already well aligned with the qualities of mindfulness. These qualities include being non-judgmental, trusting, accepting and having a “beginner’s mind” (O’Brien, Larson, & Murrell, 2008). These qualities are considered the attitudinal foundation of mindfulness practice (Kabat-Zinn, 1990). Accumulating research indicates that MBI is feasible and acceptable as a treatment approach for children (Burke, 2009). MBI may be particularly beneficial to children from disadvantaged backgrounds because these approaches are less reliant on didactic teaching processes that are traditionally used in many CBT therapies (Coholic & Eys, 2011). MBIs comprise experiential activities that provide children with the opportunity to actively cultivate qualities of mindfulness without the language demands associated with more traditional treatments (Semple & Miller, 2006).

The available research indicates that MBI may be effective in reducing negative psychological symptoms, including mood problems, anxiety, poor attention, and low self-concept (Black, Milam, & Sussman, 2008; Burke, 2009). However, much of this research has lacked the inclusion of randomized controlled designs or active control groups (Black et al., 2008; Burke, 2009; Greenberg & Harris, 2011). In addition, there are no known studies that have compared the benefits of MBI to other psychological treatment approaches in children (Black et. al., 2008; Burke, 2009; Greenberg & Harris, 2011). Further research looking into the benefits of MBI in children, making comparisons to active control groups and other available treatments is therefore required. For example, MBI programs could be compared to treatments that involves involve predominately relaxation training (e.g. progressive relaxation) to identify the unique contributions of mindfulness practice (e.g., Ortner, Kilner, & Zelazo, 2007). Pre to post-test measurement of mindfulness constructs is also required to better understand the way that MBI benefits children (Coyne, Cheron, & Ehrenreich, 2008).

Outline of Thesis

The thesis reports the findings of two studies. The first is a small pilot study looking at the feasibility and acceptability of running an adapted MBI program for disadvantaged children. The second larger study was a cluster randomised controlled trial, looking at the effectiveness of MBI in ameliorating mental health symptomology in children. The studies were both conducted in a Victorian State Government primary school setting in the Western metropolitan area of Melbourne, Australia. The children who participated in the study were aged 8 to 12 years, predominately from low socioeconomic status families and culturally diverse backgrounds. A MBI was specifically adapted for these children from an adult program (MBCT) and was initially tested for feasibility and acceptability in the pilot phase. Children with at risk or clinical symptom levels of mental health problems were then selected from the same primary school to participate in the larger cluster randomised controlled study comparing the effectiveness of MBI to Relaxation Training (RT) and an Active Control (AC) in improving mental health symptomology in these children.

Chapter 2 begins with an overview of the history of child psychopathology research and presents the recent findings in this area, outlining prevalence, long term negative consequences, and current trends in the assessment and classification approaches. The dimensions and categories of psychological problems prevalent in childhood are examined, including anxiety, mood, and attention problems. Chapter 2 concludes with a brief discussion highlighting the importance of child psychotherapy research for children from disadvantaged backgrounds.

In Chapter 3, an overview of psychological treatment approaches for childhood mental health problems is provided with an emphasis on the application of CBT for children. The history of CBT and current evidence for its effectiveness and/or efficacy in the treatment of prevalent disorders in childhood are discussed. Although there is some evidence that these programs may be effective for children, access to mental health programs is limited for children, especially those from disadvantaged backgrounds. The methodological issues in treatment studies relevant to children are also reviewed with recommendations for improving experimental designs in such studies.

Chapter 4 introduces mindfulness as the new wave or movement of CBT that represents a paradigm shift in non-judgmental present moment observations of intrapersonal and extra-personal experience. This differs from traditional CBT strategies that seek to change these internal and external experiences. MBI approaches that have been found to be effective in the treatment of adult mental health issues are discussed and compared. The mechanisms of action by which MBI improves mental health are discussed in detail. Finally in this chapter, the published evaluations of MBI for children are reviewed with the previous discussion on methodological issues in mind.

Chapter 5 presents a rationale and aims for the two phased study. Chapter 6 presents phase one of the study (i.e., pilot study) where a MBI was adapted for children from an existing adult program. Chapter 6 includes the aims, hypotheses and methodology of the pilot study. The results are then reported and discussed with an emphasis on the changes made to the program and the research methodology for phase two.

Chapter 7 begins with an outline of the aims and hypotheses for second phase of the study (i.e., main study). This chapter provides a description of the methodology used in the main study. Chapter 8 reports details of data preparation and analysis procedures and the results for the main study, which is organised according to the dependent variables of interest (e.g., anxiety, depression, self-concept, attention, pleasure, mindfulness). In Chapter 9, the final chapter, results are discussed in light of previous research and methodological strengths and limitations of the present research. The thesis concludes with recommendations for future research.

Chapter 2

Child Psychopathology

Historically, research on psychopathology has focused on adults rather than children. One reason for this is that early experts such as Benjamin Rush (the first American Psychiatrist) initially argued that children were less likely to suffer from mental illness due to the immaturity of their developing brains, which protected them from retaining the mental events that caused insanity (Silk, Nath, Siegel, & Kendall, 2000). Much of the early knowledge about child psychopathology was consequently extrapolated from theory and research on adult disorders. As a result, the origins of child psychopathology stem from a historical knowledge base of atheoretical, unsystematic, and fragmented research (Silk et al., 2000).

In recent years, research interest in child psychopathology has followed an increasing awareness of the significance of mental health problems in children. Sawyer et al. (2008) conducted a national survey on the mental health and wellbeing of Australian children ($N = 4,500$) aged between 4 and 17 years. Contrary to historical assumptions, the prevalence rates of mental disorders in Australian children were actually high. In this study, the combined prevalence of three common mental disorders (including major depressive disorder [MDD], conduct disorder [CD] and attention-deficit/hyperactivity disorder [ADHD]) in children was 14% (Sawyer et al., 2008).

The deleterious consequences and pervasive nature of mental health problems in children is also becoming more apparent. Results from Sawyer et al. (2008) indicated that there was a strong association between mental health problems and poorer quality of life and health related problems in children. For example, children with mental health problems had lower self-esteem and functioned less well in school and social activities, and were at increased risk of suicidal behaviour. Mental health problems in young people also had a significant negative impact on the lives of parents and families (Sawyer et al., 2008).

The majority of children identified as having mental health problems continue to experience problems in adulthood, although the presentation of their difficulties manifests differently over time (Loeber, & Farrington, 2000). Recent research shows that half of all lifetime cases of mental illness begin by age 14 (Kessler et al., 2005).

Early identification of mental health problems in children and appropriate intervention are fundamental for ensuring better mental health outcomes over time (Dadds et al. 1997; Greenberg, Domitrovich, & Bumbarger, 2001; Kessler et al., 2005).

It is no longer considered appropriate to extrapolate from adult psychopathology therapy research to children. Child psychopathology requires separate attention as an area of research because what is understood about adults is not necessarily true for children. This is because children are constantly changing in cognitive, emotional and physical domains, and are embedded in the context of their families (Kazdin, 1993; Silk et al., 2000). For these reasons, child psychopathology has become a rapidly growing and independent area of research (Rapport, Kofler, Bolden, & Sarver, 2008).

Assessment in Child Psychopathology

Historically, child psychopathology research has been difficult to review due to inconsistency and vagueness in the ways researchers referred to cases and their features. In many earlier treatment studies, children were referred to informally as “emotionally disturbed”, “impulsive” or “socially withdrawn”. Although these terms implied that the children suffered impairment, the severity, duration, and scope of dysfunction was unspecified. The lack of specific and consistent information about participants in child research limited the degree to which findings from different studies could be generalised to specific mental disorders (Kazdin, 1993).

A regularly used diagnostic system in child psychopathology is the Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association [APA], 2013). The most recent edition of the DSM, the DSM-5 (APA, 2013) outlines categories of mental disorders in children and adults (e.g., ADHD, generalised anxiety disorder [GAD] or MDD). Categorical systems like the DSM are advantageous in that they enable an agreed understanding about particular disorders so that clinicians and researchers can communicate (Sonuga-Barke, 1998). However, there are several limitations for the use of categorical systems. First, categorical systems are limited by their inability to describe children who have sub-clinical symptoms, and who therefore do not meet criteria for a formal diagnosis. Second, the high rate of co-morbidity among disorders implies that disorders might not be best described by discrete categories (Achenbach, 2008; Clark, Watson, & Reynolds, 1995). Third, categorical approaches

are limited if a clinician's interpretation of diagnostic criteria and decision rules deviate from how they were intended (Sonuga-Barke, 1998). Fourth, disorders might be continuous by nature (Schmidt, Kotov, & Joiner, 2004).

Dimensional approaches are an alternative way in which psychological problems can be described. Dimensional approaches view psychological problems as occurring on a continuum from normal personality to clinical levels (Sonuga-Barke, 1998). The idea that disorders occur on a continuum rather than as discrete categories might better represent the very nature of disorders in child psychopathology (Wood & Green, 2011). For example, there is now evidence from genetic studies supporting a dimensional view of ADHD (Hay, Bennett, Levy, Sergeant, & Swanson, 2007; Levy, Hay, McStephen, Wood, & Waldman, 1997). Dimensional approaches have an added benefit of providing additional information about levels of severity as opposed to simply saying whether a child has a particular disorder or not. For example, in the case of ADHD, there may be benefits for understanding the severity of the problem because different levels of severity may indicate the need for different types of treatment (Wood & Green, 2011). The DSM-5 has partially addressed this issue by introducing severity levels for many of the neurodevelopmental disorders (e.g., ADHD and autism spectrum disorders; APA, 2013).

Standardised questionnaires such as the Child Behavior Checklist for Ages 6 to 18 (CBCL 6-18; Achenbach, 2001) or Teacher Report Form for Ages 6 to 18 (TRF 6-18; Achenbach, 2001) provide ways of describing dimensions of child psychopathology. These assessments are groups of symptoms and/or behaviours that are clustered together in factor analysis (e.g., anxious/depressed, withdrawn depressed, and attention problems). These measures yield quantitative dimensions of child psychological symptoms that can be useful in clinical practice and research. Dimensional approaches are beneficial for treatment research as they provide a means of quantifying psychological symptomology, even when symptoms are sub-clinical. The use of quantitative measures that assess the underlying constructs of psychological disorders therefore provide increased sensitivity to changes in non-clinical populations (Achenbach, 2008).

Psychological Problems in Children

Anxiety.

Gosch, Flannery-Schroeder, Mauro, and Compton (2006) provided a comprehensive description of anxiety. The emotional effects of anxiety can include feelings of apprehension or dread, trouble concentrating, feeling tense or jumpy, and anticipating the worst, irritability, restlessness, hyper-vigilant behaviour, and poverty of thought. The physical effects of anxiety may include heart palpitations, tachycardia, muscle weakness and tension, fatigue, nausea, chest pain, shortness of breath, stomach aches, or headaches. As the body prepares to deal with a threat, blood pressure, heart rate, perspiration, blood flow to the major muscle groups are increased, while immune and digestive functions are inhibited (i.e., the fight or flight response). External signs of anxiety may include pallor, sweating, trembling, and pupillary dilation. Someone who has heightened anxiety might also experience it subjectively as a sense of dread or panic. The cognitive effects of anxiety may involve themes of perceived physical or psychological threat to an individual's personal domain and are believed to be reactivated by subsequent internal or external cues. Anxiety can also be experienced in ways which include changes in sleeping patterns, nervous habits, and increased motor tension like foot tapping, somatic complaints or inability to separate from the care giver (Gosch et al., 2006).

Anxiety is a normal and expected emotion that, at modest levels, serves an adaptive function in alerting an individual to potential danger or motivating him/her to perform a certain action. However, anxiety becomes problematic when it exceeds reactions that are adaptive and healthy given a situation, or are above what is expected for someone of that developmental stage. Such excessive reactions may be considered maladaptive or constitute a diagnosable disorder when they result in significant impairment in the child's social, emotional or educational functioning (Gilman & Chard, 2007). Anxiety is thus a generalised state that can occur without an identifiable threat. As such, it is distinguished from fear, which is an appropriate cognitive and emotional response to a perceived threat (Lang, Davis, & Ohman, 2000).

Anxiety problems are among the most prevalent mental health difficulties affecting children today (Farell & Barrett, 2007; Velting, Setzer, & Albano, 2004). Cartwright-Hatton, McNicol, and Doubleday (2006) conducted a comprehensive

literature review and found 11 well designed epidemiological studies that reported on the prevalence rates of diagnosable anxiety disorders in preadolescent children. These rates ranged from 2.6 to 41.2% with the variability suggested to relate to different study methodologies and samples used (Cartwright-Hatton et al., 2006).

Depression.

It is becoming increasingly apparent that depression and/or mood problems are a serious issue for children. Depression involves either depressed mood, as indicated by either subjective report (e.g., feels sad, empty, and hopeless), or by observation made by others (e.g., appears tearful, or irritable in the case of children or adolescents), and/or markedly diminished interest or pleasure in activities. Depression also may include other symptoms such as significant weight change, insomnia or hypersomnia, psychomotor agitation or retardation, fatigue or loss of energy, feelings of worthlessness or inappropriate guilt, diminished ability to concentrate, and recurrent thoughts of death and/or suicidal ideation (APA, 2013). The clinical presentation of depression varies across developmental stages with younger children exhibiting more acting out behaviour and somatic complaints than older children. As stated, irritable mood is also important for children and adolescents (APA, 2013).

The incidence of MDD in school aged children is generally found to be around 1.5–4% increasing to 3-8% during adolescence (Kronenberger, & Meyer, 2001). The rates for depressive symptoms in children are much higher starting at 7% during preschool years and escalating to 40% during adolescence. Unfortunately, fewer than half of all children diagnosed with a mood disorder receive treatment prior to the age of 18 (Kessler, Avenevoli, & Merikangas, 2001; Merikangas, et al., 2009).

Attention Problems.

Attention can be loosely defined as the cognitive process of paying attention to one aspect of the environment while ignoring others. In ADHD, cognitive problems with attention and concentration are central to the disorder. ADHD is the most researched childhood disorder, and is estimated to be at about 5% of children (APA, 2013). The DSM-5 outlines two main symptom areas for ADHD including symptoms of inattention and symptoms of hyperactivity and impulsivity. Symptoms of inattention may include limited attention to detail, difficulty sustaining attention, not listening due to distraction, poor follow through with tasks, organisational problems, avoidance or

reluctance to engage in tasks that require sustained mental effort, losing things necessary for tasks or activities, distractibility, and forgetfulness. Symptoms of hyperactivity and impulsivity include excessive behaviour (e.g., fidgeting, tapping, squirming), problems remaining seated, feelings of restless or running and climbing when inappropriate to do so, unable to engage in activities quietly, seems “on the go”, or “driven by a motor”, talks excessively, cannot wait for turn in conversation, and interrupts or intrudes on others (APA, 2013).

There is high co-morbidity for ADHD with other psychological disorders such as oppositional defiant disorder (ODD) and CD. As many as 50% of children with ADHD have CD or ODD, 33% have dyslexia, and 30% have depression and anxiety (APA, 2014). Children with ADHD are more likely to have cognitive problems, learning disorders and a family history of anxiety. Children who have ADHD are at greater risk for medical, social, behavioural, and academic issues compared to children without the disorder (Murphy & Barkley, 2004).

Self-esteem: An Important Factor in Child Mental Health

Self-esteem has been defined as a person's overall evaluation or appraisal of his/her own worth (Hewitt, 2009). Self-esteem encompasses beliefs (for example, "I am competent", "I am worthy") and emotions such as triumph, despair, pride and shame (Branden, 2001). While self-esteem is often used interchangeably with self-concept, they do not always refer to the same construct. Self-concept sometimes means the actual content of what one thinks about oneself, whereas, self-esteem is the positive or negative evaluation of this content (Branden, 2001). Low self-esteem is associated with many psychological disorders. For example, reference is made to feelings of worthlessness in the symptom list for depression in the DSM-5 (APA, 2013).

Mann, Hosman, Schaalma, and de Vries (2007) argued that self-esteem is crucial to a person's mental and social well-being. Self-esteem is a protective factor and a non-specific risk factor in physical and mental health issues (Mann et al., 2007). Research supports that high self-esteem can lead to better health and social outcomes, whereas, low self-esteem is associated with social problems and a broad range of mental disorders. Mental disorders associated with low self-esteem include internalising problems (e.g., depression, suicidal tendencies, eating disorders and anxiety) and

externalising problems (e.g., violence and substance abuse; Mann et al., 2007).

Focusing on self-esteem is considered a core element of mental health promotion and a fruitful basis for a broad-spectrum approach (Mann et al., 2007).

Self-esteem has been identified as an important predictive factor for young people in the development of mental health problems and other negative consequences. For example, Trzesniewski et al. (2006) used prospective data from the Dunedin Multidisciplinary Health and Development Study birth cohort, and found that adolescents with low self-esteem had poorer mental and physical health, worse economic prospects, and higher levels of criminal behaviour during adulthood, compared with adolescents with high self-esteem. The deleterious long-term consequences of low self-esteem could not be explained by adolescent depression, gender, or socioeconomic status. Moreover, the findings held when the outcome variables were assessed using objective measures and informant reports; therefore, the findings cannot be explained by shared method variance in self-report data. These results provided further support for the argument that low self-esteem during adolescence predicts negative real-world consequences during adulthood (Trzesniewski et al., 2006).

Children from Disadvantaged Backgrounds

Contributing factors for disadvantage of the children in Australia include having English as the second language in their home and being from a family of low socioeconomic status (Sawyer et al., 2008). Children from non-English speaking backgrounds are faced with unique challenges to adapt and function within the adopted mainstream culture in which they live (Sawyer et al., 2008). Despite the growing ethnic diversity in many western countries, research that focuses on psychological treatment for childhood mental health problems affecting these diverse backgrounds is lacking (Johnson & Tucker, 2008). Available research has indicated that families from non-English speaking backgrounds have a lower use of mental health services than children from English speaking backgrounds (Steel et al., 2006). Reasons given for this include: lack of information about available services; language and cultural barriers; a greater stigma attached to mental illness; and in some cultures, individuals tend to somatise their psychological problems (Johnson & Tucker, 2008).

In an Australian study, Sawyer et al. (2008) found that children in families with low socio-economic status were more likely to have mental health problems than those from mainstream backgrounds. Children from non-English speaking backgrounds are more likely to belong to socioeconomically disadvantaged groups (Sawyer et al., 2008; Yamamoto et al., 1997). The impact of socioeconomic disadvantage on children relates to a range of variables, including: low maternal education; lack of employment; single parenthood; parental psychopathology; limited resources; and negative life events (e.g., poor nutrition, exposure to violence) (Draine, Salzer, Culhane, & Hadley, 2002; Sawyer et al., 2008). Although these relationships are often complicated, research is needed that focuses more specifically on children from disadvantaged backgrounds so as to better understand how to target interventions to best meet their needs (Draine et al. 2002). Furthermore, intersectionality theory suggests that the interplay of non-English speaking backgrounds and low socioeconomic status is likely to result in multiple levels of disadvantage (Macionis & Gerber, 2011).

A large body of social welfare, and/ or community health research exists to support the identification of children who are more at risk of social disadvantage than other groups (Braveman, & Gruskin, 2002). Social exclusion has emerged as one of the key concepts used to analyse and identify multidimensional disadvantage, moving away from measuring disadvantage purely in terms of income poverty (Phillips, Miranti, Vidyattama, & Cassells, 2013). The Child Social Exclusion (CSE) index is a geographic index of risk of social disadvantage for Australian children, which combines economic and social factors that are specifically related to child outcomes. The CSE Index covers five domains of disadvantage comprising 14 indicators. The domains are socioeconomic, education, connectedness, housing and access to health services. Children considered at risk of being socially disadvantaged are then primarily identified by their geographic location in a local Government area that has rated on the lowest quartile on the CSA (Phillips et al., 2013).

Children from disadvantaged backgrounds are more likely to have low self-esteem. For example, in a meta-analysis of 446 studies (N = 312,940 participants) Twenge and Campbell (2002) found a negative association between self-esteem and disadvantage. The relationship between low self-esteem and lower socioeconomic status strengthened as children developed (Twenge, & Campbell, 2002). Research has further indicated that other influences can alter the negative impact of economic disadvantage

on children. For example, Killeen (1993) investigated the role of parent influence on children's self-esteem in economically disadvantaged families. Findings showed that parents tended to influence their children's self-esteem by feedback about their child's performance and, by their affective responses. Global self-worth was predicted by children's' perceptions of parental support and perceived competence in domains that were important to the parents (Killeen, 1993). Although children from lower socioeconomic status are at risk of lower self-esteem, this study highlighted that the risk can be ameliorated by other influences related specifically to parental responses and behaviour.

Chapter Summary

The prevalence of mental health problems in Australian children is higher than previously assumed. These problems have negative consequences for the lives of children, their families, and communities. There is a growing appreciation that children are affected differently than adults by mental illness, and have a better long term prognosis if treated earlier. Recent research in child psychotherapy is characterised by clearly described populations with the use of either categorical assessment systems such as the DSM-V or dimensional systems of assessment where psychological problems are viewed on a continuum. Dimensional systems have advantages, including being able to better represent the nature of child psychopathology, and provide quantitative information about severity. Three prevalent dimensions of childhood psychopathology include depression, anxiety and attention problems. Self-esteem is also an important factor in children's mental health with low self-esteem being related to poor health, social, educational and economic outcomes. Children from disadvantaged backgrounds (i.e., low socioeconomic and non-English speaking backgrounds) are more likely to have mental health problems and low self-esteem than children from mainstream backgrounds. Children at higher risk of disadvantage can be identified by the CSE, a geographic index of risk of social disadvantage for Australian children, which combines economic and social factors that are specifically related to child outcomes. They are also less likely to access services than their mainstream counterparts. Treatment research that focuses on improving mental health and self-esteem in disadvantaged children is thus warranted.

Chapter 3

Psychological Treatment of Childhood Mental Health Problems

Children with mental health problems who are treated early show significantly better outcomes than those treated later (Dadds et al., 1997; Greenberg, Domitrovich, & Bumbarger, 2000). Unfortunately, only a minority of children with mental health problems receive professional help, let alone early intervention. For example, Sawyer et al. (2008) found that less than one fifth of children identified as having a psychological problem had attended a mental health service. Parents identified counselling in schools as one of the services most frequently used by these children (Sawyer et al., 2008). This finding was consistent with the results of other international surveys (e.g., Canino et al., 2004; Verhulst & van der Ende, 1997) and also emphasised the key role that school based mental health services play in providing assistance for children. The development of effective psychological treatment programs for childhood mental health problems that can be implemented in the school setting is therefore critical.

Psychological treatments for children can be broadly defined as a group of techniques that aim to address the behaviours, thought processes, affects, and/or beliefs of children to improve psychological functioning. Psychological approaches for children may include play therapy, psychodynamic psychotherapy, and CBT. Psychological interventions can be implemented in the context of individual or group formats and sometimes within the family system (e.g., family therapy, behavioural management or parenting support; Kronenberger & Meyer, 2001).

A modest number of studies have shown medium effect sizes for child centred play therapy, and a few studies have supported the efficacy of psychodynamic approaches in children (Bratton, Ray, Rhine, & Jones, 2005). For many years, psychodynamic therapies were considered to lack a credible evidence base and have consequently failed to appear in lists of “empirically supported treatments”. More recently, efforts have been made to evaluate the efficacy and effectiveness of psychodynamic psychotherapy for children and young people (e.g., Abass, Rabung, Leichsenring, Refseth, & Midgley, 2013; Midgley & Kenney, 2011.) For example, Abass et al. (2013) found 11 studies on psychodynamic brief psychotherapy (40 or

fewer sessions) which covered a broad range of conditions including depression, anxiety, anorexia nervosa, and borderline personality disorder. Results indicated that psychodynamic psychotherapy was as effective as CBT with the exception of CBT showing greater effects for somatic and mood symptoms. The heterogeneity of the samples across these studies necessitated caution when interpreting the results (Abass et al., 2013).

CBT has demonstrated effectiveness for over 325 published studies (Butler, Chapman, Forman, & Beck, 2006). Butler et al. (2006) found moderate to large effect sizes for the use of CBT in the treatment of 16 different psychological disorders for both children and adults. CBT has also produced similar favourable outcomes to pharmacotherapy in large in meta-analytic studies (e.g., Mitte, 2005; Smith et al., 2002). CBT is also associated with lower attrition rates compared to medication treatments, which is often associated with unwanted side effects (Mitte, 2005). A further advantage of CBT is its cost effectiveness with the average number of sessions for the treatment of childhood mental health problems ranging from 8 to 12 (Butler et al., 2006).

CBT can be considered an umbrella term for a wide variety of psychotherapeutic approaches that aim to solve problems concerning dysfunctional cognitions, behaviours and emotions. CBT emphasises an individual's thoughts, feelings and behaviour. The therapies have been developed from theoretical models of human behaviour and cognition (Dobson, 2010). The process of thinking adaptively about one's thoughts, and behaviours to improve human functioning and quality of life is not a new concept and can be dated back to the Stoic philosophers or even the ancient times of Buddha (Beck, Rush, Shaw, & Emery, 1979; Ellis, 1991).

CBT includes a variety of therapeutic approaches including cognitive therapy (Beck, Rush, Shaw, & Emery, 1979), rational emotive behaviour therapy (Ellis, 1994), schema-therapy (Young, Klosko, & Weishaar, 2003) and multimodal therapy (Lazarus, 1981) to name but a few. CBT has traditionally been short to medium term (e.g., 6 to 20 hour-long sessions) and involved active processes where clients engage in activities such as keeping a diary of significant events and associated feelings, thoughts and behaviours. Therapies often include therapist and client questioning and testing a client's unhelpful and unrealistic cognitions, assumptions, evaluations, and beliefs. Alternatively, therapies may focus on a client's behaviour where the client may

gradually approach avoided activities (e.g., exposure therapy in obsessive compulsive disorder) or experiment with new ways of responding or behaving (e.g., social skills training). Other behavioural techniques may include distraction, relaxation, or distress tolerance (Dobson, 2010).

Although CBT was originally developed for adults, there has been much work done in the last 20 years developing specific CBT programs for children. Grave and Blissett (2004) suggested some guidelines for applying CBT to children. These guidelines included: (a) simplification of verbal and written language; (b) involvement of parents to reinforce concepts practiced in the sessions; (c) use of play-based activities to communicate concepts; and (d) more behaviourally active learning techniques that can lead to improvements in both cognitive reframing and reduction of problematic behaviours.

It is generally agreed that children younger than eight years are likely to have difficulty with techniques such as thought monitoring whereas older children may benefit from these approaches (Freiberg & McClure, 2002). This is consistent with Piagetian theory that suggests that children only develop the capacity to form abstract and self-reflective thoughts consistently between 11 to 16 years (Piaget, 1964). Although it is now generally accepted that Piaget may have underestimated the ability of younger children to process abstract material (Meadows, 1993) there is sufficient empirical evidence to indicate that young children (i.e., under age eight years) have only rudimentary higher order reasoning skills (Grave & Blissett, 2004). Given that CBT requires an individual to be aware of his/her cognitive distortions, affect and behaviours, these higher order processes may be beyond the reasoning abilities of children under eight years (Coyne, Burke, & Feeman, 2008).

Effectiveness of CBT in Children

In a recent examination of the evidence-base for treatment of anxiety disorders in children, level one evidence (i.e., evidence from a systematic review of all relevant randomised controlled trials) was found for the use of CBT in the treatment of GAD and obsessive compulsive disorder (APS, 2010). The review found no studies to indicate the effectiveness of any intervention for panic disorder (APS, 2010). The key study referred to in this review (i.e., Silverman, Pina, & Viswesvaran, 2008) found that CBT was

probably efficacious for a range of anxiety disorders including GAD, separation anxiety disorder and, social phobia. However, the majority of studies included in the sample compared CBT to waitlist control conditions which did not account for expectancy biases. The authors of this study emphasised the need for increased minority representation in phobic and anxiety treatment studies (Silverman et al., 2008).

In the mentioned literature review (APS, 2010) level one evidence was also found for the use of CBT in the treatment of depression in children (APS, 2010). This evidence was largely based on a systematic review by David-Ferdon and Kaslow (2008) who included 10 studies on children less than 12 years. However, other research has called into question the effectiveness of psychotherapy for depression in children. For example, Weisz et al. (2006) conducted a meta-analytic study on the effect of psychotherapy in the treatment of depression in children and adolescents. Of the 35 studies included in the analysis, 32 of these were studies that involved a form of CBT. Results revealed a mean effect size of 0.34, falling between Cohen's (1988) benchmarks for a small (i.e., 0.20) and medium (i.e., 0.50) effect size. This modest effect size was substantially smaller than calculated for previous similar research where large mean effect sizes have been estimated (Wiesz et al., 2006).

The effectiveness of CBT for reducing depression in children appears dependent on symptom severity. Outcomes for both psychotherapy and pharmacotherapy research have reported that up to 60% of children and adolescents with MDD respond equally well to a placebo (Bridge et al., 2007; Cheung, Emslie, & Mayes, 2005). For young people with mild depression, an active control group condition (where support is provided without psychological treatment) is often equally as efficacious to CBT treatment (March et al., 2004). It may be that children and adolescents require only education and case management to ameliorate the symptoms of mild depression (Birmaher & Brent, 2007). In more severely depressed young people, research indicates that support alone is inferior to CBT (March et al., 2004). Evaluating the effectiveness of CBT in young people is further complicated because although the use of CBT has been extensively researched for older children and adolescents, randomised clinical trials are rarer in younger children (Coyne et al., 2008). Further innovative research into the development of CBT-based approaches for mild to moderate children depression in primary aged children is therefore warranted.

Treatment of childhood ADHD historically focused on non-cognitive behavioural treatment approaches as an adjunct to pharmacological interventions (Kendall & Braswell, 1993). Research is beginning to show that many children with ADHD can be treated effectively with psychological intervention alone. For example, a meta-analysis by Fabiano et al (2009) showed that behavioural treatments alone produce large effect sizes in the treatment of childhood ADHD. Randomized controlled studies exist to support that CBT is effective in reducing the core symptoms of ADHD (e.g., Froelich, Doepfner, & Lehmkuhl, 2002). Although CBT has been less frequently used in the treatment of children with ADHD, a meta-analysis by Dulak, Fuhrman, and Lampman (1991) indicated that CBT may be helpful for children with behavioural and social maladjustment problems. In a randomized controlled study by Froelich, Doepfner, and Lehmkuhl (2002), CBT was shown to be effective in reducing the core symptoms of ADHD in children. One criticism of this approach for ADHD in children is that it may only be effective when coupled with parent interventions or medication (Abikoff & Gittleman, 1985; Wells, 2004). For this reason, consensus for best practice of ADHD has begun to emphasise multilevel interventions that involve direct work with children alongside interventions for parents and teachers (Young & Amarasinghe, 2010).

CBT that emphasises present moment self-monitoring may be more appropriate for treating the core symptoms of ADHD compared to standard CBT programs that focus on changing maladaptive cognitions. Teaching children to self-monitor their feelings and emotions may improve their ability to engage in necessary problem solving to behave more skilfully (Kendall & Braswell, 1993). For example, the “Stop Think Do Social Skills Training Program” (Petersen & Adderly, 2002) has been used extensively in clinical and school settings in Australia to improve social problem solving skills in children with behaviour problems (Beck & Horn, 1992). Children are trained to notice their emotional responses to situations which become signals that they may need to pause and problem solve. This emphasis on self-monitoring has the potential to improve awareness of behavioural inhibitory cues that are often inadequate in children with ADHD (Petersen & Adderly, 2002). Maladaptive behaviour in ADHD is often triggered by emotion driven, impulsive, disinhibited behaviour that lacked inhibitory cues and information processing (Young & Amarasinghe, 2010). A child’s ability to inhibit a

behavioural response for ample problem solving is critical for them to be able to respond skilfully to challenging situations. (Petersen & Adderly, 2002).

Psychological Treatment for Children from Disadvantaged Backgrounds

The importance of developing specialised and accessible treatment programs for children that come from disadvantaged backgrounds is critical to ameliorate risk factors of mental illness. It is likely that children from disadvantaged families respond differently to specific mental health programs compared to children from English speaking or middle to high socioeconomic status families (Sawyer et al., 2008). This might be due to language barriers that mean these children struggle to understand the verbal component of programs. Children from disadvantaged backgrounds might have also been exposed to very different belief systems than children from English speaking and middle to high socioeconomic backgrounds (Johnson & Tucker, 2008). Some attempts have been made to review the evidence-based treatment literature for ethnic minority groups. For instance, Huey and Polo (2008) reviewed evidence-based treatments for ethnic minority youth in the United States. Although this study provided some evidence for moderate effect sizes for psychotherapeutic treatments for these youth, the findings were limited to African Americans and Latinos (Huey & Polo, 2008). The researchers also pointed out that although the treatments used for these youth had no apparent modifications to meet their diverse needs, other studies have suggested that therapists routinely use culturally sensitive strategies with ethnic minority clients (e.g., Harper & Iwanmasa, 2000) that are not necessarily described in the description of the treatment program (Huey & Polo, 2008). More research is therefore required to investigate whether particular treatment programs are effective for children from disadvantaged backgrounds, and if not, how these programs can be modified to improve acceptability and effectiveness.

The adaption of programs to suit the specific needs of children from disadvantaged populations (particularly children from culturally diverse and non-English speaking families) requires the awareness of cultural competence (Johnson & Tucker, 2008). Cultural competence refers to an ability to interact effectively with people of different cultural and/or ethnic backgrounds. Cultural competence comprises four components: (a) Awareness of one's own cultural worldview; (b) Attitude towards cultural differences; (c) Knowledge of different cultural practices and worldviews; and

(d) Cross-cultural skills. Developing cultural competence results in an ability to understand, communicate with, and effectively interact with people across cultures (Mercedes & Vaughn, 2007).

Cultural competence includes awareness and adaptability around teaching styles for treatment programs. Gay (2000) argued that children from diverse backgrounds are better able to acquire academic knowledge and skills if the content is delivered through lived experiences and frames of relevance that are personally meaningful to the students. Information taught in this manner is argued to have a higher interest value and is learned more easily and thoroughly by children from diverse backgrounds. Consequently, the academic achievement of ethnically diverse students will improve when they are taught through experiential mechanisms rather than didactic teaching practices that are more specific to children from western cultures (Gay, 2000).

Research also needs to focus on how treatment programs can be best delivered to optimize access for children from disadvantaged backgrounds. Provision of mental health services in schools is likely to ensure better program attendance for these children rather than relying on parents to bring the children to services outside of school hours (Sawyer et al., 2008). To optimize access, it is also critical that mental health programs are offered during the primary school years. This is because many students who lack social-emotional competencies become less connected to school as they progress to secondary school (Blum & Libbey, 2004). As many as 40–60% of students become chronically disengaged from school by the time they are in secondary school (Klem & Connell, 2004). The importance of mental health intervention in primary schools is underscored in the development of “Kids Matter”, which is an Australian initiative to promote, and resource mental health and wellbeing in Australian primary schools (Kids Matter, 2012).

Methodological Considerations in Child Psychotherapy Research

Efficacy refers to the capacity for beneficial change of a given intervention. If efficacy is established, an intervention is likely to be at least as good as other available interventions to which it will have been compared. Effectiveness studies investigate the extent to which empirically supported treatments can be applied to everyday practice. They may look at diverse samples (e.g., low socioeconomic groups or non-English

speaking groups) and/or naturalistic settings (e.g., treatment that is conducted in school or mental health settings; Rapport, Kofler, Bolden, & Sarver, 2008). Effectiveness research also looks at the patient acceptance and compliance of treatment, and how cost effective and easy to disseminate it may be (Rapport et al., 2008).

In psychological treatment research, there is a tension between efficacy and effectiveness research priorities. For example, conducting research in a clinical setting would optimise the level of experimental control, but the outcomes could not be generalised to real-life settings such as schools or community based programs. Conversely, conducting research in real-life settings is likely to compromise experimental control, but increase applicability (Rapport et al., 2008). Chambless and Hollon (1998) suggested that it is not always necessary to completely separate a study as being relevant to either efficacy or effectiveness, and indeed, it would be of value for research to retain elements of both. This approach has potential for retaining relevance to real life settings but at the same time, maximizing methodological control so that some tentative statements could be made about treatment efficacy.

To ensure that a treatment is effective and efficacious, the study must be appropriately controlled. The use of comparative control groups is especially important in the case of children because children change and mature more rapidly than adults. For children, improvements over time are very likely to be due to maturation effects. The use of *do nothing controls* does not control for the potential contribution of attention or expectation bias that has nothing to do with the treatment (Rapport et al., 2008). In a meta-analytic study of child treatment research from 1995 to 2004, Jensen et al. (2005) found that only half the studies used active control groups. In the studies that used active control groups, improvements for the treatment groups were generally no different to the controls. Superior improvements for treatments compared to *do nothing controls* might be a consequence of non-specific support and expectations of improvement rather than the effect of the treatment itself. For this reason, it is optimal to use active control groups as comparison groups (rather than *do nothing* or *wait list* comparison groups) to control for the effects of attention and/or support and expectation bias (Rapport et al., 2008).

In order to make generalisations about psychological treatments in research, the use of standardised assessment is important so that treatment effects can be

meaningfully compared across studies (Rapport et al., 2008). In child treatment research, the validity of self-reporting is limited and multi-informant assessment is important because children's behaviour is often highly variable in different environments so informants are less likely to agree. It is also important that these outcome measures are reliable and valid (Chambless & Hollon, 1998). Attrition is also an important consideration in treatment outcome research, especially considering the high dropout rates for children from culturally diverse or disadvantaged backgrounds in treatment trials (e.g., Jensen, 2005; Weisz et al., 2006). High attrition rates can bias the favourable benefits of a treatment because participants who dropped out of the study were likely to represent those for whom the treatment did not work (Tierney, & Stewart, 2005). In light of this, the use of multi-informant assessment measures such as the CBCL/6-18 (Achenbach, 2001) and TRF/6-18 (Achenbach, 2001) and inclusion of attendance and participation data are critical outcome measures (Jensen, 2005).

Treatment fidelity has become an important consideration in psychological treatment research (e.g., Borrelli et al., 2005). This refers to the methodological strategies used to monitor and enhance the reliability and validity of behavioural interventions. The overall goal of enhancing treatment fidelity is to increase scientific confidence that changes in the dependent variable are attributable to the independent variable. Careful consideration of treatment fidelity helps to explain study findings, revise interventions for future research, and increase statistical power and effect sizes by reducing random and unintended variability. Enhancing treatment fidelity has the effect of not only increasing internal validity but also increasing external validity, as a high degree of treatment fidelity is needed both for study replication and for generalization of treatments to applied settings (Moncher & Prinz, 1991).

Chapter Summary

Children who are identified as having psychological problems are unlikely to access mental health services even though research indicates that early intervention is important for a good prognosis. Evidence indicates that CBT is effective for improving symptoms of anxiety. Traditional CBT approaches that are effective in adults have been less effective in the treatment of mild to moderate depression and attention problems in children. Atypical CBT Social Skills Training programs such as “Stop Think Do” (Petersen & Adderly, 2002) that focus on present moment self-monitoring strategies have been more successful in ameliorating attention problems in children than standard CBT programs that emphasise changing maladaptive thoughts. Children from disadvantaged backgrounds are at greater risk of psychological problems and low self-esteem than their mainstream counterparts. These children have less access to mental health services and treatment programs need to be specifically developed to meet the needs of these groups. Delivery of mental health programs in the primary school setting is one way of improving children’s access to treatment. Recent methodological improvements in psychological treatment research on childhood mental health problems include the use of randomised controlled designs with multi-informant standardised assessment measures. An emphasis on well-designed treatment studies with enhanced treatment fidelity that focus on appropriate CBT programs for disadvantaged children was identified as an important direction for child psychopathology research

Chapter 4

Mindfulness-Based Treatment Approaches for Children

CBT research is moving into a third wave that incorporates the principle of mindfulness. The practice of mindfulness originated in Eastern meditation traditions, and has become increasingly popular in Western culture, where a clinical intervention program was initially developed by Jon Kabat-Zinn (Kabat-Zinn, 1990). Mindfulness practices can be defined as any practice that involves the self-management of attention to foster a quality of “mindfulness”. Mindfulness means “paying attention in a particular way on purpose in the present moment non-judgmentally” (Kabat-Zinn, 1990, pp.29-30). Kabat-Zinn (2003) described the quality of mindful attention as a way of being that involves being interested, friendly and open-hearted toward any experience observed in the present moment, regardless of how pleasant or aversive the experience may be to most people.

Although traditional CBT and mindfulness deal with thoughts, feelings, physical sensations, and urges to act, they each approach these experiences differently. Traditional CBT assumes that “realistic evaluation and modification of thinking is necessary to improve behaviour” (Beck, 1995, p.1). Traditional CBT emphasises changing the content of thoughts by examining their relationship to feelings and behaviour. By contrast, mindfulness involves the self-management of attention and emphasises an awareness of thinking that is similar to that promoted in cognitive thought record techniques. In mindfulness approaches, the emphasis shifts from changing the content of problematic thoughts to simply recognising and observing the thoughts. Non-judgmental observation of thought itself is argued to be all that is required for these experiences to become harmless (Segal, Williams, & Teasdale, 2002).

Mindfulness Treatment Programs

To date, the most commonly described mindfulness based interventions (MBI) in the literature are: mindfulness – based stress reduction (MBSR; Kabat-Zinn, 1982, 1990); mindfulness-based cognitive therapy (MBCT; Segal, Williams, & Teasdale, 2002); dialectical behaviour therapy (DBT; Linehan, 1993); and acceptance and commitment therapy (ACT, Hayes, Strosahl, & Wilson, 1999). These interventions are broadly similar and often require participants to focus their attention directly on

activities such as breathing, walking, or eating, and to observe these activities carefully or mindfully. Participants are instructed to observe their attention wandering to thoughts, memories, or fantasies and return their attention to the target of observation. Bodily experiences and desires are also carefully observed but not acted on. Participants are encouraged to focus their attention with an attitude of acceptance, friendly curiosity and/or interest towards everything that enters their awareness. The participants are instructed to refrain from (but note and observe) judgment and self-criticism or attempts to change their environment (Baer & Krietemeyer, 2006).

MBSR was developed in the late 1970s within a university-based medical centre for the treatment of people experiencing a range of medical problems, including chronic back pain, cancer, and heart disease (Kabat-Zinn 1990). The MBCT program was developed based on the MBSR core program with an adaptation for preventing relapse in adults recovering from depression (Segal et al., 2002). Both MBCT and MBSR include a series of mindfulness meditation practices drawn from Buddhist origins applied in a secular context, offering universal applications not tied to religious or philosophical traditions (Baer, 2003). MBST and MBCT are learning programs involving at least eight weekly sessions presented in a group format. The programs include regular home practice with mindfulness being the core of the curriculum. Mindfulness practices may include, but are not limited to, body scans, sitting meditations, yoga movements, and walking meditations. The group sessions also include guided meditation exercises, facilitator led enquiry, discussion of experiences and psycho-education. MBCT included additional psycho-education and exercises specific to depression, although the content in both programs are applicable to a range of psychological problems (e.g., anxiety, eating disorders etc., Burke, 2010). These exercises included components such as negative automatic thoughts, and thought diaries. Mindfulness programs aim to cultivate qualities of mindfulness including ability to focus, sustain and switch attention, accept present moment experience including felt sensations in the body without judgement or elaboration. Training focuses on the use of physical sensations of breathing as an anchor for attention (Baer, 2003).

MBSR and MBCT differ from DBT and ACT because they use regular mindfulness meditation practices to develop mindfulness skills. DBT teaches mindfulness techniques via cultivating “psychological and behavioural versions of meditation skills” (Linehan, 1993, p.114). ACT takes a similar approach in teaching

non-meditative component skills of mindfulness (Baer & Krietemeyer, 2006; Hayes & Shenk, 2004). This means that although all these treatment approaches aim to cultivate qualities of mindfulness, MBSR and MSCT promote mindfulness via the practice of meditation, whereas DBT and ACT cultivate mindfulness as an adaptive thought process to be used in daily life without an emphasis on a regular meditation practice (Baer & Krietemeyer, 2006).

Treatment Outcomes for Mindfulness-Based Intervention (MBI) in Adults

Baer (2003) used meta-analytic techniques to review studies that have incorporated MBIs (including MBSR, MSCT, DBT, and ACT) and concluded that these approaches were effective in the treatment of mental health problems. Overall, the studies supported the use of MBI for the improvement of psychological symptoms in clinical (e.g., chronic pain patients, major depressive disorder, binge eating disorder) and non-clinical samples. This review was limited in that most of the studies included were specifically MBSR and many of these studies did not include control groups (Baer, 2003).

More recently, researchers have begun to review different types of MBI approaches in adults. This reflects the growing body of research available on the efficacy and effectiveness of MBI in adults. Grossman et al. (2004) reviewed research on MBSR and found that, overall, there were clinically significant improvements in a range of psychological and medical problems including depression, stress, pain, cancer, and heart disease. This evidence came from controlled and uncontrolled studies that looked at clinical and non-clinical samples. Recent meta-analytic reviews that include randomised controlled studies have shown MBSR to improve psychological outcomes for patients with cancer and chronic pain (Musical et al., 2011; Telehi, 2010). Piet and Hougaard (2011) found MBCT to be effective in the prevention of relapse for MDD in a large meta-analytic study.

The relationship between mindfulness and self-esteem has become a focus in the recent literature (e.g., Kernis & Heppner, 2007). The authors distinguished between *fragile* and *secure* self-esteem, and argued that mindfulness approaches might result in secure self-esteem. Fragile self-esteem refers to an unstable self-esteem where an individual experiences substantial short term fluctuations in contextually based

immediate feelings of self-worth. Fragile self-esteem relies on the achievement of specific outcomes, and meeting expectations. By contrast, secure self-esteem is stable where an individual experiences minimal short term fluctuations of self-worth. Secure self-esteem arises naturally from satisfaction of one's basic psychological needs and is not in need of continual validation (Lakey, Kernis, Heppner, & Lance, 2008). Lakey et al. (2008) found an association between psychological constructs of mindfulness, and secure self-esteem. In this study, qualities of mindfulness as measured by the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003) were positively associated with self-esteem that was higher and more stable. Although this study had a relatively small sample size ($N=12$) and has not yet been replicated, it did provide some initial support for the relationship between mindfulness and self-esteem.

How Mindfulness Improves Mental Health

A comprehensive theoretical knowledge-base has accumulated that supports the benefit of MBI intervention. MBI is argued to be effective in improving psychological symptoms via the enhancement of *emotional regulation* (Semple, Lee, Rosa, & Millar, 2010). Emotional regulation is the process by which an individual manages his/her internal cognitive, emotional and physiological experience so that he/she can skilfully integrate this experience with the external environment (Thompson, 2006). Thompson and Gantlett-Gilbert (2008) distinguished five processes by which an individual regulates emotion. These included: *situation selection*; *situation modification*; *attention deployment*; *cognitive change*; and *response modulation*. Mindfulness is thought to improve emotional regulation via influence upon these processes (Semple et al., 2010).

Mindfulness practice may be improving a person's adaptive responses to his/her environment as described in the emotional regulation strategy of situation selection or modification. Situation selection and/or modification are where a person intentionally takes action to select or change his/her environment. Non-judgemental observation of one's own behaviour for example may increase the likelihood that an individual will recognise the negative consequences of some of his/her behaviours. Through mindfulness, the ability to observe one's self more objectively can improve one's adaptive behaviour (Baer, 2003). For example, with non-judgmental and mindful self-observation, irritating one's boss with frequent lateness would be more likely to be recognised instead of global self-judgements such as, "I am a bad employee". This

insight enables the individual to act in adaptive ways such as to be on time in future (Linehan, 1993b). In the case of binge eating disorder, self-observation skills might lead to improved recognition of satiety cues and better ability to notice urges to binge without yielding to them (Kristeller & Hallett, 1999). Improved recognition of early signs of a depression relapse might promote earlier use of strategies to prevent further relapse at a time where these strategies are more likely to work in preventing further relapse (Teasdale, Segal, & Williams, 1995).

MBI is also thought to improve emotional regulation through changes to attention deployment. This is because MBI helps to develop the capacity to intentionally self-regulate attention to one's moment to moment, internal and external experience (Bishop et al., 2004). Present moment attention deployment has the potential to reduce past or future-based thinking that leads to psychological problems such as depression and anxiety. Past-oriented thinking when attached to negative affective states is argued to be an important component of depressive symptomology (e.g., guilt, remorse, shame, blame; Beck, 1995; Just & Alloy, 1997). Future-oriented thinking such as thinking about possible threats, may lead to unhelpful anxiety responses (Borkovec, Roemer, & Kinyon, 1995). When these negative symptoms from past or future-based thinking occur for long enough, associations between this thinking and negative affect strengthen and are known as cognitive schemas, which are argued to cause depression and anxiety (Beck, 1995). Mindfulness enhances moment-to-moment experience by the self-regulation of attention, potentially de-habitualising maladaptive cognitive schemas that have been created from past or future-based negative thinking (Semple, 2004).

MBI is also thought to cultivate metacognitive awareness, that is, change to *how* someone thinks rather than *what* they think as is the case with traditional CBT. Through meta-cognitive awareness, cognitions may be altered by the process of *decentering*, which is the ability to observe internal and external experiences without emotional, physiological or cognitive reactions (Semple et al., 2010). In meta-cognitive awareness, one is able to observe thoughts as mental occurrences rather than direct readouts of reality (Semple, 2004). Even judgment itself is observed as a phenomenon (Segal, Williams, & Teasdale, 2002). Meta-cognitive awareness results in a distancing or decentering from one's own thoughts and is argued to weaken the unhelpful relationships between one's thinking and the environment (i.e., maladaptive cognitive schemas). These maladaptive schemas are thought to be the basis of depression and

anxiety and are one way in which MBI can improve such symptoms (Semple et al., 2010).

Several researchers have argued that mindfulness-based processes leading to decentring are analogous to the psychological processes of desensitisation or exposure (i.e., Kabat-Zinn, 1982, 1992; Linehan, 1993a, b; Teasdale, 2004). In desensitisation, a person intentionally exposes him/herself to feared stimuli, which breaks down the association between the stimuli and fear reaction. The central component of the application of MBI to emotional disorders is to train participants to deliberately focus their attention towards the unpleasant aspects of their experience (Segal et al., 2002).

Kabat-Zinn (1982) suggested that for chronic pain sufferers, careful focused attention directly on pain sensations in the absence of a non-judgmental attitude may reduce the distress associated with the pain. Prolonged exposure to the sensations of chronic pain without catastrophic consequences may lead to desensitisation, with the reduction over time of the unpleasant emotional responses brought about by pain sensations. A similar mechanism for the effects of MBI on anxiety and panic has been suggested by Kabat-Zinn et al. (1992) where non-judgmental observation of anxiety related sensations without attempting to escape or avoid them may lead to reductions in the emotional reactivity that anxiety might elicit.

Linehan (1993a, b) also suggested that mindfulness practice may assist individuals suffering with borderline personality disorder (BPD) via mechanisms of desensitisation or exposure. Linehan (1993a, b) observed that individuals with BPD were afraid of experiencing strong negative affective states and described these individuals as being *emotion phobic*. People with BPD engage in maladaptive behaviour (e.g., para-suicidal behaviour, self-harm) in an effort to avoid negative affective states. Linehan (1993a, b) further argued that non-judgmental observation and description is a form of exposure to thoughts and emotions without trying to avoid or escape them, which should encourage desensitisation and extinction of fear responses and maladaptive avoidant behaviours.

MBI may be improving a person's ability to positively regulate his/her emotions via response modulation. Response modulation is an emotional regulation strategy where a person actively influences his/her physiological or behavioural responding as

directly as possible. Examples of response modulation strategies might be exercise, pharmacotherapy, or relaxation practices (Thompson & Gantlett-Gilbert, 2008). It is possible that MBI improves psychological symptoms such as anxiety and stress because it can directly affect physiological responses such as in the relaxation response (Baer, 2003). The relaxation response is an integrated psycho-physiological response originating in the hypothalamus that leads to a generalised decrease in arousal of the central nervous system (Mandle, Jacobs, Arcari, & Domar, 1996). The response is the physiological antithesis of the stress response (Mandle et al., 1996). Relaxation training is any method or process that helps a person to achieve this relaxation response. Techniques of relaxation include autogenic training, biofeedback, deep breathing, meditation, yoga, progressive muscle relaxation, creative visualisation, and self-hypnosis (Lehrer, Barlow, Woolfolk, & Sime, 2007).

Meditation has been found to elicit a relaxation response (e.g., Orme-Johnson, 1984; Wallace, Benson, & Wilson, 1984). However, the relationship between mindfulness and relaxation is somewhat complex because the purpose of mindfulness is not to induce relaxation but instead to teach nonjudgmental observation of current conditions, which might include sympathetic arousal, negative affective states, muscle tension and other experiences that are not compatible with a relaxation response (Baer, 2003). Recent research has in fact begun to distinguish between relaxation and meditation (Dooley, 2009). For example, Ditto, Echlache, and Goldman (2006) compared physiological measures including heart rate, cardiac respiratory sinus arrhythmia (RSA) and blood pressure in adults who were engaged in either progressive relaxation or a mindfulness body scan meditation. The participants who meditated showed greater increase in RSA and reduced diastolic blood pressure compared to those who underwent progressive muscle relaxation. These findings support that the physiological response to meditation is distinct from the relaxation response (Ditto et al., 2006).

There is accumulating research to suggest that mindfulness meditation produces a unique physiological and neurobiological response (Dooley, 2009). For example, Davidson et al. (2003) found that that an eight week MBSR program produced measureable changes to brain and immune function. These researchers performed a randomised controlled study into the underlying changes in brain function from an eight-week mindfulness meditation based training program for 25 participants. Findings

indicated that participants who were trained in mindfulness meditation showed superior changes in anterior cingulate cortex activity to a wait list control group. Activity in the anterior cingulate cortex has been associated with positive mood and affect. The participants who underwent the mindfulness training also were found to have significant increases in antibodies to an influenza vaccine, suggesting that mindfulness meditation improves immune function (Davidson et al., 2003).

MBI is thought to improve self-esteem via the strengthening of *authentic functioning* (Kernis & Heppner, 2007). There is accumulating evidence that high self-esteem, which requires stable feelings of self-worth and a strong sense of self, is associated with qualities of mindfulness and authentic functioning (Goldman & Kernis, 2002; Kernis & Heppner, 2007). “Authentic functioning” or “authenticity” is defined as the unimpeded operation of one’s true self in one’s daily enterprise (Goldman & Kernis, 2002). Goldman and Kernis (2002) suggested that *authenticity* comprises four distinct components including: (a) awareness – being aware of one’s own feelings, thoughts, beliefs, strengths, weaknesses and behaviour; (b) unbiased processing – an objectivity when processing information about one’s own strengths and weaknesses; (c) behaviour – that a person’s actions match his/her value system as opposed to the behaviour being purely about obtaining approval or rewards or punishments, and; (d) relational orientation - engaging in openness and truthfulness in one’s close relationships.

Components of authenticity (i.e., awareness and unbiased processing) are closely aligned with descriptions of mindfulness that emphasise present moment awareness and non-judgmental processing. Kernis and Heppner (2007) argued that both mindfulness and authenticity may both provide both the foundation for achieving secure and high self-esteem (Kernis & Goldman, 2005). Research exists to support this link. Lakey et al. (2008) found that dispositional mindfulness, as measured with the MAAS (Brown & Ryan, 2003) correlated positively with measures of authenticity (measured on a 45 item Authenticity Inventory; Goldman & Kernis, 2002) and measures of secure and higher levels of self-esteem.

Mindfulness-Based Treatment Approaches for Children

Given the mounting evidence for the effectiveness of MBI in adult populations, interest has extended to the application of MBI in children. There is now sufficient

research to support that MBI is feasible and acceptable as a treatment approach for children (Burke, 2009). This is not surprising given that children share many of the qualities that characterise mindfulness, including being naturally non-judging, trusting, accepting and having a “beginner’s mind” (O’Brien, Larson, & Murrell, 2008). These qualities are components that form the attitudinal foundation of mindfulness practice (Kabat-Zinn, 1990). Primary school aged children are generally enthusiastic and are more open to new ideas and experiences than adults (Goodman, 2005). Where adults tend to bring prior knowledge to their learning experiences, children bring enthusiasm and curiosity. Where adults require specific goals and face validity to their learning experiences, children are more willing to be open to experiences without needing to strive for a particular outcome (Martin, 2010). Therefore, it follows that children should be more familiar and receptive to activities that cultivate mindfulness (O’Brien et al., 2008).

Although MBI programs became available for adults in the 1980s and 1990s, it has only been over the last decade, that researchers have begun applying these approaches to children. To date, there has been one systematic review conducted on mindfulness treatment research for young people (Burke, 2009). Burke (2009) included 15 studies on children and adolescents between 2002 and 2009. All studies investigated feasibility of mindfulness for both clinical and non-clinical populations suggesting that mindfulness approaches are well tolerated for young people. Analyses of changes in post-treatment outcome measures ranged from small to large effect sizes ($d = -0.2-1.4$).

For the purpose of this thesis, a more updated review of published articles on the use of MBI with children was conducted using electronic data bases (including PsychINFO, PSYarticles, BioMed Central, Medline, Cochrane Library, and PubMed) up until February 2014. Records were searched for occurrences of the keyword “mindfulness” or “meditation” in conjunction with any of the following terms: “children”; “adolescents”; “young”, “young people”; “youth”; and “school”. Any articles found were also inspected for further references. A manual review of the titles and abstracts found only a small proportion of these to be relevant. Dissertation studies and thesis papers were included. Single case and small sample studies with informal measures were also included. A total of 31 articles were identified from this review and Table 1 provides a summary of the papers that were collected. The following discussion reviews these papers.

Table 1

Mindfulness-Based Treatment Research in Children and Adolescents

Authors	N	Population/ Setting	Design	Treatment Groups	Measures / Data reported	Results
Beauchemin, Hutchins, & Patterson (2008)	34	13-18 years Non-clinical Learning disabilities/ problems	Uncontrolled Pre to post within participant	5 week mindfulness mediation	STAIC, Program evaluation	Reduced state and trait anxiety. Increased social skills and academic performance.
Biegel, Shapiro, Brown, & Schubert (2009)	102	14-18 years Clinical psychiatric outpatient	RCS f/up	8 week MBSR / TAU	DSM IV TR, GAF, PSS-10, STAI, SCL- 90-R, SES, Drug use, Program evaluation	Reduced anxiety, depression, somatic distress and increased self-esteem and sleep quality. Higher % diagnostic improvement and GAF
Bogels, Hoogstad, van Dan, deSchutter, &	14	11-18 years Clinical community mental health setting	RCS Pre to post within	8 week MBSR /WL	CBCL/6-18, YSR, CSBQ, MAAS, SHS, PQLI,	Improved personal goals, internalising and externalising complaints,

Table 1 (continued)

Authors	N	Population/ Setting	Design	Treatment Groups	Measures / Data reported	Results
Restifo (2008)			participant		Intent to treat	attention problems, happiness, and mindful awareness. Improved performance on a sustained attention test.
Bootzin & Stevens (2005)	55	13-19 years Clinical	Uncontrolled Pre to post within participant	MBSR plus (CT, Stimulus control, light therapy) 6 weeks	SPI; GMHI; Worry; ESS; other sleep measures	Improved sleep. Reduced substance abuse at 12 month follow up
Coholic, Eys, & Longheed (2011)	36	8-14 years Clinical / child protection agency and children's mental health center.	Controlled Limitations to randomization	HAP, WL and Art Crafts (active control)	PH, RSCA	Lower emotional reactivity for HAP. No changes for perceptions of self-concept

Table 1 (continued)

Authors	N	Population/ Setting	Design	Treatment Groups	Measures / Data reported	Results
Flook, et al. (2010)	44	4-5 years Non-clinical university childcare centre.	RCS	MAP 2 x Week 8 weeks	Unspecified	Increased executive function Increased social skills
Flook et al. (2010)	64	7-9 years Non-clinical school population	RCS	8 week MAP Control group was silent reading period	BRIEF (parent and teacher report)	Improved behavioural regulation, meta- cognition and executive function
Joyce and ETTY- Leal (2010)	NR	10-12 years Non-clinical school population	Uncontrolled pre to post within	10 week Mindfulness training	SDQ, CDI	Reduction in depression and improved scores on SDQ
Lee (2006); Semple (2005)	25	9-13 years Non-clinical remedial reading tutorial clinic university setting	RCS	12 Week MBCT- C, f/up	CBCL/6-18, acceptability and feasibility data	Reductions in attention problems. No significant difference for anxiety, reading comprehension

Table 1 (continued)

Authors	N	Population/ Setting	Design	Treatment Groups	Measures / Data reported	Results
		Doctoral Thesis				or total CBCL/6-18
Lee, Semple, Rosa, & Miller (2008)	25	9-12 years Non- clinical reading difficulty community based reading clinic	Uncontrolled Between pre to post open trial	12 week MBCT-C	CBCL/6-18, TRF/6-18, Intent to Treat, Evaluation Form	High Intent to Treat. Helpful in reducing Internalising and Externalising problems
Liehr & Diaz (2010)	18	8 – 11 years Non-clinical disadvantaged children from community summer camp	RCT	MI, HEI (active control)	SMFQ, STAIC	Reduced depressive symptoms.
McCloy (2005)	37	Grade 3 Non-clinical school setting	Controlled study randomization unknown	2 x 45 minutes mindfulness meditation classroom sessions versus do nothing control	Unspecified measure of applied mindfulness and general mindfulness	Pre to post improvements in general and applied mindfulness in relation to bullying but no significant difference between

Table 1 (continued)

Authors	N	Population/ Setting	Design	Treatment Groups	Measures / Data reported	Results
Mendelson et al. (2010)	97	9-11 years Non-clinical children from disadvantaged background school setting	RCT	12 week Mindfulness and yoga intervention, WL control	RSQ, IECS, SMFQ- C, EP, PIML	groups. Reduction in stress responses including reduced rumination, intrusive thoughts, and emotional arousal compared to control. No difference for depression.
Napoli (2001)	Unspecified	Third grade and fifth grade Non-clinical school setting	Uncontrolled Pilot Study	25 week Mindfulness program	Program evaluation	Evidence for acceptability of program
Napoli, Krech, Rock, & Holly (2005)	228	Grades 1 to 3 Non-clinical school setting	RCT	12 fortnightly AAP training and Control	ACTeRS, TEA-Ch, TAS	Improvement for attention and social skills but not hyperactivity or oppositonality.

Table 1 (continued)

Authors	N	Population/ Setting	Design	Treatment Groups	Measures / Data reported	Results
						Decrease in test anxiety and improvement in selective but not sustained attention.
Ott (2002)	1	9 years Gastro-esophageal reflux clinical outpatient	Case study	Mindfulness meditation	No formal data reported	Informal reports of improvements to the girl's quality of sleep and physical symptoms
Reddy, et al. (2013)	70	13 to 17 years non-clinical foster care	RCT 6 week f/up Wait list control	6 week Cognitively- Based Compassion Training (CBCT)	CBCL, STAI-T, QIDS-SR, FASM, SOFI, CHS, DERS, ICU-y, CTQ, Qualitative	Good feasibility and acceptability data. No changes on standardized tests.
Saltzman & Goldin (2008)	31	Grade 4- 6 Non-clinical self-referred community Setting	Controlled pre to post between groups	8 week weekly session parent child, WL	CDI, ANT, S-CS, SRPT	Mindfulness improvement on cognitive control and

Table 1 (continued)

Authors	N	Population/ Setting	Design	Treatment Groups	Measures / Data reported	Results
			Randomization unknown			ability to direct attention with distractor. Improved in self-judgment and self-compassion No change in mood/anxiety
Semple, Lee, Rosa, & Miller (2010)	25	9-13 years Non-clinical low income high ethnic minority remedial reading program	RCT f/up	MBCT-C	CBCL, MASC, STAIC,	Decreased attention problems (CBCL). Decreased anxiety (MASC).
Semple, Reid, & Millar (2005)	5	7-8 years Non-clinical school children	Uncontrolled Pilot Study Pre to post within participants	6 week MBCT	TRF, MASC, STAIC	Improvements for all five children in at least one area of academic functioning, internalising, or

Table 1 (continued)

Authors	N	Population/ Setting	Design	Treatment Groups	Measures / Data reported	Results
Sibinga, Kerrigan, Stewart, Magyari, & Ellen (2011)	33	13-21 years Clinical hospital HIV infected youth	Uncontrolled Pre to post within participants	9 week MBSR	Attendance, SCL-90-R, CHIPAE, qualitative data	externalising problems). MBSR program participants had significant reduction in hostility, general discomfort and emotional discomfort. Self-reported improvements in interpersonal relationships, school achievement, and physical health lower stress.
Sing, Lancioni, & Singh (2007)	3	13-14 years Clinical conduct disorder	MBLD	Mindfulness Meditation 3 x	Aggressive and non-compliant incidents	Adolescents with conduct disorder can be

Table 1 (continued)

Authors	N	Population/ Setting	Design	Treatment Groups	Measures / Data reported	Results
		research setting		week for 4 weeks f/up	% data	mindful of their aggressive behaviour.
Sing, Sing, Lancioni, Sing Winton, & Adkins (2009)	2	10-12 years Clinical ADHD research setting	MBLD	12 week Parent child Mindfulness training	Compliance % data	Increased compliance.
Singh, Lancioni, & Manikam (2011)	3	14-17 years Clinical research autism spectrum disorder setting	MBLD	4-6 week Meditation on Soles of Feet mindfulness based procedure.	Behavioural (i.e. number of incidents of aggression per time)	Reduced aggression at 3 year follow up.
Singh, Lancioni, & Singh (2011)	3	13-18 years Clinical Asperger's research setting	MBLD	17 to 24 week Meditation on Soles of Feet mindfulness based procedure.	Behavioural data (i.e. number of incidents of aggression per time)	Mean aggression reduced at post-test and 4 year follow up.

Table 1 (continued)

Authors	N	Population/ Setting	Design	Treatment Groups	Measures / Data reported	Results
Sinha & Kumar (2010)	12	13-16 years HIV infected adolescents welfare organization	Uncontrolled Pre post within participants	12 week MBCT- C	YSR, CDI, RCMAS, HSC,ICS-T, SAAS	Reduction of emotional disturbances on self and teacher reports and positive feasibility and acceptability.
Van der Oord, Bogels, & Peijnenburg (2012)	22	8-12 years out-patient mental health care / academic clinic Clinical (ODD, ADHD)	Wait list control Randomization unknown f/up	8 week Mindfulness- based training	DBDRS, PS, MAAS, ARS Parent and Teacher reports	Reduced parent reported ADHD symptoms at post and f/up Increased mindful awareness Reduced parent stress No changes on teacher reports
Wall (2005)	NR	11-13 year Non-clinical	Uncontrolled Pre to post within	5 weeks MBSR combined with Thai Chi	Qualitative	Subjective statements indicated children experienced wellbeing,

Table 1 (continued)

Authors	N	Population/ Setting	Design	Treatment Groups	Measures / Data reported	Results
			participant			calmness, relaxation and improved sleep and self-care and less reactivity.
Waltman, Hetrick, and Tasker (2012)	7	10-18 years Residential facility Clinical (CD, ODD, ADHD) Disadvantaged backgrounds	Uncontrolled pre to post within participant	2 sessions per week for 7 weeks	MQ, PCI	4/7 completed. Moderate to large effect sizes at follow up for completers participants.
Wicksell, Melin, Lekander, & Olsson (2008)	32	10-18 years Non-clinical school setting	RCS f/up	ACT to MDM	FDI; MPI; BPI; PIRS; SF-36	ACT better than Multi on ability to manage pain.
Zylowska, et al. (2008)	32	Adolescents and adults ADHD clinical university setting	Uncontrolled pre to post within participant	8 week Mindfulness training	ADHD rating scale, ANT, Beck Anxiety and Beck Depression, CDS, ANT, ST, TMT, DS	Pre to post improvements in ADHD symptoms and attention and cognitive inhibition tasks. No improvement

Table 1 (continued)

Authors	N	Population/ Setting	Design	Treatment Groups	Measures / Data reported	Results
						in depression or anxiety

Note. Attention Academy Program Intervention (AAP), Acceptance and Commitment Therapy (ACT), The ADD-H Comprehensive Teacher Rating Scale (ACTeRS), Applied Mindfulness Group (AMG), Attention Deficit Hyperactivity Disorder (ADHD), The ADHD Rating Scale (ARS), Attention Network Test(ANT), Brief Pain Inventory Interference Items (BPI), Behavior Rating Inventory of Executive Function (BRIEF), Child Behavior Checklist (CBCL), Children’s Depression Inventory (CDI), Children’s Depression Scale (CDS), Child Health and Illness Profile Adolescent Edition (CHIPAE), Childhood Trauma Questionnaire (CTQ), Children’s Hope Scale (CHS), Digit Span (DP), Diagnostic and Statistical Manual of Mental Disorders Fourth Edition Text Revision (DSM IV TR), Difficulties with Emotion Regulation Scale (DERS), Disruptive Behavior Disorder Scale (DBDRS), The Emotion Profile Inventory (EP), Epworth Sleepiness Scale (ESS), Follow Up (f/up), Functional Assessment of Self-Mutilation. (FASM), Functional Disability Inventory (FDI),Axis V Global Assessment Functioning (GAF DSM IV TR), General Mental Health Distress Index (GMHI),Holistic Arts Based Group Program(HAP), Hopelessness Scale for Children (HSC),Interpersonal Competences Scale (ICS-T), Inventory of Callous and Unemotional Traits—Youth Self- Report (ICU-y), Involuntary Engagement Coping Scale (IECS), Multidimensional Anxiety Scale for Children aged 8-19 (MASC), Mindfulness based cognitive therapy for children (MBCT-C), Mindfulness Questionnaire (MQ), Multiple base line across participants (MBL), Multi-disciplinary Treatment Approach with Medication (MDM), Multi Multidisciplinary Team Approach (MDTA), The Multidimensional Pain Inventory Interference Scale (MPI), Not Reported (NR), Paediatric Quality of Life Inventory (PQLI), Pain and Impairment Relationship Scale (PIRS), The Parenting Stress Scale (PS), People in My Life (PIML), Performance Compliance Index (PCI), Piers Harris Self-Concept Scale Second Edition (PH), Perceived Stress Scale (PSS-10), The Quick Inventory of Depressive Symptomatology–Self- Report (QIDS-SR), Revised Children’s Manifest Anxiety Scale (RCMAS), Revised Children’s Manifest Anxiety Scale (RCMAS),Randomised control study (RCS), The Response to Stress Questionnaire (RSQ), Scale for Assessing Academic Stress (SAAS), The Hopkins Symptom Checklist 90 (Revised) (SCL-90-R),Self-Compassion Scale (S-CS), Strengths and

Table 1 (continued)

Difficulties Questionnaire (SDQ), Resiliency Scale for Children and Adolescents (RSCA), Rosenberg Self Esteem Scale (SES), The Short Form-36 Health Survey (SF-36), The Short Mood and Feelings Questionnaire (SMFQ), The Short Mood and Feelings Questionnaire – Child Version (SMFQ-C), Self-Other Four Immeasurable Scale (SOFI), Self-Referential Processing Task (SRPT), Stroop Task (ST), State Trait Anxiety Inventory (STAI-T), State Trait Anxiety Inventory for Children (STAIC), Test Anxiety Scale (TAS), Substance Problem Index (SPI), Treatment as usual (TAT), Test of Everyday Attention for Children (TEA-Ch), Transcendental Meditation (TM), Trail Making Test (TMT), Penn State Worry Questionnaire (Worry), Youth Self Report (YSR)

Of the 31 studies reviewed, 17 studies were uncontrolled which included five case studies. The uncontrolled studies primarily looked at the acceptability and feasibility of using MBI with both non-clinical (e.g., Beauchemin et al., 2008; Joyce et al., 2010; Lee et al., 2008; Napoli, 2001; Semple, Reid, & Millar, 2005; Sinha & Kumar, 2010; Wall, 2005) and clinical (e.g., Bootzin & Stevens, 2005; Ott, 2002; Sibinga et al., 2011; Sing et al., 2007; Sing et al., 2009, Sing, Lancioni et al., 2007; Sing & Lancioni, 2001; Waltman, Hetrick, & Tasker, 2012; Zylowska et al., 2008) samples. These studies provided evidence to support that MBI is feasible and acceptable to use with children and adolescents from clinical and non-clinical populations. The studies showed this by good attendance rates, positive feedback from parents and children and pre- to post-test improvement on a range of psychosocial variables from multiple informants. The fact that such a large proportion of the studies were uncontrolled reflects the infancy of this research where the focus has been on tolerability of MBI, which takes priority over rigorous experimental design (Burke, 2009).

From mid-2000, there was an emergence of controlled studies that have provided some initial evidence for the efficacy of MBI in improving psychological symptoms in children. Of the 29 studies reviewed, there were 15 controlled studies that looked at the effectiveness of MBI in children. Out of these studies, the majority were conducted on non-clinical samples (e.g., Flook et al., 2010; Flook et al., 2008 as cited in Burke, 2009; Lee, 2006; Liehr & Diaz, 2010; McCloy, 2005; Mendelson & Greenberg, 2010; Napoli et al., 2005; Reddy et al., 2013, Saltzman & Goldin, 2008; Semple, 2005; Semple et al., 2010). The remaining studies investigated the efficacy of MBI on psychiatric outpatient children (e.g., Biegel et al., 2009; Bogels et al., 2009; Coholic et al., 2011, Van der Oord, Bogels, & Pijnenburg, 2012) and children from a pain management clinic (e.g., Wicksell et al., 2008). The studies generally showed an improvement in psychological symptoms including mood, anxiety, attention, and behaviour problems. Other improvements were noted for resiliency, self-esteem, and qualities of mindfulness.

The effectiveness of MBI in the treatment of psychological problems in children is still being established. MBI has been shown to have mixed results for its effect on anxiety, showing superior treatment effects in some studies (e.g., Biegel et al., 2009; Napoli et al., 2005; Semple et al., 2010) but no significant differences in others (e.g.,

Lee, 2006; Saltzman & Goldin, 2008; Semple, 2005). Reasons for this discrepancy have generally been attributed to inadequate sample sizes and low levels of anxiety in the children at pre-test, leading to limited scope for change (Semple et al., 2010).

Findings for the effectiveness of MBI in the treatment of childhood depression have been even more mixed with some researchers reporting change (e.g., Biegel et al., 2009; Liehr & Diaz, 2010) while others have not (e.g., Mendelson et al., 2010; Saltzman, 2008). This is not surprising because meta-analytic studies have indicated that psychotherapy in general does not seem to be advantageous over social support to treat mild to moderate childhood depression (Cheung et al., 2005; March et al., 2004). It is therefore important to compare MBI with active control groups particularly when looking at its effectiveness in the treatment of depression in children.

It was initially thought that MBI would be inappropriate for children who had clinical ADHD but case observations have shown that these interventions are well tolerated for children with this condition (e.g., Semple et al., 2005). MBI also appears to be appropriate and to have utility for adolescents with a clinical diagnosis of ADHD (e.g., Bogels et al., 2008; Sing et al., 2009; Van der Oord et al., 2008). In non-clinical controlled studies, MBI has produced superior improvements in attention on neuro-cognitive (e.g., Bogels et al., 2008; Saltzman & Goldin, 2008) and behavioural (e.g., Napoli et al., 2005; Semple, 2005; Semple, 2006; Semple et al., 2010) tests in both children and adolescents. The role of MBI in improving attention has become a focal point in recent literature because attention and executive function processes appear central to emotional regulation (Semple et al., 2010). These emotional regulation processes are thought to be important in protecting children from developing anxiety and depressive disorders and enhancing mechanisms that regulate stress (e.g., Mendelson et al., 2010).

As discussed earlier in this chapter (see p. 32) a positive relationship has been demonstrated between qualities of mindfulness and higher and more stable levels of self-esteem (e.g., Heppner & Kernis, 2007). Therefore, if MBI enhances qualities of mindfulness, these interventions might also improve self-esteem. Research into the effect of MBI on self-esteem in children is minimal. Outcomes are ambiguous with positive effects in one study with adolescents (Biegel et al., 2009) but no significant change compared to controls in another study with children (Coholic et al., 2011). One

reason for this discrepancy was that the Coholic et al. (2011) study involved a unique mindfulness art-based intervention (i.e., the holistic arts-based group program) which varied considerably from the more common MBSR program used in the Biegel et al. (2009) study. Given that there is good reason that MBI should create higher and more stable self-esteem (Heppner & Kernis, 2007) further research to clarify this relationship is warranted.

Although efforts to adapt and test mindlessness interventions for youth over the last 15 years have shown potential promise for many prevalent childhood psychological problems, some researchers have argued that the current supporting evidence remains insufficient and more rigorous studies are needed (Greenberg & Harris, 2011). Recently, Zoogman Goldberg, Hoyt and Miller (2014) attempted to address this concern by conducting a meta-analysis to determine the overall effectiveness of mindfulness with youth. Of the 1194 studies reviewed, 20 directly investigated mindfulness-based treatments in children and/or adolescents. The results showed that on measures of non-psychological symptoms (i.e., wellbeing, and social skills) there were small overall effect sizes ($d = 0.122 - 0.293$). However, for psychological symptoms, the effect sizes were small to moderate ($d = 0.253 - 0.494$). The effect sizes were higher for clinical samples ($d = .5000$) compared to non-clinical samples ($d = 0.115$) suggesting that MBI for youth have a stronger effect on reducing negative symptoms than on increasing positive functioning (Zoogman et al. 2014). Although this review was limited by the small number of studies examined ($k=20$) the findings provided encouraging evidence for the benefits of MBI for children with psychological difficulties.

Mindfulness-Based Intervention for Children from Disadvantaged Backgrounds

There is accumulating evidence that MBIs are feasible and well accepted by children and their parents from disadvantaged backgrounds (including low socioeconomic and/or ethnically diverse populations (e.g., Liehr & Diaz, 2010; Mendelson et al., 2010, Napoli et al., 2001; Napoli, 2005). In particular, MBI has been shown to effectively reduce stress responses (e.g., Mendelson et al., 2010) and negative affective states (e.g., Liehr & Diaz, 2010) in children from disadvantaged backgrounds. These children are at increased risk for psychological problems and low self-esteem, and are less likely to access community based mental health services compared to children from mainstream backgrounds (Sawyer et al., 2001; Twenge & Campbell,

2002). The development of effective treatment programs that cater specifically for these groups is therefore a priority.

Mindfulness therapeutic approaches may be particularly beneficial to children from disadvantaged backgrounds because these approaches are less reliant on the didactic teaching processes used in traditional CBT programs. Research has shown that experiential based learning curriculum produce better learning outcomes for children from culturally diverse groups (Gay, 2000; Thompson & Gauntlett-Gilbert, 2008). Much of the content in MBI is delivered via experiential activities that provide children the opportunity to actively cultivate qualities of mindfulness. More traditional CBT type programs rely on didactic teaching modalities for instruction that are language dependent. MBI is also compatible for children from culturally diverse backgrounds because the techniques include attention to breathing, which is a universally accepted practice in many different religions (Canda & Furman, 1999).

School-based programs are critical for improving access to mental health services for children from disadvantaged backgrounds (Sawyer et al., 2008). Accessing mental health services in schools alleviate many of the common barriers to treatment in the community, such as time, location, stigmatization, transportation and cost (Barrett & Pahl, 2006; Sawyer et al., 2008). Many of the MBI treatment studies have been conducted in school settings (e.g., Beauchemin, Hutchins, & Patterson, 2008; Flook et al., 2010; Joyce, 2010; Lee, 2006; Lee et al., 2008; McCloy, 2005; Mendelson et al., 2010; Napoli et al., 2001; Semple 2007; Semple et al., 2010; Semple, Reid, & Millar, 2005; Wall, 2005; Wicksell et al., 2008). The findings of these studies suggest that MBI is well accepted in the school environment with favourable outcomes for children's psychological difficulties. A major criticism of school-based mental health programs is the lack of parent involvement (Flaherty, Weist, & Warner, 1996). In response to these concerns, school-based mental health services are increasingly including concurrent parent programs to enhance their effectiveness (Neil & Christensen, 2009).

Psychological Assessment of Mindfulness

Further development of short and easy to administer mindfulness assessment tools for children is required so that inquiry into the mediating factors of mindfulness treatment research can be made. A body of research now exists to support the reliability

and validity of assessment tools that measure qualities of mindfulness in adults (e.g., Kentucky Inventory of Mindfulness Skills; Baer, Smith & Allen, 2004; MAAS; Brown & Ryan, 2003). The MAAS (Brown & Ryan, 2003) was developed through the experiences of mindfulness experts and a critical review of the mindfulness research. This assessment is advantageous as it is short and easy to administer. This 15-item scale is focused on the presence or absence of attention to, and awareness of, what is occurring in the present. (Baer, Smith, & Allen, 2004; Coyne, 2008). Availability of mindfulness assessment tools with good psychometric properties is important for treatment research particularly when attempting to determine mediating factors in the treatment. Without a measure that shows which attributes or qualities of mindfulness have been enhanced and are correlated with improvement in participants on the outcome measures, it is not possible to draw precise conclusions about what specifically mediated the change. Further development of short and easy to administer mindfulness assessment tools for children is warranted and critical for answering such questions (Baer, Smith, & Allen, 2004).

Chapter Summary

Mindfulness means “paying attention in a particular way on purpose in the present moment non-judgmentally” (Kabat-Zinn, 1990, pp. 29-30). MBI have been applied successfully to adults with a range of mental health conditions and physical problems. The mechanism of action by which MBI is thought to improve mental health is via changes to areas of the brain that are responsible for emotional regulation. MBI might alter emotional regulation via processes such as self-management, attention deployment, cognitive change (i.e., via decentering and exposure) or response regulation (e.g., inducing a relaxation response). MBI may also cultivate secure and high self-esteem. Research into the feasibility, effectiveness and efficacy of MBI in children is in its infancy. The research available indicates that MBI is feasible for children and is well accepted within a school setting. MBI has been shown to be effective for children from disadvantaged backgrounds and this may be due to the emphasis on experiential rather than didactic processes, which are better suited to these populations. Regarding psychological outcome studies, there are mixed outcomes. Some studies have shown superior reductions in anxiety, mood problems and improvements to attention and self-esteem compared to control groups. Reliable and validated assessments of mindfulness have been developed for adults (e.g., MAAS, Brown & Ryan, 2003) but the development of measures for children is limited. The development of short and easy to administer mindfulness assessment tools for children is required to facilitate further inquiry into MBI treatment.

Chapter 5

Rationale and aims of the Present Study

The development of effective and well accepted psychotherapeutic treatments for children have become a priority in research. Disadvantaged children are at increased risk of having mental health problems, and are less likely to access services compared to their mainstream counterparts. Interventions that can be implemented in school settings are particularly useful because children are more likely to be available to access mental health services and support at school (Sawyer et al., 2008).

The present study comprised two phases. In the first phase, a MBI was adapted for children from an existing MBCT program originally developed to prevent depression relapse in adults (Segal et al., 2002). We then investigated the feasibility and acceptability of running this eight week adapted MBI program in a school setting with disadvantaged children (aged between 8 to 12 years). Based on the information from the pilot study (phase 1) the adapted program was further refined to meet the specific needs of the children in this school. The second phase of the study was a larger cluster randomised controlled study looking at the efficacy and effectiveness of the modified MBI for improving psychological symptoms and self-esteem in disadvantaged children.

Although traditional CBT programs have been effective in reducing anxiety in children, outcomes have been poorer for depression and attention problems. MBI has shown promising initial results for improving anxiety, depression, self-esteem and attention problems in children. However, these studies have often lacked active control groups that rule out expectancy biases and any non-specific treatment elements of a group program (e.g., the benefit of participating in a supportive group). In addition, MBI has not yet been compared to other psychological treatment programs. The intention of the second phase of this research was to compare the effects of the adapted MBI to an active control group (AC) (teacher run health and wellbeing class) and a widely used psychological treatment program for children called “Relaxation for Children” (Rickard, 1992). Psychological variables were measured on multi-informant standardised measures.

The study retained elements of efficacy criteria by the use of randomisation procedures and inclusion of an active control as the comparison group. The study also retained elements of effectiveness in that the program was implemented in a non-research based school setting with a non-clinical sample of disadvantaged children. These approaches have been recommended by Chambless and Hollen (1998) who made significant contributions to the work around defining what constitutes an empirically supported psychological intervention (Chambless & Ollendick, 2001).

A further aim of the study was to establish the reliability and acceptability of the adapted mindfulness assessment tool for use in children (MAAS, Brown & Ryan, 2003). The appropriateness of this measure for use in children was to be initially evaluated in the pilot study with further adaptations to be made for its use in the main study. A general measure of psychological wellbeing was included as a dependent variable to investigate whether the program improved psychological wellbeing in children.

Chapter 6

Pilot Study

The main aims of the pilot study were: (a) to determine the appropriateness and acceptability of an adapted MBCT program (Mindfulness Pilot Program [MPP]) for primary school children from disadvantaged backgrounds; (b) to investigate qualitative change by presenting case studies; (c) to make modifications to the MPP before undertaking a larger study into the effectiveness of this program in the second stage of this research; and (d) to investigate the acceptability of an adapted measure of mindfulness in children (MAAS; Brown & Ryan, 2003). It was predicted that from pre- to post-treatment, participants would report lower levels of anxiety and depression and report higher levels of self-esteem. It was also predicted that parents and teachers would report an overall reduction in internalising problems in the children.

Method

Participants.

The children in the study all lived and attended school in a local government area of Melbourne that has been categorized by the National Centre for Social and Economic Modelling (NATSEM; University of Canberra) as having the highest level of risk for disadvantage (Phillips, Miranti, Vidyattama, & Cassells, 2013). Children were selected for the pilot study based on teacher referral. The Grade 6 teachers volunteered to participate in the study and made recommendations about which children in their class would benefit most from the program based on the eligibility criteria (specified below). The teachers recommended a total of 10 children. Nine parents consented to their child's participation. Five children came from one class and four children from another class.

To be eligible for the study, children had to meet the following criteria: (a) have low self-confidence as reported by the teacher; (b) have internalising symptoms such as anxiety, affective problems or somatic complaints as reported by the teacher; (c) have a non-verbal IQ of more than 80; and (d) have no identified intellectual or physical

disability as established by student records after permission to participate in the research was obtained.

Nine Grade 6 children from a Victorian State primary school participated in the MPP study. The school was located in a culturally diverse and low socioeconomic area of Melbourne, Australia. Of the nine children, seven were female and two were male. The mean age of the children was 11.5 years ($SD = .41$). All children were born in Australia, were permanent residents of Australia and did not identify with being Aboriginal or Torres Strait Islanders. The children did not have a diagnosed physical or intellectual disability. All children lived with their biological parents, who were all born overseas. Two thirds of the parents were born in Vietnam, while the others were born in El Salvador or Malta. Seven of the nine children came from a family where the main language spoken was not English. These languages were Vietnamese, Cantonese and Maltese.

In terms of English proficiency, seven (77.8%) mothers and eight fathers (89.8%) had adequate written and spoken English language communication such that an interpreter was not required. Two mothers (22.2%) and one father (11.1%) required an interpreter for both written and spoken English. Parent education levels of the children in the sample were generally lower than national norms. All mothers in the sample were involved in unpaid work in the family home and about half the fathers were employed in unskilled work (55.5%) and about one third (33.4%) were unemployed for more than 12 months.

Cognitive testing was conducted to screen for unidentified learning problems in the children prior to inclusion in the program. On the Ravens Progressive Matrices (RPM) test, non-verbal functioning abilities in the sample were evenly distributed where four of the nine children scored around the 50th percentile and two out of nine children scored below and above this range, which is what would be expected in a normal population. However, on the Crichton Vocabulary (CVS) test, all children in the sample scored at the 50th percentile or below with most children (66.7%) scoring between the 5th and 10th percentile. This was to be expected given that the majority of the children were from non-English speaking backgrounds. These results are not indicative that the children had lower verbal cognitive ability compared to a typical sample but rather are likely to reflect the bilingual status of the children. This

suggestion is consistent with research showing that bilingual children (where the first language is a language other than English) are disadvantaged on English tests up until the teenage years (e.g., Hammer, et al., 2012) and sometimes into adulthood (Bialystok & Luk, 2012). Furthermore, the children in this school were heavily monitored and screened by the literacy teacher and school speech pathologist for learning and language based disorders from Prep. None of the children had a diagnosis of a communication or learning disorder on their school file.

Measures

The Raven's Progressive Matrices (RPM; Raven, 1988).

This is a widely used intelligence test in research and applied settings. For each test item, children are asked to find the missing pattern in a series of visual items. Each set of items becomes progressively more difficult, requiring greater cognitive capacity to encode and analyse. RPM was designed primarily as a measure of Spearman's *g*. There are no time limits and simple oral instructions can be given. The RPM has good test-retest reliability (between .70 and .90) and good internal consistency coefficients (between .80 and .90). Correlations with verbal and performance tests range between .40 and .75. The measure was included to screen for children who had cognitive difficulties (Raven, 1998) and did not meet eligibility criteria for inclusion in the study (i.e., non-verbal IQ<80).

The Crichton Vocabulary Scales (CVS; Raven, 1988).

This test was designed to measure verbal intellectual ability, which is being able to master, recall and reproduce verbal information. However, in the present study, this assessment was used to indicate overall levels of English proficiency for the children in the sample so that we could better tailor the program to the needs of the children in the sample that predominantly came from non-English speaking backgrounds. Performance on verbal cognitive tests in English by children with English as a second language has been shown to reflect their English proficiency rather than cognitive ability (Baldizon-DeNaclerio, 1999). The CVS has two sets with a total of 80 words. Children are asked to explain the meanings of words orally. No fixed time is set for completion of the test. Interpretation largely emphasises development of verbal skills in relation to similar age groups. Total scores were converted to percentile ranks for use in the present study (Raven, 1988).

Mindfulness Attention Awareness Scale (MAAS; Brown & Ryan, 2003).

This questionnaire was developed from the experiences of mindfulness experts and through critical review of the mindfulness research. The MAAS focusses on the presence or absence of attention to, and awareness of, what is occurring in the present. It comprises 15 items, which measure the way in which adults provide self-reported ratings of various experiences on a six point Likert scale (e.g., “I tend to walk quickly to get where I’m going without paying attention to what I experience along the way”). The MAAS is scored by calculating a total of all the responses with higher scores demonstrating superior qualities of mindfulness. Psychometric analysis for the MAAS was conducted on seven separate samples ($N=1,492$) and results indicated that the scale has good internal consistency (Cronbach’s Alpha coefficients ranging from .82 to .87). Correlational analyses indicated good convergent and divergent validity The MAAS measured a unique quality of consciousness that related to a variety of well-being constructs, differentiated mindfulness practitioners from others, and was associated with enhanced self-awareness (Brown & Ryan, 2003). A clinical intervention study with I have cancer patients indicated that increases in mindfulness over time related to declines in mood disturbance and stress (Baer, Smith, & Allen, 2004; Coyne, 2008). See Appendix A for the original MAAS.

The MAAS scale was adapted by the current researcher so that it could be used with the children in this study. Each statement was simplified while attempting to retain its original meaning (e.g., “I could be experiencing some emotion and not be conscious of it until sometime later” was changed to “I don’t know what I’m feeling until later”). In some cases, the statements were changed to make them more appropriate for children (e.g., “I drive places on automatic pilot and then wonder why I went there” was changed to “I walk into a room and then wonder why I went there”). Qualitative data on the acceptability and appropriateness of these adaptations was taken via observations of the children as they completed the measure. Children were explicitly asked to tell the researcher every time they did not understand an item. This data was used for further adaptation of the scale for the main study (see Chapter 7 for further details). See Appendix A for the MAAS adapted for the pilot study.

The Beck Youth Inventories of Emotional and Social Impairment – Second Edition (BYI-II; Beck, Beck, Jolly, & Steer, 2005).

These are five 20-item self-report standardized scales that may be used separately or in combination to assess a child's experience of depression, anxiety, anger, disruptive behaviour and self-concept. The scales measure symptomology that children may experience in association with mental health problems. The scales are written at a second grade reading level (or for a child aged 7 years). The three scales of interest to the present study are: (a) Self-Concept Inventory for Youth, which measures self-perceptions such as competency, potency and positive self-worth (e.g., "I work hard"); (b) Anxiety Inventory for Youth, which measures children's fears, worrying, and physiological symptoms associated with anxiety (e.g., "I worry someone might hurt me at school"); (c) Depression Inventory for Youth, which measures symptoms of negative thoughts about self or life, and future, feelings of sadness, and physiological indications of depression (e.g., "I think that my life is bad"; Beck et al., 2005).

Normative data were based on a sample of 800 children aged between 7 and 14 years stratified to match the U.S. census by race/ethnicity and by parent education and by gender. The scale has high internal consistency (Cronbach's Alpha coefficients ranging from .86 to .96). Reliability is good (Standard Error of Measurement ranged from 2.00 to 3.39) as is test-re-test reliability (ranged from .74 to .93). The validity of the scale was also good (Beck et al., 2005). T-scores and clinical classification of self-concept, anxiety and depression were the dependent variables used in the present study (Beck et al., 2005).

Steer, Kumar, Beck, and Beck (2005) examined the dimensionality of the scales measured by the BYI-II. Findings indicated that the Anxiety and Depression inventories were uni-dimensional, but that the Self-Concept Inventory comprised two underlying dimensions; self-esteem and competency. However, the overall pattern of results supported the use of the self-concept inventory as one-dimensional for clinical or research purposes (Steer et al., 2005). Despite longer questionnaires being available to measure childhood self-esteem (e.g., Piers-Harris children's self-concept scale) the BYI-II was designed for a lower reading age (age = 7 years) and had fewer questions, which was advantageous for the current sample (aged 8 to 12 years) because of their lower level of English acquisition. See Appendix A for a copy of the BYI-II.

The Child Behavior Checklist for Ages 6-18 (CBCL/6-18; Achenbach, 2001a).

This questionnaire instructs parents or other close relatives, and/or guardians to rate the child's competencies and behavioural/emotional problems. It includes 118 items that describe specific behavioural and emotional problems, plus two open-ended items for reporting additional problems. Parents rate their child on a three point Likert scale according to how their child has presented within the past six months. In the present study, this time frame was changed to two weeks. This change was made to help ensure that the test was sensitive to any changes in the children's symptoms that might have occurred over the eight week program. The change was communicated to the parents via a written slip attached to the CBCL/6-18 form as well as verbally.

The CBCL/6-18 yields scores on internalising, externalising and overall problem behaviours. The Internalizing problems scale comprises three separate subscales (Anxious/depressed; Withdrawn/depressed; Somatic complaints). The Externalizing problems scale comprises two separate subscales (Rule breaking behavior; Aggressive behaviour). Raw scores for each scale are converted to T-scores (M=50, SD = 10). The CBCL/6-18 also includes six DSM-orientated scores which are: Affective problems; Anxiety problems; Somatic problems; Attention deficit/hyperactivity problems; Oppositional defiant problems; and Conduct problems (Achenbach, 2001a).

The scales were normed on 1,753 children aged six to 18 from the United States, stratified for socio-economic status, ethnicity, region and urban-suburban-rural residence. The CBCL/6-18 has good test- re-test reliability (ranging from .80 to .94), good internal consistency (Cronbach's Alpha coefficient ranged from .63 to .97) and good inter-rater reliability between parents (ranging between .57 and .88). Validity for the CBCL/6-18 has been well established in the research. T-scores and clinical classification categories of the Internalizing problems scales were the outcome variables of interest for the present study. See Appendix A for a copy of the CBCL/6-18 (Achenbach, 2001a).

The Teacher's Report Form for Ages 6-18. (TRF/6-18; Achenbach, 2001b).

This questionnaire is designed to obtain teachers' reports of children's academic performance, adaptive functioning, and behavioural/emotional problems. The TRF/6-18 has 118 problem items, of which 93 have counterparts on the CBCL/6-18. The remaining items include school behaviours that would not be observed by parents such

as: difficulty following directions; disturbs other pupils; and fails to finish assigned tasks. Teachers rate the child for how true each item is now or was within the past two months, using the same three-point response scale as for the CBCL/6-18 described above. On the CBCL/6-18 instructions specify that the student's behaviour is rated according to the past six months. As this may not have reflected change over an eight week program period, teachers were instructed to report on their student's behaviour for the past two weeks. This was communicated to the teachers via a written slip attached to the TRF/6-18 form as well as verbally. The TRF/6-18 yields t-scores and percentiles for the same eight syndrome scales and six DSM-orientated scales that are also scored from the CBCL/6-18 and Internalizing, Externalizing and Overall problem scores.

The normative sample for the TRF/6-18 consisted of 4,437 youth aged 6 to 18 and was stratified to be representative of socio-economic group, ethnicity and regions of the US. Test- re-test reliability ranged from .60 to .96 and internal consistency was acceptable (Cronbach's ranged from .72 to .97). Inter-rater reliability between teachers was a little low (between .51 and .76). As with the CBCL/6-18, the TRF/6-18 has been shown to have excellent validity and is a widely researched clinical assessment tool. T-scores and clinical classification categories of the Internalizing problems scales were the outcome variables of interest for the present study. See Appendix A for a copy of the CBCL/6-18 (Achenbach, 2001b).

Program evaluation form.

The program evaluation form was designed for children to provide feedback about the MPP. This form comprised five statements that children were required to rate according to the extent to which the statement applied to them during their participation in the MPP on a five point rating scale (*Never, Sometimes, In-between, Often, and Always*). Statements related to possible experiences relevant to participating in the MPP, including ("The group was fun", "The group helped me feel more confident", "The group helped me feel happier in my life", "I have been able to practice some mindfulness outside the group", and "The activities were hard to understand"). The children were also given space to provide written feedback in response to three questions ("Was there anything that you liked or disliked about the group?", "What were your two favourite activities in the group?", "Which activities didn't you like doing?"). See Appendix A for a copy of the program evaluation form.

Procedure

Ethics approval was gained from the Swinburne Human Research Ethics Committee (see Appendix B for approval letter) and the Department of Education and Early Childhood Intervention Ethics Committee (see Appendix B for approval letter). The School Principal also gave written consent for the study to be conducted (see Appendix B for approval letter).

The researcher was employed at the Primary School where the study was conducted as one of the in house psychologists. The study began at a similar time point to when the researcher was employed at the school. The researcher had no prior or concurrent relationship with any of the children who were included in the study. There was another psychologist working at the school available to see any of the children during their participation in the study so as to avoid multiple roles. Much of the researcher's regular work at the school involved conducting assessments, screening children in the early years, and funding applications for government support for students to be included on the Program for Students with Disabilities and Impairments.

The researcher conducted an information session for the teachers at a staff meeting to demonstrate concepts of mindfulness and explain the purpose of MPP. Teachers were invited to take part in the research at the meeting. All teachers at the school (including the Grade 6 teachers) were given written information about the study at the staff meeting in the form of a Teacher Explanatory Statement (see Appendix B) that described the purpose of the study and the nature of the treatment program. The two Grade 6 teachers volunteered to participate in the study after the information night. It was also hoped that the Grades 4 and 5 teachers would participate in the main phase of the study. The teachers referred children based on the selection criteria; that the children had low self-confidence or high levels of anxiety or shyness (see Participants section above). The teachers then approached parents and invited them to give verbal permission for their children to participate. The teachers met with the researcher at the beginning, and following the completion of the program. During these meetings, the teachers completed measures about the children.

Parents who gave verbal permission for their children to participate were then interviewed by the researcher. During the initial parent interview, verbal and/or written information was translated, when required, by a qualified interpreter for those parents

who could not speak and/or read English ($n=3$ parents). A plain language statement for parents (see Appendix B) was explained verbally by the researcher then read by the parent or interpreter. Following this, the parent was asked to sign the parent consent form (see Appendix B). Parents were informed that their participation was voluntary and that they could withdraw from the study at any time. The parents were told that their children's psychological test information would be kept confidential and only incorporated into their psychological school files with their written consent, which was marked as optional on the consent form. For practical purposes, some parents signed the consent forms at home and returned them to the school in a sealed envelope marked "confidential".

Parents met with the researcher at the beginning, and following the completion of the program. During these meetings, the pre and post measures were completed. Demographic characteristics of all children and their families were obtained via interview with the parent and access to the school records after the parent's permission to access this information was gained. For practical purposes, some parents completed assessment forms at home and returned them to the school in a sealed envelope marked "confidential".

After written parental permission was received, the researcher met with the children individually at the beginning, and following the completion of the program. The purpose of these meetings was to complete the children's plain language statement and consent form (see Appendix B) as well as to complete the pre and post measures. It was explained to the children that it was their choice to participate in the study and that they could withdraw at any time. The children were also told that their personal information would be kept private.

Description on the Mindfulness Pilot Program (MPP).

The MPP ran for eight weeks during each school term from Term Two 2007 to Term One 2008. Children attended the MPP weekly for a time period of one and a half hours. They were also encouraged to perform daily mindfulness practices for homework. The MPP was developed based on the MBCT program described in Segal et al. (2002) after permission was obtained from the author (Dr Zindel Segal). Other specific techniques for mindfulness approaches in children were sourced from the mindfulness treatment research specific to children and adolescents (Miller, Rathus, &

Linehan, 2007; Saltzman, 2008; Semple & Lee, 2008). The principles used to modify adult mindfulness interventions for children were based on cognitive developmental theory and previous outcome efficacy research for children (Coyne, Burke, & Freeman, 2008). The cultural demographics of the children and their developmental stage were also taken into consideration. The MPP incorporated elements of mindfulness meditation (e.g., *raison* exercise, body scan, breath meditation) and mindfulness cognitive therapy (e.g., ABC models of thinking). The cognitive therapy component was similar to traditional cognitive therapy in that it involved the children thinking about their thoughts. It was different to traditional cognitive therapy as there was no emphasis on changing thinking.

Each session was co-facilitated by two clinicians who were Doctorate of Clinical and Counselling Psychology students at Swinburne University of Technology, Melbourne, Australia. One clinician (the author of this thesis) is an experienced psychologist who also worked at the school as their “in house” school psychologist. The other clinician was a provisional psychologist whose key area of research focused on mindfulness treatment programs. Both facilitators had attended formal mindfulness workshops and practiced mindfulness meditation regularly in their personal lives. The facilitators met before and after each group to plan and discuss the progress of individual children. Before each session, the facilitators participated in a 20 minute breath meditation. The children attended the sessions in a quiet room within the school grounds during school time. Qualitative observations of sessions were recorded to facilitate further adaptation of the program for the second phase of this research.

Appendix C provides an overview of the MPP program. Treatment focused on fostering skills in mindfulness that would enable the children to better regulate their emotions. It was hoped that the program would help reduce psychological symptoms such as anxiety, depression, poor attention and low self-esteem. The MPP aimed to help children understand what is meant by mindfulness and cultivate the experience of mindfulness in their everyday lives. This was done by providing the children with opportunities to experience mindfulness via standard adult mindfulness practices (e.g., breath meditation, body scan, Hatha Yoga) that were simplified for children. Other mindfulness activities were created specifically for the children (e.g., experiencing optical illusions, clock meditation). The children were encouraged to practice these

activities on a daily basis at home. Children were rewarded with small prizes (e.g. inexpensive toys or sticker sheets) for their efforts to practice at home.

The program also included sessions for the parents and teachers to help them support the children in the program and understand the principles of mindfulness that were being cultivated. These sessions were run at the same time as the data collection points. Researchers used mindfulness and acceptance based techniques when communicating with the parents, teachers and children in the program. This meant that the clinicians/researchers refrained from displaying themselves as the experts to the teachers, parents or children but rather, modelled an open and accepting manner in response to the children's behaviour and teacher/parent distress. During the parent and teacher meetings, key concepts of the MPP program were demonstrated. Objectives of the program were explained to parents and teachers including simple demonstrations of mindfulness. For instance, the parents were taken through some of the brief mindfulness meditations. Parent involvement with the child's home practice exercises was encouraged.

Results

Quantitative results.

A repeated measures design was used to examine pre- to post-test changes to the dependent variables (i.e., multi-informant psychological symptoms, self-concept, measure of mindfulness and psychological wellbeing) after participation in the MPP program. Statistical analyses were conducted using SPSS 19 (SPSS, 2010). Given the small sample size ($N=9$) non-parametric tests were used. A one-tailed Wilcoxon signed-rank test was used to test for significant differences between pre- and post-test scores on the dependent variables. Effect sizes were calculated using the Wilcoxon z statistic, by dividing the z value by the square root of N where N equalled the number of cases (Pallant, 2007). Effect sizes were calculated as the statistic d . Effect sizes were evaluated using criteria of Cohen (1988) who suggested that $d = 0.2$ be considered a "small" effect size, 0.5 represents a "medium" effect size and 0.8 a "large" effect size. The alpha coefficient was set to a significance level of .05. Pre and post T score means and standard deviations for the BECK, CBCL/ 6-18 and TRF/6-18 scores are presented in Table 2.

Table 2

Mean T-Scores and Standard Deviations at Pre and Post-Test and Wilcoxon z Value Statistic and Effect Sizes of Outcome Measures for Self-Report, Parent-Report and Teacher-Report Data

Variable	<u>Pre (N = 9)</u>		<u>Post (N=9)</u>		z	d
	Mean	SD	Mean	SD		
Self-concept	40.56	6.80	45.78	7.12	-2.52*	.59
Anxiety	52.67	5.39	45.22	6.08	-2.67 *	.63
Depression	52.33	7.52	46.56	8.22	-2.68 *	.63
	<u>Pre (N=8)</u>		<u>Post (N=8)</u>		z	d
	Mean	SD	Mean	SD		
Parent internalising	63.38	7.54	52.63	12.86	-2.52*	.63
	<u>Pre (N=9)</u>		<u>Post (N=9)</u>		z	d
	Mean	SD	Mean	SD		
Teacher internalising	54.33 (9)	4.47	46.56 (9)	2.83	-2.53*	.60

Note. * $p < .05$; Self-concept = Self Concept T-Score from the Beck Youth Inventories 2nd Edition; Anxiety = Anxiety T-Score from the Beck Youth Inventories 2nd Ed Anxiety Inventory; Depression = Depression T-Score from the Beck Youth Inventories 2nd Edition Depression inventory; Parent internalising = Child Behavior Checklist for Ages 6 to 18 Internalizing T Score; Teacher internalising = Teacher Report Form for Ages 6 to 18 Internalizing T Score.

As shown in Table 2, there was a significant reduction in ratings of self-concept from pre to post test ($z = -2.52, p < .05, d = 0.59$) with a medium effect size. The mean pre-test score for this measure fell within the below average range (see Table 3 for clinical ranges of BECK scores). There was also a significant reduction in Anxiety ($z = -2.67, p < .05, d = 0.63$) and Depression ($z = -2.68, p < .05, d = 0.63$) from pre- to post-test both with a medium effect size. Although these changes were statistically significant, all scores were classified in the normal range at the beginning of the program according to the ranges provided by the BECK manual (Beck et al., 2005; see Table 3).

Table 2 shows that there was an overall significant reduction in the children's internalising problem behaviours reported by their parents ($z = -2.52, p < .05, d = 0.63$) from pre- to post-test with a medium effect size. The changes were clinically significant as mean scores for parent internalizing were in the clinical range at the beginning of the program (see Table 3 for clinical ranges of CBCL/6-18 scores provided by the CBCL 6/18 manual; Achenbach, 2001a).

There was also a significant overall reduction in the children's internalising problems reported by the teachers (teacher internalising; $z = -2.53, p < .05, d = 0.60$) with a medium effect size. Although these changes were statistically significant, the mean teacher internalizing score was in the normal range at the beginning of the program so the clinical significance of these results is questionable (see Table 3 for clinical ranges of TRF/6-18 scores provided by the TRF/6-18 manual; Achenbach, 2001b).

Table 3

Clinical Ranges and Severity Levels of the BECK, CBCL/6-18 and TRF/6-18 Based on T-Scores

BECK Clinical Ranges	Score	Severity Level
Anxiety and Depression T scores	T = 70+	Extremely elevated
	T = 60-69	Moderately elevated
	T = 55-59	Mildly elevated
	T = <55	Average
	T = > 55	Above average
Self-Concept T scores	T = 45-55	Average
	T = 40-44	Lower than average
	T = <40	Much lower than average
CBCL/6-18 and TRF/6-18 Clinical ranges	Score	Severity Level
Internalizing T scores	T = < 60	Normal Range
	T = 60-65	Borderline Range
	T = >65	Clinical Range
Attention Problem T score; DSM scales for Anxiety and Affective T scores	T = < 65	Normal Range
	T = 65-70	Borderline Range
	T = >70	Clinical Range

Feasibility and acceptability of treatment.***Attrition.***

Among the nine children who participated, the overall attendance rate was good with six out of nine children (66.7%) attending all eight sessions and eight out of nine children (88.9%) attending seven sessions. One child out of nine completed only five sessions.

Results from program evaluation form.

Children completed the program evaluation form following their participation in the program. Table 4 shows the frequency of responses for each item on this evaluation.

Table 4

Frequency of Children's Responses on the MPP Program Evaluation Form f (%)

Category Endorsed	Never	Sometimes	In-between	Often	Always
<i>Item Description (N=9)</i>					
The group was fun	0 (0)	0 (0)	2 (22.2)	4 (44.4)	3 (33.3)
The group helped me feel more confident	0 (0)	2 (22.2)	2 (22.2)	4 (44.4)	1 (11.1)
The group helped me feel happier in my life	0 (0)	2 (22.2)	1 (11.1)	5 (55.5)	1 (11.1)
I have been able to practice some mindfulness outside the group	0 (0)	1 (11.1)	2 (22.2)	4(44.4)	2 (22.2)
The activities were hard to understand	3 (33.3)	6 (66.7)	0 (0)	0 (0)	0 (0)

As can be seen from Table 4, the children's responses on the program evaluation form were generally positive. Five out of nine children reported that the "group was fun", "often" or "always" (77.7 %). Five out of nine of the children responded "often" or "always" that the "group helped (them) feel more confident" (55.5%) and six out of nine children felt that the group "helped (them) feel happier in their life" (66.7%). Although six out of nine children reported "often" or "always" that they were able to "practice the mindfulness at home", the children verbally reported difficulties with completing and understanding the home practice. Six out of the nine children endorsed "sometimes" that "the activities were hard to understand".

Verbatim responses on the program evaluation form indicated that the children were able to identify components of the program that they liked and disliked. For example, two children reported that they did not enjoy the body scan exercise. The majority of children did not report dislike for any of the activities. Positive comments tended to be about activities that occurred towards the end of the program. General comments from the children with reference to how the MPP may have helped them were uncommon with the exception of one child who wrote that the group "got my mind off things".

Clinical observations during the mindfulness pilot program (MPP).

The "get to know each other" ice-breaker was the first activity of the program. The activity required the children to interview each other and then take turns introducing their partner to the wider group. Some of the children had difficulty thinking of things to ask their partner and remembering what they had learnt about their partner to share with the group. It appeared that these children found the demands of this task overwhelming. Some of the children froze when it was their turn to present their partner and could not remember things about their partner to share in front of the group. This activity resulted in increased tension for some children.

The children were enthusiastic and showed commitment to the group functioning successfully. They provided useful ideas for rules and consequences for the group members. During the program, the children continued to show commitment to group functioning as they openly shared when they did not think that the group was functioning well, which was usually due to disruptions during meditation practice. The children were always able to work as a team to adjust rules and consequences

appropriately if they felt things were not working. For example, with the assistance of the facilitators, the children problem solved a solution for people who could not stop giggling during meditation. The group decided that when this occurred the child would be asked to wait quietly outside the room until the meditation ended. The children respectfully followed this new requirement without the facilitators needing to intervene.

The children appeared to understand and pay attention to the idea of confidentiality of group discussions. Given that the children were all from the same classroom, the therapist was concerned about the potential for out of group discussion and/or unhelpful gossip. However, to the knowledge of the group facilitators and classroom teachers, this did not occur. It was apparent to the facilitators that the group members were respectful of each other's privacy.

The definition of mindfulness was given to the children via a handout and discussed in the following session during the homework discussion. Observations from these discussions indicated that the children frequently did not read the handouts provided for home practice. It was also apparent that the children did not understand what was meant by mindfulness until the facilitators spent quite a bit of time going through the concept. Throughout the MPP, a lot of time was required to revisit this definition and mindfulness concepts with the children. This was most probably because although the experiences of mindfulness that the children accessed during the program were available to them, understanding the conceptual definition of mindfulness was a different story. In general, the children had weaknesses in English language communication, which potentially reduced their capacity to understand such complex concepts. Where children had trouble understanding the verbal definition of mindfulness, the activities that demonstrated these distinctions were most helpful. Most of the children showed a clear understanding of the judgment/observation exercise and were quite engaged during this activity.

Quite a few of the children could still see the object blindfolded or felt uncomfortable with a blindfold on. All children showed optimal interest and engagement for this activity to the point that the group ran out of time and that the follow up discussion needed to be conducted the following week. A few children demonstrated an understanding that thoughts are not facts by their responses on the worksheets.

The majority of the activities appeared to facilitate an experiential understanding of mindfulness. For example, the clock meditation stimulated much group discussion where five of the children showed a great deal of awareness of their internal experiences (e.g., thoughts about lunch and hunger, feelings of boredom and discomfort, internal impulses to giggle and disrupt others). The children who generally found it difficult to refrain from distracting others during meditation actually were able to contain their impulses to giggle and fidget or the need to leave the room during this meditation.

Children were highly motivated to earn the lucky dip prizes and worked hard to complete their homework. However, it was clear that the homework worksheets were often too difficult for the children to complete at home. The children found it hard to read the meditation scripts at home and practice them with only the written handouts as cues. They all commented during group discussions that their experience of meditation was more useful during group compared to home practice. The honesty policy of children saying whether or not they had completed their homework surprisingly appeared to work well with the exception of one child who often said he had done the homework but provided no evidence through his contributions during the group discussions that he had. The facilitators accepted his story on face value without question and provided him with verbal reinforcement for homework completion and the opportunity to win a lucky dip at the end of the session. Interestingly, towards the end of the MPP, this child began disclosing that he had not completed the homework.

Homework from the previous week was discussed at the beginning of each session. This served as an opportunity for concepts that were presented in the previous session to be reinforced by the children's real life experiences. This segment was also an opportunity for the children to share more generally about their real life challenges at school and at home. The children really opened up during these sessions and responded very well to the facilitators and each other. The open ended agenda allowed for material that the children wanted to discuss to be brought up.

The thoughts and feelings exercises were presented to the children over two weeks and reinforced by the home practice exercise (i.e., children were asked to keep pleasant and unpleasant event diaries). These activities represented a core cognitive component of the program. Three of the children were confused about these activities and struggled to complete the pleasant/unpleasant diaries for homework. The children

had difficulty understanding the distinction between thoughts and feelings and the concept that one situation could be looked at from different perspectives. Also, the children were provided with no formal structure (e.g., structure to observe their thoughts in the moment) to practice observation of thoughts (other than diary recording) and a few children complained that they did not want to think about their unpleasant thoughts or write them down. It was also clear that many of the children lacked the emotional vocabulary required to put their feelings into words, resorting to describing their feelings by thoughts or situations. The use of the word “pleasant” and ‘unpleasant’ was considered to be inappropriate for the children as most of them asked for clarification regarding the meaning of these words. The children appeared to understand the words “uncomfortable” and “comfortable” instead.

The mindful listening exercise required children to listen to three different 30 second samples of music and record their internal experiences. The children appeared highly engaged during this activity and the group sharing afterwards. The diversity of children’s experiences reinforced the concept that everyone’s experiences are unique even when presented with the same experience.

The children’s responses to the different mindfulness meditation exercises in the program were quite variable. The raisin exercise is a well-known adult mindfulness exercise and was very well received by the children. The children were able to focus during the raisin meditation and easily discuss their experiences as the group facilitator linked their discussion to concepts of mindfulness. The sitting breath guided meditation took between 5 to 10 minutes and was well received by the children. Even the children who reported overall difficulty during the meditations seemed to cope with the breath meditation. Only three of the children reported that they were able to practice this meditation at home. The body scan meditation went for 10 minutes, and the children exhibited a higher frequency of disruptive and/or challenging behaviours during (e.g., children distracting others by fidgeting or talking or giggling) this activity. It was noticeable that behaviour worsened over the duration of the meditation. The children responded positively to the breathing space meditation. Two children remembered to use it during the week when they encountered a difficult situation and shared these experiences in the follow up discussion. Other children stated that they could not remember what to do in the moment.

The children's responses to the more physical mindfulness activities were also quite variable. Most of the children appeared to enjoy the Hatha yoga practice but two children complained of physical discomfort. The remainder of the children found the yoga to be relaxing or did not really comment on their experiences. None of the children reported that they were able to practice yoga at home. The children were instructed to conduct their mindful walking in a large circle in a courtyard outside the group room. There were high levels of distraction during this activity as the children ended up walking together and distracting each other by talking and laughing.

The children appeared to find the final session of the program fun and were able to provide feedback about their experiences of participating in the MPP. The children were positive and engaged throughout the mindfulness corners game. A few children commented that this was the activity that they liked the most on their feedback forms. The party game gave the children an opportunity to relate more casually to each other and the group facilitators. The children showed high levels of engagement during the feedback session and appeared to appreciate the positive comments that the facilitators made about their progress in the group. The children generally had only positive feedback about the program. Negative feedback was around the homework being too long and difficult. The children mostly suggested more activities that involved doing things other than writing or talking (e.g., optical illusions etc.).

Summary of case studies.

Weekly qualitative observations were recorded for each participant. Qualitative data indicated that children responded to different aspects of the program depending on their individual preferences and learning styles. This meant that the diverse modalities in which the program was presented (e.g., visual, kinaesthetic, auditory) met the individual needs of the different children in the group. For example, participant G was more likely to talk about his feelings whilst engaged in a drawing activity, than during group discussions. Participant H was able to share powerful insights about her thoughts and feelings on the worksheets when she found it difficult to share during group discussions.

The children's level of engagement during meditation varied from appearing distracted and distracting others (participants B, C, and D) to children who appeared to remain focused and reported that they benefited from the meditation (participants A, E,

F, G, H, and I). In the case of the children who appeared distracted, the challenges they faced during meditation were discussed during the group time which appeared to raise their self-awareness retrospectively. For example, some of the distracted children were able to discuss their feelings of discomfort with the group in useful ways and think about other situations where these feelings (e.g., boredom, pain, restless legs) arose in their life. Like with anxiety during group sharing, the meditation (although challenging) provided children with a level of psychological discomfort to use mindful observation and acceptance strategies during the group.

Participants B, I and G showed limited understanding of the cognitive component of the MPP (i.e., unpleasant events diaries). Participant I appeared to have difficulty labelling his emotions, referring to his emotional state as “normal”, and participant B and G had difficulty seeing the difference between feelings and thoughts. By contrast, other children appeared to find the cognitive component of the program very useful (e.g., participant D, H, and E) as evidenced by their pleasant/unpleasant diaries during group sharing. Other children showed a limited emotional vocabulary (e.g., participants C, F, and G). Appendix D provides detailed case studies for each participant in the MPP.

Mindfulness Attention Awareness Scale (MAA)

Children were encouraged to let the examiner know during the administration of the MAAS if they did not understand any of the questions. Table 5 shows the frequency with which children stated that they did not understand items from the adapted scale and required clarification. Children queried the meaning of the words: “carelessness”; “difficult”; “experience”; “physical”; “tension”; “discomfort”; “automatically”; and “preoccupied”

Table 5

Number of Children Who Stated They Didn't Understand MAAS-Adapted Version Items

MAAS Item	N Children Who Didn't Understand	
	<i>f</i> (%)	<i>N</i> = 9
1. I don't know what I feel until later	6 (66.6)	
2. I break or spill things because of carelessness, not paying attention, or thinking of something else	2 (22.2)	
3. I find it difficult to stay focused on what's happening right now	1 (11.1)	
4. I tend to walk quickly to get where I'm going, without paying attention to what I experience along the way	1 (11.1)	
5. I tend not to notice feelings of physical tension or discomfort until they really grab my attention	5 (55.5)	
6. I forget a person's name almost as soon as I've been told it for the first time	1 (11.1)	
7. It seems I am doing things without really paying attention to what I am doing	1 (11.1)	
8. I rush through activities without really paying attention to what I am doing	1 (11.1)	
9. I get so focused on where I want to get to that I don't notice what I am doing right now to get there	0 (0)	
10. I do jobs or tasks automatically, without being aware of what I'm doing	3 (3.33)	
11. I find myself listening to someone with one ear, doing something else at the same time	2 (2.22)	
12. I walk into a room and then wonder why I went there	0 (0)	

N Children Who Didn't Understand	
MAAS Item	<i>f</i> (%)
	<i>N</i> = 9
13. I find myself preoccupied with what is going to happen or what has already happened	4 (4.4)
14. I find myself doing things without paying much attention	0 (0)
15. I eat without noticing that I'm eating	0 (0)

Discussion

The results of the pilot study provided support for the feasibility and acceptability of the MPP for primary school aged children from disadvantaged backgrounds. The low attrition rate and good referral base from teachers supported the feasibility of running the MPP in a school setting. Qualitative data indicated that with modifications, the program was appropriate for this sample. The following discussion highlights the key strengths and limitations of the MPP and research methodology that informed changes for the second phase of the study.

Cognitive functioning of sample.

To better understand the characteristics of the current sample, we assessed the children's cognitive functioning at base-line. The children's scores on the non-verbal test of cognitive function were normally distributed. However, their scores on the verbal test were negatively skewed. Seven children had low scores that were less than the 10th percentile for verbal IQ. This baseline level of verbal functioning was very low compared with a normal population of Australian children, but expected for the present sample. This is because, these children were predominantly from non-English speaking and low socioeconomic status families (Baldizon De Naclerio, 1999; Beech & Keys, 1997). English language proficiency was the main reason for the low verbal IQ test scores and it is unlikely that these children had inherent language or learning disorders. Further, none of the children in the pilot study had been referred for the Program for Students with Disabilities and Impairments, were diagnosed with a language disorder at the time of the study, or had received intervention from the school Speech Pathologist. The non-verbal test results for the children in the sample were therefore considered a better representation of the children's true IQ scores. This rationale is supported by researchers who have investigated the relationship between verbal and non-verbal IQ and children from backgrounds where English is a second language (e.g., Baldizon De Naclerio, 1999; Beech & Keys, 1997).

The baseline information had significant implications for modifying the program. Presuming that the children's English proficiency was lower than other same aged Australian children, appropriate modifications to the program needed to include simplifying the written and spoken language used in the program, while also increasing the use of non-verbal and experiential activities. The baseline information also indicated

that non-verbal IQ should be used as eligibility criteria for the children to be included in the study such that only children with an exceptionally low *non-verbal* IQ (but not a low *verbal* IQ) were to be excluded from the study.

Pre- to post-test findings

The results supported the predicted reduction in overall internalising psychological symptomology in the children. Medium effect sizes were found for reductions in self-reported levels of anxiety and depression (from the BECK) and parent and teacher reported levels of internalising behaviours (CBCL/6-18 and TRF/6-18) which were comparable to past research findings. For example, a large meta-analytic study on mindfulness treatment therapies with adults found an average effect size of $d = 0.59$ ($SD = .41$) which is medium according to Cohen (1988). However, without experimental control, the present improvement in symptoms may have been nothing more than an artefact of the passage of time. Further investigation with control groups and larger sample sizes is therefore required to investigate whether MPP helps temper anxiety and depressive symptoms.

Child and parent rated measures indicated that the children in the sample had clinical levels of psychological symptomology before they began the MPP. The majority of children in the sample reported having lower than normal levels of self-esteem on the BECK and their parents reported a high prevalence of clinically significant internalising behaviour on the CBCL/6-18. By contrast, teachers rated their students in the “normal” range for internalizing problems on the TRF/6-18. This was unexpected given that the teachers initiated the referrals based on their concerns about the children’s low self-concept and high anxiety levels. One explanation for this difference is that many of the behaviours attributed to low self-esteem and internalising problems (e.g., “feels unloved” and “worries”) are more visible to parents than teachers. This is because teachers only have an opportunity to observe children in a large group environment where such symptoms may be difficult to observe. Teacher’s may have referred these children to the program based on other characteristics they had noticed in the classroom setting such as “shyness”, “low confidence” and “doesn’t put his/her hand up” that are not included on the TRF/6-18. Qualitative data from the MPP (in group behavioural observations) suggested that all of the referred children were highly anxious at the beginning of the program, which supports that the sample did in fact have anxiety problems.

Low concordance between multi-informants is commonplace in child psychopathology research (Smith, 2007). In a meta-analysis of 119 studies, correlations between ratings across parents, children and their teachers of social, emotional, or behaviour problems in children were often low (e.g., r values often between 20 to 30; Achenbach, McConaughy, & Howell, 1987). Children also tend to report their internalising symptomology as more severe than their teachers (Epkins; 1993) and their parents (Edelbrock, Costello, Dulcan, Conover, & Kala, 2006).

Given the teachers apparent low sensitivity to their children's psychological symptomology, changes to the methodology for participant selection was considered necessary for the main study. One solution for the main study was to select children based on screening data of their self-reported levels of psychological symptomology. Obtaining data on self-perception of psychological symptoms could possibly identify more children with problems in the clinical range. This rationale is supported by the above research that shows self-reported internalising problems tend to be more severe than teachers report in children (Epkins, 1993). It was also thought practical to add a measure of psychological wellbeing to investigate whether the program added to positive aspects of psychological wellbeing and functioning.

As predicted, the children's levels of self-concept were greater after participation in the MPP with a medium effect size. This finding was clinically significant given that the majority of children at baseline had lower than normal levels of self-concept. This finding was consistent with findings from Biegel et al. (2009) where participation in a MBI was associated with improved self-esteem in children.

Program evaluation form.

The children's responses on the program evaluation form suggested that the MPP was generally acceptable and appropriate for this sample of children. The majority of the children endorsed that they "had fun" in the program and that there was a high frequency of activities that the children indicated that they liked and few activities that were disliked. A large number of children indicated that the MPP was "sometimes" hard to understand. During the homework review sessions, some children also noted that the homework was "too hard" or that they were unable to complete the homework as they did not understand the worksheets.

Observations during the MPP indicated that many of the children found the cognitive exercises difficult to understand. For example, children found it hard to put their feelings into words or distinguish between events, thoughts and feelings. Although the children had the opportunity to relate their own experiences to these concepts during the pleasant and unpleasant events diary, it was noted during both homework reviews that most of the children did not complete this task due to problems with understanding. Furthermore, some of the children commented during the MPP that they did not know what “pleasant” and “unpleasant” meant. As stated, six of the nine children came from homes where the main language spoken was not English and baseline data indicated that the children had low English proficiency. Even though the program was designed for children aged between eight and 12 years, the children in the sample might not have understood some of the information presented in verbal or written form due to their low English proficiency.

Qualitative observations

Clinical observations during the MPP indicated that all the children benefitted from the meditation component of the MPP. The children responded favourably to all of the meditations except for the body scan and walking meditation. During the body scan meditation, disruptive and distractible behaviour was noted, especially in a few of the children who stated that they found meditation challenging. These children tended to discuss what they found challenging in the group discussions. The idea that the aim of meditation was not to necessarily feel relaxed or to feel good, but rather, to learn to accept all feelings was emphasised in these discussions. The body scan meditation may have been challenging due to its length (i.e., 10 minutes) given that all other meditations were five minutes or less in duration and appeared acceptable to the children. The walking meditation was conducted in the courtyard outside the therapy room (approximately 50 square meters). It appeared that the children were distracting each other due to the small confined space that was provided for the meditation. Although distractions are a part of meditation and are useful, this activity became chaotic and the children had limited opportunity to independently observe these distractions and redirect their attention to the walking.

The group generally functioned well and the children were very respectful of each other’s boundaries and rights for confidentiality. The children upheld the group

rules and made spontaneous reference to them, empowered by being given ownership of the group rules initially.

The ice breaker was not well accepted at the beginning of the program. The likely reason for this is that the activity was too demanding and anxiety provoking for the children. Requiring the children to interview each other and then verbally share this information with the group was most likely to be too challenging for children that already lacked social and verbal confidence. This activity resulted in more tension for the children. The non-judgment activity worked well except that the children found the blindfold difficult to use without peeping. The optical illusion and mindful listening game were well accepted by the children and appeared appropriate for the group.

Parent acceptability was evaluated via interviews with parents during and after the program. The parents generally reported that their children had benefited from attending the program. The mindfulness activity was difficult for the parents who did not speak English because the power of the script was significantly undermined by the need to use a translator. Also, the parents who could not read English had to spend a lot of additional time completing the pre and post-test assessments as they needed the items read out to them by the interpreter.

Attrition

All children who participated in the MPP completed the program. The good attendance was likely to have resulted from the program being conducted within the school during school hours. Reliance on parents bringing their children to a clinic or University for treatment would have potentially resulted in a less promising result. It is difficult for parents who do not speak English to attend appointments for their children outside school. They are more likely to misunderstand appointment bookings and have limited transport options. The children and parents generally viewed the group as a part of their school life as opposed to something strange and unfamiliar (e.g., a mental health clinic). Outside appointments may not be valid or as valued as programs run within the trusted school community. The parent's willingness for their children to participate in the program was also very good with 9 out of 10 parents giving their permission for their child to participate in the MPP. The literature suggests that once children are enrolled in a mental health service, there is a potentially high drop out. For example, Wiergbicki and Perkarik (1993) found that 40-60% of children terminate prematurely

from mental health problems and these rates are higher in culturally diverse populations. Kazdin (1996) also found that early termination was a greater risk for children from ethnic minority backgrounds. Other studies that have looked at MBI for children have shown dropout rates of around 30 % (e.g., Lee, Semple, & Miller 2006). The good attendance in the present study strengthens the argument that mental health issues should be addressed in the school environment in addition to other settings.

Modifications to MPP

Modifications were made to the MPP for the second phase of this research to improve acceptability and appropriateness of the program for children of this demographic. Appendix E summarises the MPP program and all changes that were made to this program for the main study. Unanticipated modifications to research methodology for the main study were made based on problems identified during the pilot study. Anticipated modifications were also made for the main study so that the program could be evaluated via a cluster randomised controlled hierarchical design. All modifications to research methodology are outlined in detail in the following Chapter 7 (Method section). Ethics approval was obtained for all modifications for the main study (see Appendix B for Swinburne University Human Research Ethics Committee Amendment Approval [2007b]).

Changes to the MPP involved significant simplification to the written and spoken language in the program. The proportion of experiential and non-verbal activities was therefore increased. To improve the rate of home practice, meditation scripts were presented via audio CD. Most of the other written work was eliminated from the homework and added to the session schedule where the facilitator could provide support if there were problems with understanding.

Given the verbal demands of the cognitive component of the MPP, it was rationalised that these activities required significant modification to optimise their usefulness in this population of children. Instead of requiring the children to independently complete event diaries for homework, alternative activities during the group time were used that aimed to improve emotional vocabulary and help the children distinguish between thoughts and emotions. These activities were delivered via visual posters and pictorial cards to reduce the verbal demands placed on the children.

Participants were also given more time to relate their personal experiences to these concepts during group time. The wording of the cognitive activities was simplified. For example, the words “pleasant” and “unpleasant” were replaced with “comfortable” and “uncomfortable”. The cognitive ABC models were completed during the session (as opposed to at home) with the help and support of facilitators individually and via group sharing.

The meditation component generally appeared to be acceptable, appropriate and helpful to the children. However, it was concluded that the body scan was too long and in the interests of cohesive group dynamics, this meditation was shortened. The walking meditation was changed to a larger space (the school oval) where the children had more room to walk independently without being tempted to socialise. Group discussions occurred immediately after meditations so that the children could easily recall and reflect on their experiences.

Other changes included addition of a goals section where the children brainstormed what they wished to gain from the program. The initial ice breaker activity was changed to a simpler and less confronting game that was more likely to build rapport. Given the observed difficulty with the blind-fold, a flip top box was considered more appropriate for the non-judgment activity.

Statements that were not clearly understood by children on the MAAS were further simplified. Words that the children did not know the meanings of (e.g., carelessness, difficult, experience, physical tension, discomfort, automatically, preoccupied) were substituted for simpler words (see Appendix B for the MAAS adapted for the main study).

Modifications to Research Methodology based on Problems Identified

The finding that the teachers rated their students as having “normal” levels of psychological symptoms on the TRF/6-18 represented a significant methodological problem that needed to be addressed in the main study. Selection criteria for the pilot study involved teachers referring children who had low self-confidence and /or internalising problems (i.e., anxiety, depression, somatic complaints). There was adequate evidence to assume that the selected children had significant levels of psychological symptoms based on the results of the parent and child measures and

behavioural observations in the MPP. However, the teacher's ratings appeared to underestimate the children's psychological symptoms. This was an issue because the researcher was relying on the teacher's being sensitive enough to identify children who had psychological issues that indicated referral to the program. To address this issue, the methodology for selection of children for the main study was altered. Instead of relying completely on teacher referral, data from the BECK surveys (completed by all the children through a general school based wellbeing program) were used by teachers and the wellbeing coordinator as a basis of referring students to the program. The wellbeing coordinator would invite parents to participate in the research if their child had a score in the clinical range for self-concept, anxiety or depression on the BECK. All children were referred to the primary welfare officer regardless of research participation if their scores were in the clinical range. It was considered that this change to the selection methodology would help to ensure that all children who showed significant levels of psychological symptoms in the areas of self-concept, anxiety, depression would be identified and invited to participate in the research.

Chapter 7

Overview of Main Study and Method

This chapter presents the method for the main study, which included changes derived from the key learnings for the pilot study (summarized in Chapter 6 under Modifications to MPP and Modifications to Research Methodology) and use of a cluster randomized hierarchical design to compare the refined mindfulness program to an active control (AC) groups and another psychological treatment approach. The following chapter outlines the aims and hypotheses specific to the main study and then summarises changes to the research methodology and treatment program for this study.

Aims and Hypotheses

Hypothesis 1: anxiety.

Children who participated in the refined mindfulness based intervention (MBI) would show significantly greater reductions in anxiety symptoms compared to children who participated in the relaxation training group (RT) or AC. These improvements would occur across informants (i.e., child, parent, and teacher). Anxiety symptoms were measured by the following:

- Self-reported Anxiety a score from the BECK
- Parent-reported DSM orientated Anxiety T score from the CBCL/6-18
- Teacher-reported DSM orientated Anxiety T score from the TRF/6-18

Hypothesis 2: depressive/affective symptoms.

Children who participated in the MBI would show significantly greater reductions in depressive and or affective symptoms compared to children who participated in the RT or AC. These improvements would occur across informants (i.e., child, parent, and teacher). Depressive and/or affective symptomology were measured by the following:

- Self-reported Depression T score from the BECK

- Parent-reported DSM orientated Affective T score from the CBCL/6-18
- Teacher-reported DSM orientated Affective T score from the TRF/6-18

Hypothesis 3: attention problems.

Children who participated in the MBI would show significantly greater improvements in levels of attention compared to children who participated in the RT or AC. Concentration and attention were measured by the following:

Test performance on a computer based neuro-psychological test of attention performance: Cog State Chase Test (Cog State, 2007).

- Parent-reported Attention problems T score from the CBCL/6-18
- Teacher-reported Attention problems T score from the TRF/6-18

Hypothesis 4: self-concept.

Children who participated in the MBI would show significantly greater improvements in levels of self-esteem compared to children who participated in the RT or AC group. Self-concept was measured by Self-concept T score from the BECK.

Hypothesis 5: psychological wellbeing.

Children who participated in the MBI would show significantly greater improvements for general psychological wellbeing compared to children who participated in the RT or AC. Psychological wellbeing was measured by the Total score from the Pleasure and Enjoyment Scale from the Children's Depression Scale (Pleasure, Lang, & Tisher, 1983) adapted for the present study.

Hypothesis 6: qualities of mindfulness.

Children who participated in the MBI would show significantly greater increases in qualities of mindfulness compared to children who participated in the RT or AC. Mindfulness was measured by the following:

- Total score from the MAAS (Brown & Ryan, 2003) adapted for children and further modified following the Pilot Study.

Method

Selection of participants.

The main study was conducted with a convenience sample of children from a Victorian state government school located in the western suburbs of Melbourne, Australia. The local government area in which the children lived has been categorized by NATSEM at the University of Canberra as having the highest level of risk for disadvantage (Phillips et al., 2013). This area was characteristically culturally diverse and of low socioeconomic status area where children were likely to have parents born in a country other than Australia. Many of the families in the study had obtained permanent residency via the Australian Government Department of Immigration and Citizenship Australian Refugee and Humanitarian Program.

Children in Grade 6 were not included in the main study as some of these children had already participated in the pilot study. This meant that children who had experienced the mindfulness program would be participating in the same teacher run wellbeing class as the control group, exposing the control group to potential influence by these children.

As a part of the regular primary school wellbeing program, children in Grades 4 and 5 were administered the BECK via the classroom teacher at the beginning of term one. Children who scored in the mildly elevated clinical range or above in at least one of the two domains of the BECK (i.e., anxiety, depression) or who scored at least below average on the self-concept domain were offered a place in the program (see Table 3 from Chapter 6 for clinical ranges of the BECK). The teacher approached the parents to gain their permission for their children to be included in the study. The parents who agreed to have their child participate in the research were contacted by the researcher to arrange a time to discuss their child's participation and gain formal consent. The classroom teacher referred children who scored in the "clinical" ranges or above or below average self-concept to the primary welfare officer for follow up regardless of whether their parents were interested in participating in the research. All screening procedures were completed as a part of the regular school wellbeing program.

To be eligible for the study, children had to meet the following criteria: (a) have a score on the BECK that was at least mildly elevated on at least one of the two

dimensions (i.e., anxiety, depression), or have a score of at least low average or lower on the self-concept dimension; (b) have a non-verbal IQ of more than 80; (c) the absence of an identified intellectual disability, physical disability, learning or language disorder; (e) be in Grade 4 or 5. All 85 children met eligibility criteria to participate in the study.

Out of 85 eligible children, 80 parents gave verbal permission for the teacher to pass on their details to be contacted by the researcher. Parents did not give clear reasons for not participating to the classroom teacher except for one parent who stated that her daughter “did not need it”. Of the 80 parents who were contacted by the researcher, 76 parents gave their consent to participate in the study. The four parents who did not consent to participate in the study did not want their children withdrawn from the normal school curriculum as they were concerned that the children might miss out on important school work.

Participants.

Children were selected for the study based on whether they had elevated scores on the BECK. Seventy six children participated in the main study. Thirty one (41%) children were male and 45 (59%) were female. The children were aged between 8 and 12 years, with the mean age being 10.10 years ($SD = .68$). Fifty one (67%) children were in Grade 4 and 25 (33%) children were in Grade 5. All children lived with at least one biological parent. Fifty (67%) children lived with both their biological parents and 26 (33%) lived with only one. Seventy (92%) children in the study were born in Australia and all the children in the study were permanent residents except one who was temporarily in Australia from Germany (her mother had obtained a working visa). None of the children were Aboriginal or Torres Strait Islanders. Table 6 presents the breakdown of children’s and their parent’s countries of birth.

Table 6

Breakdown of Country of Birth for Children and their Parents

Country of Birth	<u>Percentage of Children</u>		
	Mother	Father	Child
Not Stated	0.0 %	1.3 %	0.0 %
Australia	34.2%	35.5 %	92.1 %
Vietnam	32.9 %	32.9 %	2.6 %
El Salvador	1.3 %	1.3 %	0.0 %
Malta	1.3 %	0.0 %	0.0 %
Spain	1.3 %	0.0 %	0.0 %
Kenya	1.3 %	1.3 %	1.3 %
Bangladesh	2.6 %	2.6 %	0.0 %
New Zealand	1.3 %	1.3 %	1.3 %
Italy	2.6 %	2.6 %	0.0 %
Samoa	2.6 %	2.6 %	1.3 %
Mauritius	1.3 %	2.6 %	0.0 %
Serbia	6.6 %	6.6 %	0.0 %
Sri Lanka	3.9 %	3.9 %	0.0 %
Turkey	1.3 %	1.3 %	0.0 %
Sudan	1.3 %	1.3 %	0.0 %
Bosnia	2.6 %	2.6 %	0.0 %
China	1.3 %	0.0 %	0.0 %
Germany	0.0 %	0.0 %	1.3 %

Given the large proportion of parents who were born overseas, not surprisingly, in about half the families, the main language spoken at home was not English. The most common language spoken in the family home other than English was Vietnamese with Serbian being the next most common. Table 7 shows a breakdown on the main languages spoken in the children's homes.

Table 7
Breakdown of Main Languages Spoken in Children's Homes

	%	n
English only	47.4%	36
Vietnamese	32.9%	25
Spanish	1.3%	1
Bengali	1.3%	1
Samoan	2.6%	2
Kenyan	1.3%	1
Serbian	5.3%	4
Sri Lankan / Sinhalese	3.9%	3
Sudanese	1.3%	1
Bosnian	1.3%	1
Mandarin	1.3%	1

Proficiency for written and spoken English among the parents was self-assessed as adequate for over two thirds of the sample (73.7% of fathers and, 71.1% of mothers did not require an interpreter for written or spoken English communication). Six mothers and four fathers reported having adequate English proficiency for spoken language but they required an interpreter for written communication. One mother self-reported proficiency in written communication only. Fifteen mothers and fathers (19.7%) reported that they were not proficient in either written or spoken English communication.

Parent education levels were generally lower than national norms. Approximately half the mothers and fathers had completed up to Year 9 or equivalent of high school. Only 7.9 percent of mothers and fathers had completed Year 12 and only one mother and one father was university educated. Table 8 shows parent education levels in the sample.

Table 8
Breakdown of Highest Level of Parent Education

Highest level of parent education	<u>Mother (n = 76)</u>		<u>Father (n = 76)</u>	
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
<u>Secondary</u>				
Not known	2	2.6%	-	-
Year 9 or equivalent or below	30	39.5%	36	47.4%
Year 10 or equivalent	32	42.1%	31	40.8%
Year 11 or equivalent	6	7.9%	3	3.9%
Year 12 or equivalent	6	7.9%	6	7.9%
<u>Post-secondary</u>				
Not known	2	2.6%	-	-
None completed	70	92.1%	73	96.1
Certificate I-IV (including trade certificates)	2	2.6%	-	-
Advanced Diploma / Diploma	1	1.3%	2	2.6%
Bachelor degree or above	1	1.3%	1	1.3%

About half the fathers reported occupations consisting of non-skilled labour such as machine operation, hospitality work, labouring and related type work (46.1%) and just less than a third of father's were unemployed (30.3%). The majority of mother's occupations consisted of unpaid work such as home duties (59.2%) and unskilled labour (36.8%). A small minority of mothers worked in professional jobs (2.6%). See Appendix G for a list of occupation codes used in the study. Table 9 shows a breakdown of parent occupation type in the sample.

Table 9

*Breakdown of Parent Occupational Status**

Occupational status	<u>Mother</u>		<u>Father</u>	
	n	%	n	%
Not known	-	-	2	2.6%
Category A: Senior management/professional	2	2.6	-	-
Category B: Associate professionals	1	1.3	-	-
Category C: Tradesmen/skilled administration	15	19.7	1	1.3
Category D: Unskilled Labour	35	46.1	28	36.8
Category N: Unpaid work for 12 months	23	30.3	45	59.2

Note. * see Appendix F for a detailed description of occupational grouping codes.

Children's verbal and non-verbal cognitive ability were measured using the Raven's and Crichton scales. Figure 1 shows the frequency distribution for children's results from the Crichton Vocabulary scale (an estimate of verbal intellectual functioning).

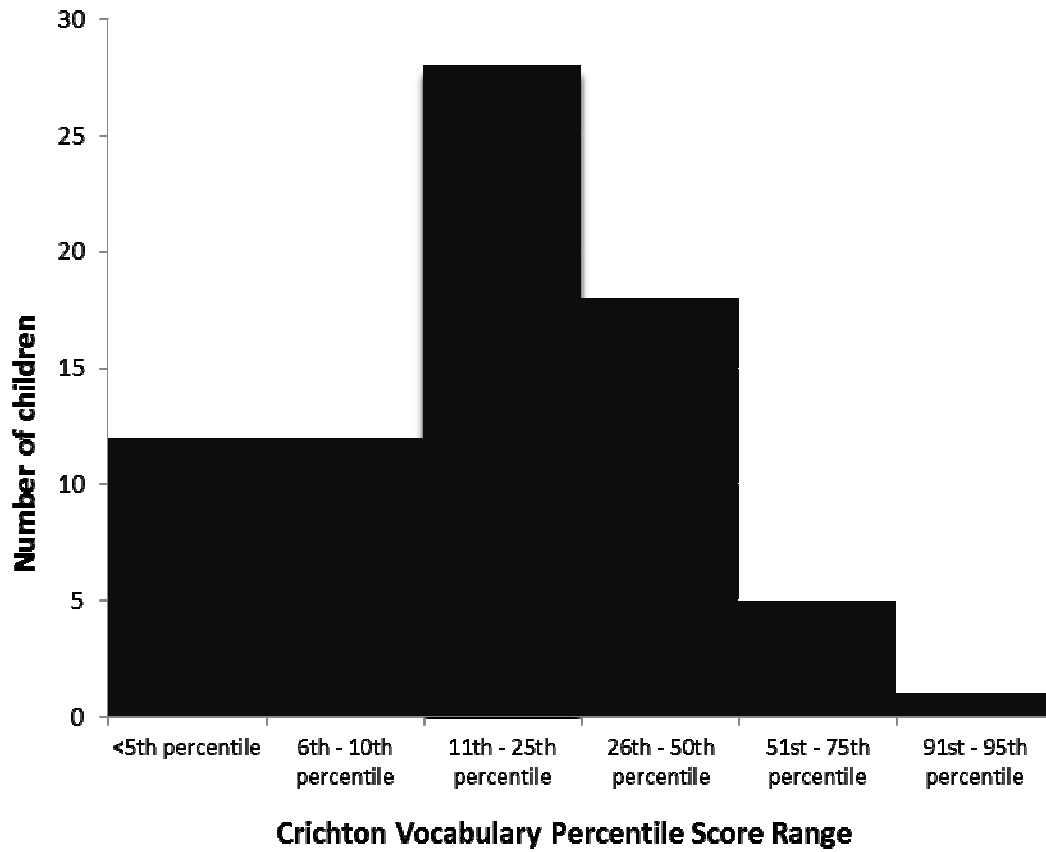


Figure 1. Number of children in each percentile rank range from test of verbal intelligence obtained from the Crichton Vocabulary test using 1982 smoothed norms from Dumfries school children in the United Kingdom.

As can be seen from Figure 1, the distribution of scores for verbal functioning was skewed to the left with most children performing between the 11th and 25th percentile. This was expected given that the majority of children were from non-English speaking backgrounds and was consistent with the results from the pilot study. As stated in the pilot study (see Chapter 6) these results are not indicative of the current children having a lower verbal cognitive ability compared to a typical sample but rather are likely to reflect the bilingual status of the children. This interpretation is consistent with research showing that bilingual children are disadvantaged on English tests (e.g., Bialystok & Luk, 2012, Hammer, et al., 2012).

Children's non-verbal cognitive ability was measured using the Raven's Coloured Progressive Matrices. All children in the sample had a non-verbal score of more than 80 and this met inclusion criteria for the study. Figure 2 shows the frequency distribution for children's categorical percentile results for this test. As can be seen in Figure 3, the children's non-verbal scores in the sample were normally distributed with most of the children scoring around the 50th percentile.

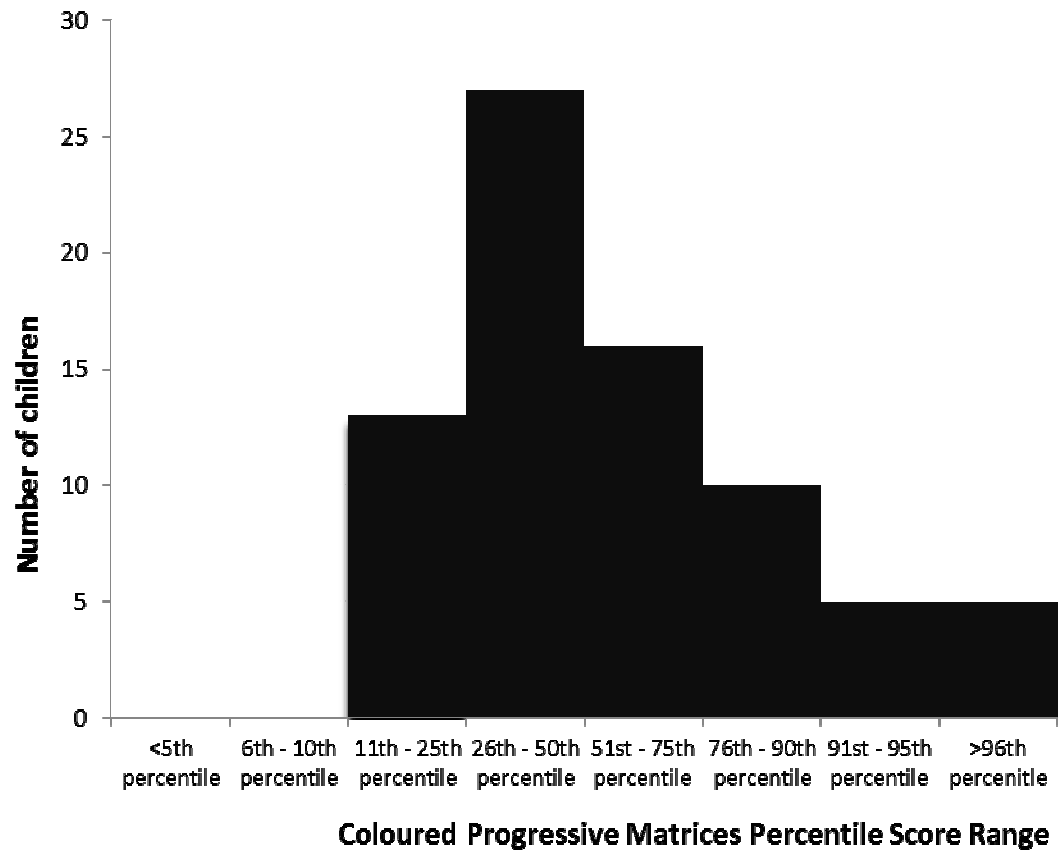


Figure 2. Number of children in each percentile rank range from test of non-verbal intelligence obtained from a test of non-verbal intelligence obtained from the Coloured Progressive Matrices test using 1982 norms from Dumfries school children in the United Kingdom.

No children were withdrawn from the study after pre-selection and all children completed the therapeutic program and pre and post program assessment. All 76 children participated in at least five of the eight sessions. About half the sample participated in all eight sessions ($n=39$) and more than a third participated in six to seven sessions ($n=30$). Table 10 shows child participation rates during the course of the eight week program.

Table 10
Children's Participation Rates

Sessions Attended	<i>N</i>	%
8 sessions	39	51.3
7 sessions	18	23.7
6 sessions	12	15.8
5 sessions	7	9.2
<5 sessions	0	0.0

Procedure

The study was conducted during school terms for eight weeks between term three 2007 and term one 2008. Thirty three percent ($n=25$) of the children participated in the study during term three 2007. Thirty six percent ($n=27$) of the children participated in the study during term four 2007 and 32 percent ($n=24$) of the children participated in the study during term one 2008.

The present study followed the same methodology as outlined in the pilot study in Chapter 6 with the following differences: (a) The MPP was revised and improved based on qualitative and quantitative feedback from the pilot study (see Appendix H for the Program Manual); (b) a RT group and AC group were included; (c) the wording of the MAAS was further simplified to reflect the language level of the children in the program; d) The Pleasure and Enjoyment Scale from the Children's Depression Scale (Lang & Tisher, 1983) was added after simplification to gain a self-reported measure of psychological wellbeing at pre- and post-test; (e) The Cog State Chase Test cognitive computer test was used to test performance changes in attention and concentration ; (f) in addition to Internalizing T-scores, DSM Affective, DSM Anxiety and Attention Problem T-scores were of interest for the CBCL/6-18 and TRF/6-18.

Ethics approval for the changes (that were not originally anticipated) was gained from the Swinburne Human Ethics Committee (see Appendix B for approval email) via an addendum. The Department of Education and Early Childhood Intervention Ethics Committee and the School Principal were also informed of these changes.

Mindfulness-based intervention (MBI).

The MBI group was an eight week program outlined in the program manual (see Appendix H). The program facilitator (the author of this thesis) was an experienced psychologist who also worked as the in house school psychologist for three days per week.

Relaxation training (RT).

The RT group was an eight week program adapted from a manualized psychological treatment program called "Relaxation for Children" (Rickard, 1992). This program provides children with standard psycho-education on relaxation and stress and teaches children commonly used relaxation techniques including body awareness

exercises, muscle awareness exercise (progressive relaxation and muscle stretching), breathing exercises, and visualisation exercises. Children were given homework exercises of comparable time requirements to the MBI and parents were offered the same support as was offered to the children who underwent the MBI group.

Active control (AC).

Children in the AC group remained in their regular classroom with their regular teacher and participated in a health and wellness subject. Similar to the RT or MBI groups, there were between eight to 10 children remaining in each classroom for this program. The health and wellness subject was unspecified. The teachers in this school used their own discretion to select various health and wellbeing related concepts. These concepts varied from healthy lifestyle information (e.g. the benefits of healthy diet and exercise) to concepts from various manualized school wellbeing programs. (e.g., “Habits of mind” that fosters psychological attributes such as, persisting, managing impulsivity, listening with empathy and understanding, thinking flexibly, metacognition, striving for accuracy, questioning and posing problems, applying past knowledge to new situations, creating imagining and innovating, and finding humour). “Habits of mind” is an educational program developed for primary school curriculums. Other miscellaneous educational wellbeing materials were used by the teachers. All concepts were taught via traditional didactic teaching methodology (e.g., teaching definitions and encouraging class discussions). The teachers used predominately instructional teaching and experiential methods (e.g., meditation, role play, demonstration, etc.) were not used.

Study design.

The study was run over three time periods that fitted into the children’s school terms. Children were recruited from two classes within the same grade level at the school within each time period. It was not possible to allocate children randomly within the three experimental conditions. This was because all of the children left behind in each classroom were exposed to the AC group (taught by the teacher). One researcher facilitated the MBI and RT groups and the two experimental treatment groups were conducted at two different times during the week. This was different from the pilot study where two clinicians ran the MPP. The rationale for using one researcher/clinician to facilitate the MBI and RT was to maintain consistent ratios between facilitators and

participants over the three experimental groups (where only one teacher was running the class in the AC).

The two classes were randomly allocated to either the MBI or RT treatments, which is known as cluster randomization. The treatment groups (either RT or MBI) were run simultaneously with the AC group. All children participating in either RT or MBI were therefore withdrawn from the class while the teacher was running the AC group. This meant that children from the first class were allocated to the RT group and children from the second class were allocated to the MBI group. The children were then allocated to either the experimental condition (i.e., MBI or RT, depending on which class they belonged to), or the AC group via a minimisation procedure. A completely randomised design was not feasible due to these constraints. A hierarchical design was employed where the RT and MBI were randomly allocated between classes and then children were either allocated to the treatment (i.e., RT or MBI; depending on which class they belonged to) or the AC group. Hierarchical designs are considered balanced if they satisfy two criteria: (a) First, there must be an equal number of participants in each treatment combination (e.g., students in each class for each teaching method); and (b) Second, there must be an equal number of levels of the nested variable under each level of the other independent variable (e.g., one class under each level of treatment method; Rapport, Kofler, Bolden, & Sarver, 2008).

Children in the AC group stayed in their classroom with their regular teacher and participated in a health and wellness class (described in the previous section). Given that eight to nine children were withdrawn for either the RT or MBI group while the AC was running, there were approximately 8 to 10 children in the AC group even though only approximately half these children were participants in the study. This meant that the three comparison groups had a similar number of children fulfilling criteria for Analysis of Variance. As a consequence of additional children in the AC class (who were not part of the study), the AC group had a similar number of children (i.e., eight to 10) to the treatment groups. This provided a conveniently consistent number of children in all three experimental groups for comparative purposes.

Within each class, children were allocated to either the designated treatment group (i.e., MBI in classroom one or RT in classroom two) or the AC group with a ratio of two children for the treatment groups and one child in the AC group. A non-random

procedure known as minimization was conducted to achieve this by arbitrarily allocating the children within each class to either the designated treatment group or AC group until the maximum number of children filled the AC group and then the remaining were allocated to the treatment group (which was capped at eight or nine participants). Minimization is a non-random method and considered to be an acceptable alternative to randomization and the procedure is argued to ensure balance between intervention groups (Scott, McPherson, Ramsay, & Campbell, 2002). Figure 3 outlines the methodology used to allocate children and classes to the three experimental conditions.

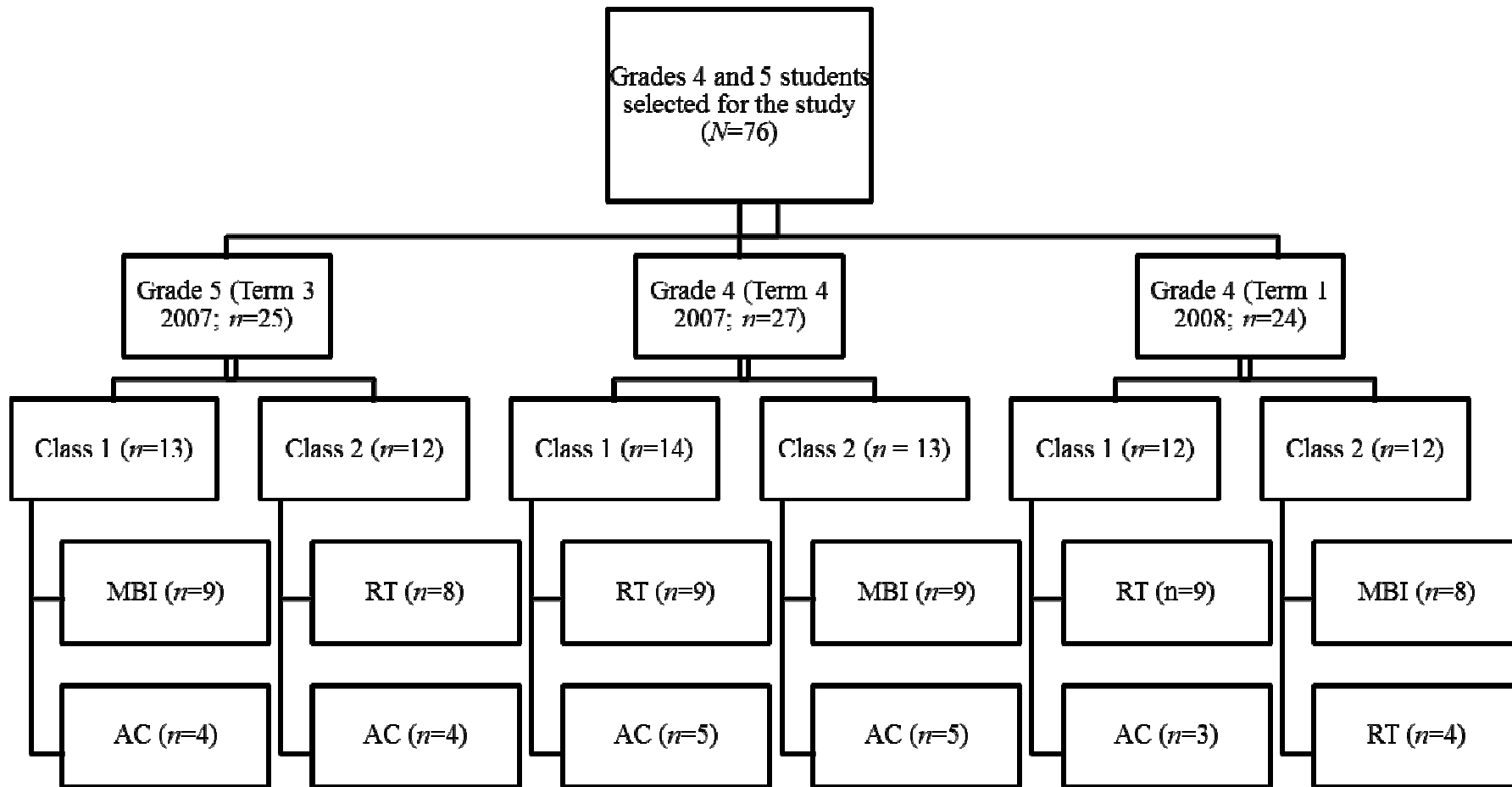


Figure 3. Method of allocation of children to treatment groups

Measures.

Many of the measures used in the study were the same as those used in the pilot study (see Chapter 6 for detailed description). These measures included: The Raven's Progressive Matrices (RPM; Raven, 1988); The Crichton Vocabulary Scales (CVS; Raven, 1988); Mindfulness Attention Awareness Scale (MAAS; Brown & Ryan, 2003); The Beck Youth Inventories of Emotional and Social Impairment – Second Edition (BECK; Beck, Beck, Jolly, & Steer, 2005;); The Child Behavior Checklist for Ages 6-18 (CBCL/6-18; Achenbach, 2001a); The Teacher's Report Form for Ages 6-18 (TRF/6-18; Achenbach, 2001b); and the program evaluation form. Additional measures used in the main study are as described below.

Mindfulness Attention Awareness Scale: Adapted for children (A-MAAS, Brown & Ryan, 2003):

The A-MAAS was further simplified to aid understanding for the children (see Appendix A for the updated questionnaire used in the main study). Simplification involved further shortening of sentences and deleting complex words.

Pleasure and Enjoyment Scale from the Children's Depression Scale (Lang & Tisher, 1983) Modified for the present study.

The Pleasure and Enjoyment Scale is an eight-item scale from The Children's Depression Scale (CDS; Lang & Tisher, 1983) and refers to the experience of fun, enjoyment, happiness in a child's life or his/her capacity to experience these things. The CDS is intended for use with children aged 9 to 16 years who are able to comprehend the items. Given that children included in the sample were as young as 8 years and were low on English language proficiency, the eight verbal statements were simplified. The children provided self-reported ratings of these verbal items on a five-point Likert scale. Pleasure is scored by calculating a total of all the responses with higher scores demonstrating superior qualities of psychological wellbeing (see Appendix A for a copy of the adapted measure).

Cog State Chase Test (Cog State) (<http://www.cogstate.com>)

The Cog State Chase Test is a cognitive computer task was used to measure performance changes in attention and concentration in the children. The Chase Test involves six trials (two practice tests and four actual tests) that take approximately 0.5

minutes each to administer in normal children. The cognitive domain that is usually measured by this test is Visual Motor Function and ability to apply sustained attention. The pre-task on-screen instructions state: "Chase the Target". The researcher reads the full task instructions to the participant. To begin the task, the researcher or participant must press the "Enter" key. The participant will first complete a practice test. The participant is shown a 10 x 10 grid of tiles on a computer touch screen. The participant is asked to tap the blue tile in the top left corner of the grid with the stylus pen. As the target moves, the participant "chases" it by tapping on the tiles one at a time. The participant cannot move diagonally and cannot skip a tile. If the participant makes a mistake, he/she must go back to the last correct tile. The participant should be encouraged to move as quickly and accurately as possible. Once the researcher judges that the participant understands the rules, the participant is instructed to click on the "Finish" button in the upper left corner of the screen. The participant is then asked to repeat the same task for a timed period of 30 seconds. The same rules apply as in the practice. The participant chases the target until the task stops. The main dependent variable is moves per second, which indicates the total number of correct moves made per second (higher score = better performance). This test has been designed to not be subject to practice effects so it is good for pre post program comparison in looking at gains in attention and concentration that are not due to past familiarity with the test (Falletti, Maruff, Collie, & Darby, 2006).

Additional Variables

Additional variables from the CBCL/6-18 and TRF/6-18 were used in the main study to meet the specific requirements of experimental aims and hypotheses. Variables of interest in the main study were parent and teacher informant DSM Anxiety T-score, DSM Affective T-score and Attention problem T-score. DSM Anxiety and Affective problems were of interest as the Internalizing T scores from both measures did not distinguish between depressive and anxious symptomology and these psychological symptoms were of separate theoretical interest. Attention problems were also of theoretical interest and therefore included.

Treatment Fidelity

Borrelli et al. (2005) provided a measurement tool of treatment fidelity comprising a list of criteria (25 items) by which treatment studies can be evaluated. Each item on the checklist was rated by the researcher as either "0" if criteria were not

met or “1” if criteria were met. The percentage of criteria met for each of the five treatment fidelity categories (i.e., design, training, delivery, receipt, and enactment) was recorded. The checklist has been pilot tested and further refined with 84 % inter-coder reliability agreement (Borrelli et al, 2005). See Appendix A for a copy of the treatment fidelity checklist.

Chapter 8

Results of Main Study

Preparation of Data

All data screening and analysis were performed using SPSS 19 (SPSS, 2010). Prior to analysis, all variables were screened for data entry errors. This was done by manually checking the data entry, checking minimum and maximum values and checking the number of valid missing cases.

Handling Missing Data

There were no missing data for the BECK self-concept, anxiety, or depression variables. There were four cases missing for the A-MAAS and two cases missing for the CDS pleasure test. In these instances, the children did not complete the pre-test surveys in the required time period before commencing the program (usually due to the children being absent during testing completion periods). Children who did not complete the pre-testing were not required to complete post testing. For the Cog State assessment, there were 20 cases missing and for the pre-test data and post-test data. Cog State testing took considerable time and because children were sometimes absent during testing completion periods, it was not possible to test the children at other times before the beginning of the program. As with the other variables, children who could not complete pre testing for the Cog State data were not required to undergo post testing for this measure. For the Cog State data, cases missing were more or less random across the three treatment groups.

For the teacher-informant questionnaire, there were 25 cases missing for pre- and post-test data. All teachers who completed the pre-test questionnaire completed the post-test questionnaire. The teachers who did not complete the questionnaires stated that they did not have adequate time. Due to the timing of the groups being run in school term, sometimes teachers were required to complete the questionnaire on school holidays. For the teacher-report data, missing cases were more or less random across treatment groups.

There were 21 cases missing for pre- and post-test parent report measures. All parents who completed the pre-test questionnaire completed the post-test questionnaire. Reasons given for the parents not being able to complete the pre-test questionnaire were not having enough time or not being in the country when the data were being collected. Parents who did not complete the pre-test survey were not required to complete the post-test survey. All parents who completed the pre-testing assessment also completed the post testing assessment. For the parent report data, missing cases were equally distributed across treatment groups.

Missing data were managed by excluding cases pair wise, which means that data were only excluded if that case was required for a specific analysis. According to Pallant (2007) this method has limited disadvantages whilst preserving the number of participants in the study as much as possible.

Exploratory Analysis

The data were initially screened for violations of the assumptions required for multivariate analysis. Presence of outliers was assessed using histograms, box plots, and descriptive statistics and no extreme values were detected. The extent to which extreme values influenced the distribution was determined by comparing the mean values with the 5% trimmed mean and inspection of these indicated that the most extreme values did not have a strong influence on the mean (Pallant, 2007).

A test for normality was conducted on each continuous variable. Table 11 shows the skewness and kurtosis values, Kolmogorov-Smirnov statistic and significance probability levels for each continuous variable in the study.

Table 11

Skewness and Kurtosis Values, Kolmogorov-Smirnov Statistic and Significance Probability Level for the Continuous Variables in the Study

Variable	<u>Skewness</u>		<u>Kurtosis</u>		<u>*K-S test</u>		<u>df</u>		<u>p</u>	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Self-concept	-.135	-.038	-.517	-.379	.086	.066	76	76	.200	.200
Anxiety	.294	.250	-.308	-.213	.078	.064	76	76	.200	.200
Depression	.581	.679	-.077	.281	.067	.100	76	76	.200	.059
Pleasure	.480	-.232	.095	-.463	.100	.121	74	74	.066	.010
Mindfulness	-.384	-.100	-.079	-.162	.078	.084	72	72	.200	.200

Table 11 (continued.)

Variable	<u>Skewness</u>		<u>Kurtosis</u>		<u>*K-S test</u>		<u>df</u>		<u>p</u>	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Parent anxiety	1.103	.322	.149	2.830	.216	.314	55	55	<.001	<.001
Parent affective	.610	1.489	-.431	1.966	.178	.284	55	55	<.001	<.001
Parent attention	1.224	1.451	1.152	1.910	.207	.247	55	55	<.001	<.001
Parent internalising	.083	.544	.318	.097	.106	.200	55	55	.185	.200
Teacher anxiety	.410	1.070	.194	.268	.194	.268	51	51	<.001	<.001
Teacher affective	.371	1.048	-.750	.172	.114	.226	51	51	.012	<.001

Table 11 (continued.)

Variable	<u>Skewness</u>		<u>Kurtosis</u>		<u>*K-S test</u>		<u>df</u>		<u>p</u>	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Teacher attention	.554	.880	-.894	-.521	.194	.188	51	51	<.001	<.001
Teacher internalising	.341	.811	.173	.898	.144	.157	51	51	.010	.003
Cog State	.287	.118	.362	.368	.984	.970	54	49	.688	.251

Note. *K-S test = Kolmogorov-Smirnov statistic assessed the normality of the distribution of scores (non-significant result $p < .05$)
 Self-concept = self-concept T-Score from the BECK; Anxiety = anxiety T-Score from the BECK; Depression = depression T-Score from the BECK; Pleasure = total score from the Pleasure and Enjoyment Scale from Children’s Depression Scale – adapted for the study; Mindfulness = total score from the MAAS adapted for children in the study; Parent anxiety = DSM anxiety subscale T score from the CBCL/6-18; Parent affective = DSM affective subscale T Score from the CBCL/6-18; Parent attention = attention problem subscale T score from the CBCL/6-18; Parent Internalising = CBCL/6-18 Internalizing T Score; Teacher anxiety = DSM anxiety subscale T-score from the TRF/6-18; Teacher affective = DSM affective subscale T-score from the TRF/6-18; Teacher attention = attention problem subscale T-Score from the TRF/6-18; Teacher internalising = internalizing problem T-score from the TRF/6-18; Cog State = overall reaction time test scores from four Cog State chase test trials.

As can be seen in Table 11, self-concept, anxiety, depression, mindfulness and Cog State pre- and post-test K-S test statistical probability values were greater than .05, indicating that assumptions of normality could be made for these variables and Analysis of Variance (ANOVA) was appropriate.

For the pleasure data, the K-S test statistical probability value was not significant for the pre-test data ($p > .05$) but significant for the post test data ($p < .05$). Skewness values for post-test data showed a negative skew, indicating pleasure scores were clustered at the higher values. Children showed a tendency towards high pleasure scores at post testing. This finding is not uncommon in behavioural statistics and inspection of histogram plots for the pleasure post data indicated that these deviations from normality were not extreme. The data were therefore appropriate for ANOVA given that this statistical method is thought to be robust against mild to moderate deviations from normality (Glass et al., 1972; Harwell et al., 1992; Lix et al., 1996).

K-S-test statistics for parent and teacher report informant variables (with the exception of parent internalising) had significant probability values ($p < .05$) at pre- and post-test. The skewness values for these parent and teacher variables were positively skewed, indicating a tendency for parents and teachers to rate many of the children low for psychological symptoms and only a few as very high. On inspection of the histogram plots, it appeared that the skewed data reflected the nature of the construct being measured rather than a problem with the actual test because the sample was non-clinical. Also, these measures were based on very specific problems, which increased the chances that many children would have lower scores on some variables and higher scores on others. Pallant (2007) stated that clinical measures of anxiety and depression are often positively skewed in the general population with most people recording relatively few symptoms of these disorders. Data transformations are sometimes recommended to ameliorate these issues but are ill-advised when standardised data is being used (Tabachnick & Fidell, 2007). Tabachnick and Fidell (2007) argued that if data fail tests of homogeneity, use of ANOVA is not an issue unless there is a large discrepancy in group sizes for the analysis. With this considered, it was decided to proceed with ANOVA for the parent and teacher data.

Scale Reliability and Inter-Correlations

Table 12 shows the reliability coefficients for the BECK (self-concept, anxiety, and depression), Pleasure scale from CDS, A-MAAS, CBCL/6-18 and TRF/6-18 at pre-treatment and post treatment.

Table 12
Reliability Coefficients of Measures

Measure	Cronbach's alpha		Number of Items
	Pre test	Post Test	
BECK – self-concept	.85 (76)	.89 (76)	20
BECK- anxiety	.82 (76)	.87 (76)	20
BECK – depression	.92 (76)	.90 (76)	20
CDS – pleasure	.86 (74)	.80 (74)	8
A-MAAS	.79 (72)	.82 (72)	15
CBCL/6-18	.93 (54)	.93 (53)	120
TRF/6-18	.92 (51)	.96 (51)	120

Note. BECK-self-concept = Self-concept Inventory from the BECK; BECK-anxiety = Anxiety Inventory from the BECK; BECK-depression = Depression Inventory from the BECK; A-MAAS = A-MAAS adapted for children in the study; CDS-pleasure = Pleasure Scale from Children's Depression Scale adapted for children in the study; CBCL/6-18 = The Child Behavior Checklist for Ages 6 to 18; TRF/6-18 = Teacher Report Form for Ages 6 to 18.

As can be seen in Table 12, all questionnaire measures had moderate to very high internal consistency at both pre- and post-test data collection points. There were no instances where alpha coefficients fell below the recommended cut-off of .70 for scale reliability, which has been established for research purposes (DeVellis, 2003).

Statistical Methodology

A series of 2 (within) x 3 (between) mixed design ANOVAs were conducted for each dependent variable. The analysis was conducted to assess the effect of the three different experimental groups (MBI, RT, AC groups) on the dependent measures from pre- to post-test time points. An alpha level of $p < .05$ was employed for all significance testing (Cohen, 1988). After the ANOVAs were conducted, in cases where there was a significant interaction for the three treatment groups, plots of pre- and post-test means were inspected to interpret the meaning of the interaction. In instances where differences between group means at pre-test were similar, the interaction supported significantly different improvement to the psychological measure between the experimental groups over time. Following this, K Matrix contrast estimates were inspected to see where these differences occurred between the three groups.

In situations where there was a substantial discrepancy between pre-intervention mean group values, the ANOVA interaction could not be used to support or reject the experimental hypothesis. The conclusions that can be drawn when adjusting for this are known as the “Lord’s Paradox” (Tu, Gunnell, & Gilthorpe, 2008). In these instances, a one-way analysis of covariance (ANCOVA) was conducted to compare the effectiveness of the three interventions designed to improve the psychological measure of interest. The independent variable was the experimental group (MBI, RT, or AC) and the dependent variable was the post-test measure. Children’s pre-test measure scores were used as the covariate for the analysis. This has been argued to be an acceptable approach to control for baseline imbalance in controlled trials with baseline and follow up measurements (e.g., Senn, 1991; Vickers & Altman, 2001).

Clinical significance refers to the practical significance of a treatment change (Kazchin, 2004). For the purposes of the present study, clinical significance referred to both the magnitude of change and whether the treatment was effective enough to return

a child's scores from clinical ranges to normal on the standardized tests used. We cannot assume that because the magnitude of pre- to post- test change is statistically significant, that it necessarily relates to meaningful or practical clinical change. Therefore, it is important to look at clinically significant change and use standardised tests where possible to deal with this issue (Spokas, Rodebaugh, & Heimberg, 2008).

Clinical significance considers the magnitude of change (i.e., how much change the treatment caused). For the purposes of the present study, effect sizes (d) were calculated for pre- to post- test changes using a method provided in an Excel program by De Fife (2002). Consistent with Cohen's (1992) interpretive guidelines, effect sizes were reported as small (.20) medium (.50) or large (.80). The reporting of effect size values in treatment studies is becoming a standard practice (Weisz et al., 2006). Where statistical tests of significance tell us the likelihood that experimental results differ from chance expectations, effect-size measurements are considered important as they indicate the relative magnitude of the experimental treatment. This allows for comparison of the magnitude of experimental treatments across different studies (Thalheimer & Cook, 2002).

Descriptive Statistics

Table 13.1 shows means and standard deviations at pre- and post-test time points and the effect sizes for the MBI, RT and AC groups for self-report and cognitive (Cog State) dependent variables.

Table 13.1

Pre to Post-test Means, Standard Deviations and Effect Sizes for Self-Report and Cognitive Data across MBI, RT and AC Groups

Variable	MBI (<i>n</i> =26)			RT (<i>n</i> =25)			AC (<i>n</i> =25)		
	<u>Pre</u> <i>M</i> (<i>SD</i>)	<u>Post</u> <i>M</i> (<i>SD</i>)	<u><i>d</i></u>	<u>Pre</u> <i>M</i> (<i>SD</i>)	<u>Post</u> <i>M</i> (<i>SD</i>)	<u><i>d</i></u>	<u>Pre</u> <i>M</i> (<i>SD</i>)	<u>Post</u> <i>M</i> (<i>SD</i>)	<u><i>d</i></u>
Self-concept	42.54 (8.90)	49.85 (7.65)	0.91	43.48 (9.23)	45.20 (9.12)	0.19	42.60 (8.07)	41.16 (8.34)	0.17
Anxiety	57.31 (10.76)	46.88 (7.54)	1.15	55.36 (10.10)	48.56 (10.02)	0.69	57.84 (7.08)	55.72 (9.52)	0.26
Depression	60.69 (13.09)	49.27 (8.70)	1.05	55.80 (14.14)	48.72 (10.13)	0.59	55.36 (10.96)	53.72 (9.59)	0.16
	<i>(n</i> =26)			<i>(n</i> =24)			<i>(n</i> =24)		

Table 13.1 (continued)

Variable	MBI (<i>n</i> =26)			RT (<i>n</i> =25)			AC (<i>n</i> =25)		
Pleasure	17.62 (5.93)	14.96 (4.48)	0.51	15.54 (5.27)	14.88 (4.51)	0.14	15.71 (4.31)	17.33 (4.48)	0.38
	<i>(n</i> =24)			<i>(n</i> =24)			<i>(n</i> =24)		
Mindfulness	31.04 (5.18)	33.71 (5.48)	0.51	34.96 (5.99)	34.33 (6.20)	0.11	34.50 (5.28)	34.71 (5.79)	0.04
	<i>(n</i> =20)			<i>(n</i> =13)			<i>(n</i> =13)		
Cog State	5.38 (0.89)	5.73 (0.96)	0.39	4.83 (1.06)	5.37 (1.09)	0.52	5.38 (1.15)	6.39 (1.14)	0.92

Note. *d* = Cohen's *d* effect size.

Self-concept = self-concept T-Score from the BECK; Anxiety = anxiety T-Score from the BECK; Depression = depression T-Score from the BECK; Pleasure = total score from the Pleasure and Enjoyment Scale from CDS – adapted for the study; Mindfulness = total score from the MAAS adapted for children in the study; Cog State = overall reaction time test scores from four Cog State Chase test trials.

Table 13.2 shows means and standard deviations at pre- and post-intervention time points and the effect sizes for the MBI, RT and AC groups for the parent informant dependent variables.

Table 13.2

Pre to Post-test Means, Standard Deviations and Effect Sizes for Parent Report Variables across MBI, RT and AC Groups

Variable	MBI (<i>n</i> =22)			RT (<i>n</i> =15)			AC (<i>n</i> =18)		
	<u>Pre</u> <i>M (SD)</i>	<u>Post</u>	<u><i>d</i></u>	<u>Pre</u> <i>M (SD)</i>	<u>Post</u>	<u><i>d</i></u>	<u>Pre</u> <i>M(SD)</i>	<u>Post</u>	<u><i>d</i></u>
Parent anxiety	56.41 (7.51)	53.91 (5.60)	.38	56.40 (7.21)	52.60 (4.17)	.67	56.56 (7.33)	55.33 (8.90)	.16
Parent affective	60.32 (8.73)	54.55 (5.47)	.81	60.07 (6.63)	54.53 (3.66)	1.07	58.89 (10.41)	55.83 (6.17)	.37
Parent attention	57.68 (6.12)	54.00 (3.63)	.75	60.00 (11.41)	54.00 (4.54)	.72	57.78 (8.04)	55.94 (4.97)	.28
Parent internalising	57.55 (12.15)	49.36 (10.11)	.75	60.53 (8.08)	52.47 (9.29)	.96	57.51 (13.18)	56.33 (13.92)	.09

Note. *d* = Cohen's *d* effect size

Parent anxiety = DSM anxiety subscale T score from the CBCL/6-18; Parent affective = DSM affective subscale T score from the CBCL/6-18; Parent attention = attention problem subscale T Score from the CBCL/6-18; Parent internalising = internalizing problems T score from the CBCL/6-18 (includes anxious/depressed, withdrawn depressed problems and somatization problems).

Table 13.3 shows means and standard deviations at pre- and post-intervention time points and the effect sizes for the MBI, RT and AC groups for all teacher report dependent variables.

Table 13.3

Pre to Post-test Means, Standard Deviations and Effect Sizes for Teacher Report Variables across MBI, RT and AC Groups

Variable	MBI (<i>n</i> = 18)			RT (<i>n</i> = 17)			AC (<i>n</i> = 16)		
	Pre <i>M</i> (<i>SD</i>)	Post <i>M</i> (<i>SD</i>)	<i>d</i>	Pre <i>M</i> (<i>SD</i>)	Post <i>M</i> (<i>SD</i>)	<i>d</i>	Pre <i>M</i> (<i>SD</i>)	Post <i>M</i> (<i>SD</i>)	<i>d</i>
Teacher anxiety	62.44 (7.59)	56.67 (6.42)	.85	57.41 (8.25)	54.00 (6.18)	.48	56.94 (8.56)	58.06 (9.44)	.13
Teacher affective	61.39 (8.38)	57.22 (7.53)	.54	59.59 (6.12)	52.76 (3.85)	1.38	62.00 (10.51)	63.13 (10.44)	.11
Teacher attention	57.89 (6.45)	54.94 (4.94)	.53	54.00 (5.05)	52.59 (4.06)	.32	56.00 (6.02)	56.81 (5.29)	.15
Teacher internalising	62.00 (10.97)	54.28 (9.52)	.77	58.35 (9.76)	49.18 (7.72)	1.08	59.44 (10.55)	57.63 (14.34)	.15

Note. *d* = Cohen's *d* effect size

Teacher anxiety = DSM anxiety subscale T-score from the TRF/6-18; teacher affective = DSM affective subscale T-score from the TRF/6-18; Teacher attention = Attention problem subscale T-Score from the TRF/6-18; Teacher internalising = internalizing problems T score from the TRF/6-18 (includes anxious/depressed, withdrawn depressed problems and somatization problems).

Repeated Measures for Self-report and Cog State Data

Table 14 shows the results for separate 2 (within) x 3 (between) mixed design ANOVAs to assess the impact of three different interventions (MBI, RT, and AC) on all self-reported and cognitive performance dependent variables (i.e., self-concept, anxiety, depression, pleasure, mindfulness, and Cog State) over time.

Table 14

Time, Treatment, and Interaction ANOVA results for Self-report and Cognitive Data

	Time (Within)			Treatment (Between)			Interaction		
	<i>F</i> *	<i>df</i>	<i>p</i>	<i>F</i>	<i>df</i>	<i>p</i>	<i>F</i>	<i>df</i>	<i>p</i>
Self-concept	7.61	1	.007	2.08	2	.113	7.86	2	.001
Anxiety	33.81	1	.001	3.03	2	.055	4.72	2	.012
Depression	29.53	1	.001	.55	2	.579	5.27	2	.007
Pleasure	.81	1	.374	.72	2	.489	3.87	2	.025
Mindfulness	2.04	1	.158	1.49	2	.232	3.54	2	.034
Cog State**	.43	1	.516	2.24	2	.117	4.83	2	.012

Note. *Wilks' Lambda statistic reported;

Self-concept = self-concept T-Score from the BECK; Anxiety = anxiety T-Score from the BECK; Depression = depression T-Score from the BECK; Pleasure = total score from the Pleasure and Enjoyment Scale from CDS – adapted for the study; Mindfulness = total score from the MAAS adapted for children in the study; Cog State = overall reaction time test scores from four Cog State Chase test trials.

**Where non-verbal IQ was used as a covariate (Ravens Progressive Matrices Percentile Score).

As can be seen in Table 14, a significant change did not occur for mindfulness or pleasure scores over time. It was therefore concluded that children who participated in the study did not improve in characteristics of mindfulness (as measured by the MAAS – adapted for the study) or positive wellbeing (as measured by the Pleasure and Enjoyment Scale from CDS – adapted for the study). When non-verbal IQ was adjusted, there was no significant improvement in Cog State performance (a computer based attention test) over time. There were significant time effects and interactions for self-concept, self-reported anxiety and self-reported depression, which are discussed separately in the following sub-sections.

Self-concept

Figure 4 shows mean self-concept scores for the children in each experimental group at pre-intervention and post-intervention time points.

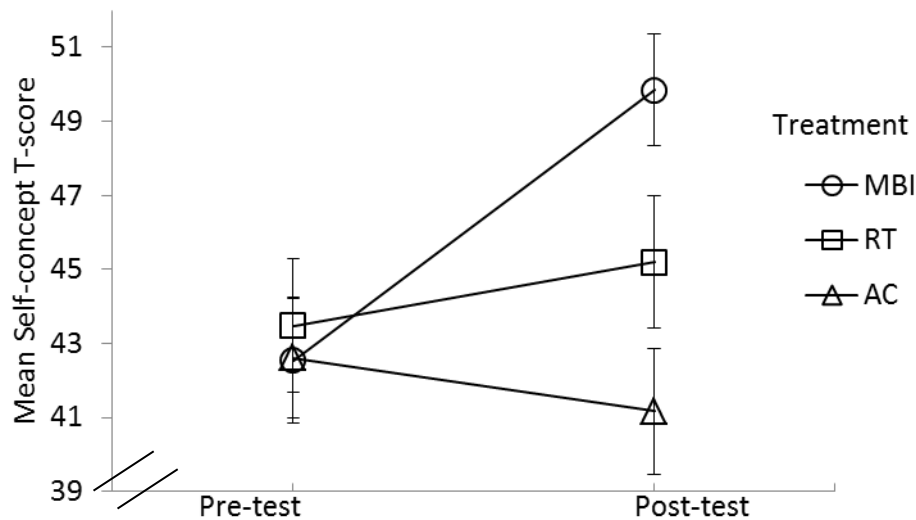


Figure 4. Mean self-concept T-Score from the BECK for the MBI, RT and AC groups at pre- and post-test.

Inspection of the plot in Figure 4 shows that the difference in self-concept scores at pre-test was minimal. Table 14 shows that the time effect for self-concept was significant ($F(1, 73) = 7.61, p = .007$) with a significant interaction ($F(2, 73) = 7.86, p = .001$), indicating that the treatment groups were significantly different in their impact on self-concept over time. K Matrix contrast estimates indicated that improvements in self-concept scores were significantly greater for the children who participated in the MBI group compared to the AC group ($p = .046$) who showed a slight decrement in self-concept over time. The improvement in self-concept scores over time for children in the MBI group had a large effect size ($d = 0.91$). Improvements were not significantly different between the RT and AC groups ($p = .26$).

Self-report anxiety

Figure 5 shows mean anxiety scores for the children in each treatment group at pre- intervention and post-intervention time points.

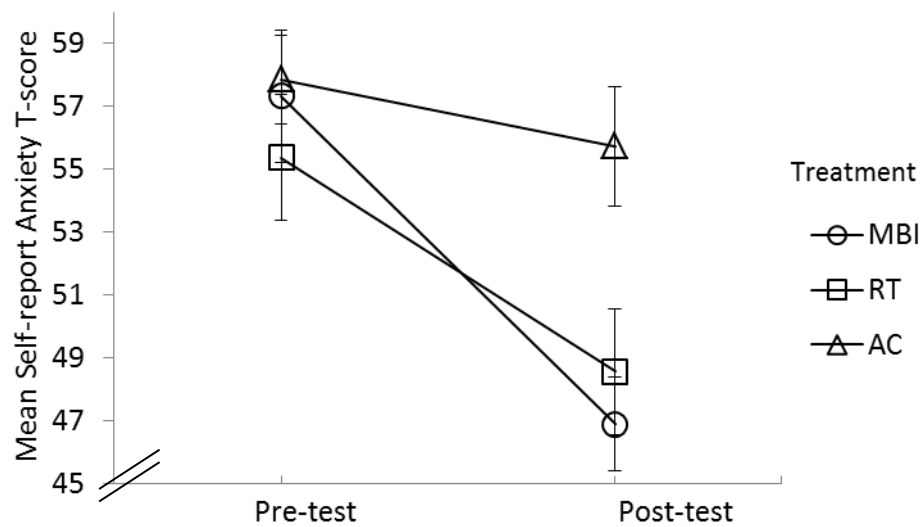


Figure 5. Mean anxiety T-score from the BECK for the MBI, RT and AC group at pre- and post-test.

Inspection of the plot in Figure 5 indicates that the difference in anxiety scores at pre-test was minimal between the treatment groups. Given that the time effect for anxiety was significant ($F(1, 73) = 33.81, p = .001$) with a significant interaction ($F(2, 73) = 4.72, p = .012$), we can assume that the treatment groups were significantly different in their impact on anxiety over time. K Matrix contrast estimates indicated that reductions in children's anxiety scores were significantly greater for the children who participated in the MBI group compared to the AC group ($p = .038$). Reductions in anxiety scores were also significantly greater for children who participated in the RT compared to AC groups ($p = .035$). The improvement in anxiety scores over time for children in the MBI had a large effect size ($d = 1.15$) and a medium effect size ($d = 0.68$) for children in the RT.

Self-report depression

Figure 6 shows overall self-reported depression scores for the children in the MBI, RT and AC group at pre-intervention and post-intervention time points.

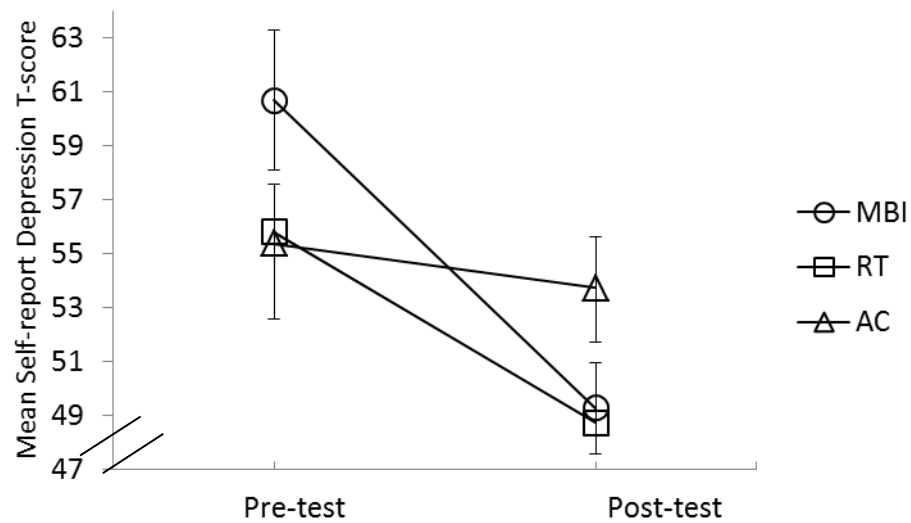


Figure 6. Mean depression T-Score from the BECK (depression) for the MBI, RT and AC group at pre- and post-test.

Inspection of the plot in Figure 6 indicates discrepancies in mean depression levels at the pre-intervention time point. Given these discrepancies, a significant difference in effectiveness of the treatment groups could not be assumed from the significant time effect ($F(1, 73) = 29.33, p = .01$) and interaction, $F(2, 73) = 5.27, p = .01$) shown in Table 14. A one-way between groups ANCOVA was used to test for differences in the effectiveness of the three groups for reducing depression levels, while controlling for the differences in depression at baseline. Preliminary checks were conducted to ensure that there was no violation of the assumptions of normality, linearity and homogeneity of variances. A violation of the assumption of homogeneity of regression slopes was found ($p = .031$). However, given that the group sizes were close to equal, it was considered acceptable to proceed with this analysis. This is because studies have indicated that ANCOVA is robust to the violation of the assumption of homogeneity of regression slopes when group sizes are equivalent (Hamilton, 1977; Levy, 1980).

After adjusting for pre-intervention depression scores, there was a significant difference between the three treatment groups on post-test depression scores ($F(2, 76) = 4.95, p = .01$). Pairwise comparisons indicated that the reduction in children's depression scores were significantly greater for the children who participated in the MBI group compared to the AC group ($p = .004$) and for children in the RT compared

to the AC group ($p = .023$). Reductions in depression scores for children who participated in the MBI compared to the RT group were not significant ($p = .5$). There was a large effect size ($d = 1.05$) for improvements in children's depression scores in the MBI and a medium effect size ($d = 0.59$) for improvements in children in the RT.

Repeated Measures for Parent Informant Data

Table 15 shows ANOVA results comparing the three experimental groups for all parent informant dependant measures in the study.

Table 15

Time, Treatment, and Interaction ANOVA Results for MBI, RT and AC

	<u>Time (Within)</u>			<u>Treatment (Between)</u>			<u>Interaction</u>		
	F*	df	p	F	df	p	F	df	p
Parent anxiety	8.99	1	.004	.22	2	.804	0.73	2	.488
Parent affective	26.19	1	.001	.01	2	.998	.89	2	.417
Parent attention	18.73	1	.001	.22	2	.801	1.68	2	.196
Parent internalising	30.89	1	.001	.61	2	.545	5.02	2	.011

Note. *Wilks' Lambda statistic reported. Parent anxiety = DSM anxiety subscale T score from the CBCL/6-18; Parent affective = DSM affective subscale T Score from the CBCL/6-18; Parent attention = attention problem subscale T Score from the CBCL/6-18; Parent internalising = internalizing problems T score from the CBCL/6-18 (includes Anxious/depressed, withdrawn depressed problems and somatization problems).

As can be seen in Table 15, the effect of time for all parent informant variables were significant, indicating that there were significant reductions overall for parent informant anxiety, affective (depression), attention and, internalising problems from pre- to post-test. For parent informant anxiety, affective and, attention problems, the interaction and treatment effects were not significant. This indicated that there were no significant differences in the reduction these variables between the three treatment groups over time. However, for parent informant internalising problems (an overall measure that incorporates anxiety, depressive problems and somatization) there was a significant time effect and interaction. This finding is discussed in the following subsection: “Parent report internalising problems”.

Parent informant internalising problems

Figure 7 shows overall parent informant internalising scores for the children in the MBI, RT, and AC group at pre-intervention and post-intervention time points.

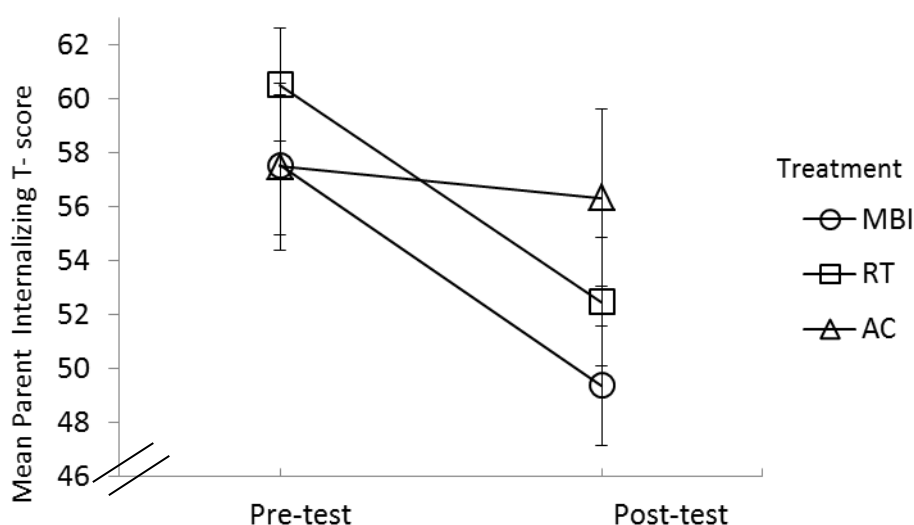


Figure 7. Mean internalising T-Score from the CBCL/6-18 (includes anxiety, depression and somatization problems) for the MBI, RT and AC group at pre- and post-test.

Inspection of the plot in Figure 7 indicates that there was a discrepancy in the mean scores at the pre-intervention time point. This discrepancy means that we cannot assume a significant difference in the effectiveness of the treatment groups in their impact the children's parent reported internalising problems from the significant time effect ($F(1, 52) = 30.89, p = .001$) and significant interaction, $F(2, 52) = 5.02, p = .011$) shown in Table 15. To test for differences in the effectiveness of the three interventions in reducing children's parent reported internalising problems, while controlling for differences in these scores at baseline, a one-way between groups ANCOVA was employed. Preliminary checks were conducted to ensure that there was no violation of the assumptions of normality, linearity, homogeneity of variances and homogeneity of regression slopes. After adjusting for pre-intervention internalizing scores, there was a significant difference between the three intervention groups on post-test internalizing scores ($F(2, 51) = 5.25, p = .008$). Pairwise comparisons indicated that reductions for internalising problems were significantly greater for the children who participated in the MBI group compared to the AC group ($p = .003$). Reductions were also significantly greater for children in the RT group compared to the AC group ($p = .018$). There was no significant difference in reductions between the MBI and RT ($p = .73$). There was a medium effect size ($d = .75$) for improvements in the MBI children's internalising scores, and a large effect size ($d = .96$) for improvement in the RT children's scores.

Repeated Measures for Teacher Informant Data

Table 16 shows the results for separate 2 (within) x 3 (between) mixed design ANOVAs to assess the impact of three different interventions (MBI, RT, and AC) on all teacher informant variables over time.

Table 16

Time, Treatment, and Interaction ANOVA Results for Teacher Informant Variables

Variable Name	Time (Within)			Treatment (Between)			Interaction		
	<i>F</i> *	<i>df</i>	<i>p</i>	<i>F</i>	<i>df</i>	<i>p</i>	<i>F</i>	<i>df</i>	<i>p</i>
Teacher anxiety	8.54	1	.005	1.31	2	.281	4.79	2	.013
Teacher affective	25.77	1	.001	2.81	2	.071	12.59	2	.001
Teacher attention	6.32	1	.015	1.99	2	.148	5.35	2	.008
Teacher internalising	30.55	1	.001	1.23	2	.302	3.851	2	.028

Note. *Wilks' Lambda statistic reported. Teacher anxiety = DSM anxiety subscale T-score from the TRF/6-18; Teacher affective = DSM affective subscale T-score from the TRF/6-18; Teacher attention = attention problem subscale T-score from the TRF/6-18; Teacher internalising = internalizing T-score from the TRF/6-18 (includes anxious/depressed, withdrawn depressed problems and somatization problems).

As can be seen in Table 16, there was a significant time effect and significant interaction for all teacher variables (i.e. teacher informant anxiety, affective, attention and, internalising problems). These variables are discussed separately in the following sub-sections.

Teacher-informant anxiety

Figure 8 shows mean teacher rated anxiety scores for the children in the MBI, RT and AC groups at pre-intervention and post-intervention time points.

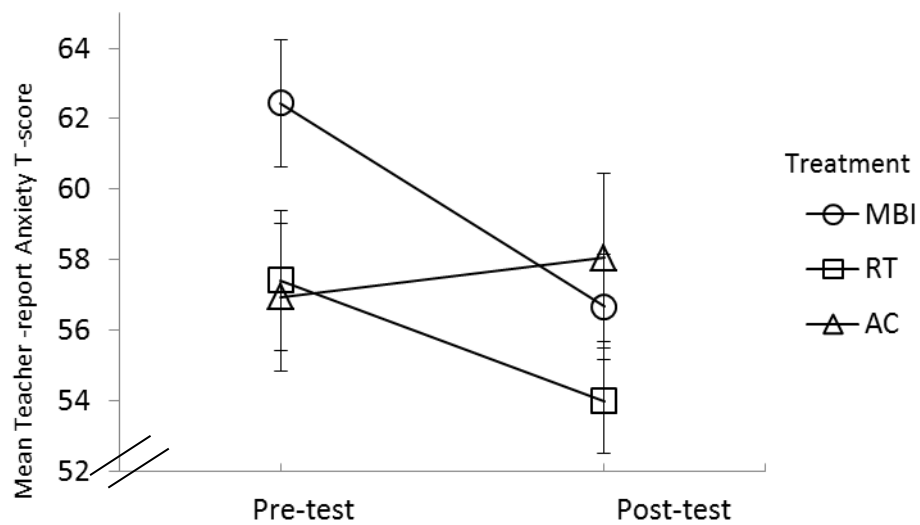


Figure 8. Mean DSM anxiety T-Score from the TRF/6-18 for the MBI, RT and AC group at pre- and post-test.

Inspection of the plot in Figure 8 indicated that there was a discrepancy in the mean teacher informant anxiety scores at the pre-intervention time point. Given this discrepancy, an assumption of significant difference in effectiveness of the treatment groups in reducing teacher reported anxiety levels from the significant time effect ($F(1, 48) = 8.54, p = .005$) and interaction ($F(2, 48) = 4.79, p = .013$) could not be made. To test for differences in effectiveness of the treatment groups in reducing teacher reported anxiety levels, a one-way between groups ANCOVA was employed. The independent variable was the type of intervention (MBI, RT, or AC), and the dependent variable consisted of teacher informant anxiety scores at post-test. Children's pre-test teacher informant anxiety scores were used as the covariate for the analysis. Preliminary checks were conducted to screen for violations of the assumptions of normality, linearity and homogeneity of variances. A violation of the assumption of homogeneity of regression slopes was found ($p = .025$). However, given that the treatment group sizes were close to equal, it was considered acceptable to proceed with this analysis. As previously discussed in the section on "Self-report depression", ANCOVA is considered robust to the violation of the assumption of homogeneity of regression if group sizes are equal (Hamilton, 1977; Levy, 1980).

After adjusting for pre-intervention scores, there was a significant difference between the three intervention groups on post-test teacher informant anxiety scores

($F(2, 47) = 3.29, p = .046$). Pairwise comparisons indicated that reductions in teacher reported anxiety were significantly greater for the children in the MBI group compared to the AC group ($p = .027$). Reductions in anxiety scores were not significantly different for the children in the RT group compared to the AC group ($p = .034$) or the children in the MBI compared to the RT group ($p = .88$). There was a large effect size ($d = 0.85$) for the improvement in MBI children's teacher reported anxiety, and a medium effect size ($d = 0.48$) for children's improvement in the RT.

Teacher-informant affective (depressive) problems

Figure 9 illustrates the mean teacher rated affective (depressive) scores for the children in the MBI, RT and AC groups at pre-intervention and post-intervention time points.

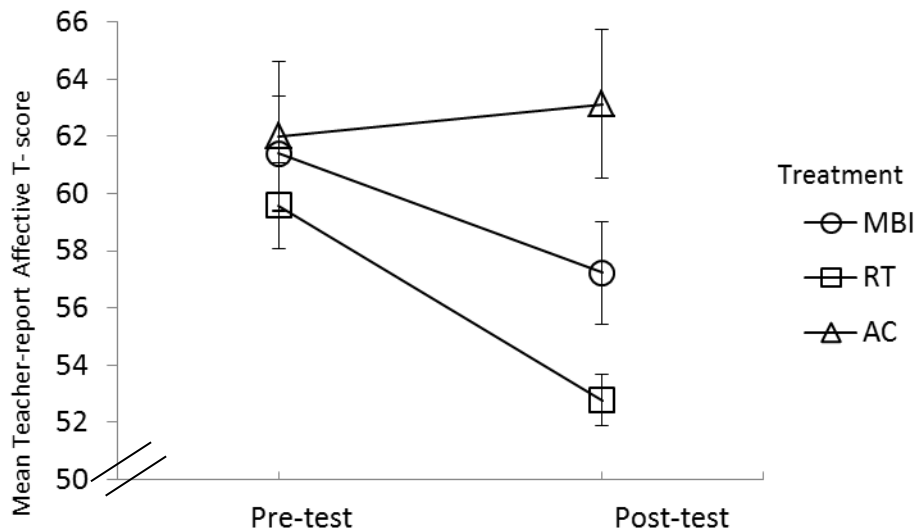


Figure 9. Mean DSM affective T-Score from the TRF/6-18 for the MBI, RT and AC groups at pre and post-test.

Inspection of the plot in Figure 9 indicates that the difference in teacher informant affective (depression) scores at pre-test were minimal between the treatment groups. The significant time effect ($F(1, 48) = 25.77, p = .001$) and interaction ($F(2, 48) = 12.59, p = .001$) indicated that the treatment groups were significantly different in their impact on affective (depressive) scores reported by the teachers over time. K Matrix contrast estimates indicated that reductions in affective scores were significantly greater for the children who participated in the RT group compared to the AC group ($p = .022$). K Matrix contrast estimates also indicated that improvements in affective scores were not significantly different for children who participated in the MBI compared to AC groups ($p = .23$). This result indicated that the children who participated in the MBI group did not show any improvement in teacher reported affective problems compared to the AC group. Improvements over time for children in the RT groups had a large effect size ($d = 1.38$).

Teacher informant attention problems

Figure 10 shows mean scores for teacher informant attention problems for the children in the MBI, RI and AC groups at pre-intervention and post-intervention time points.

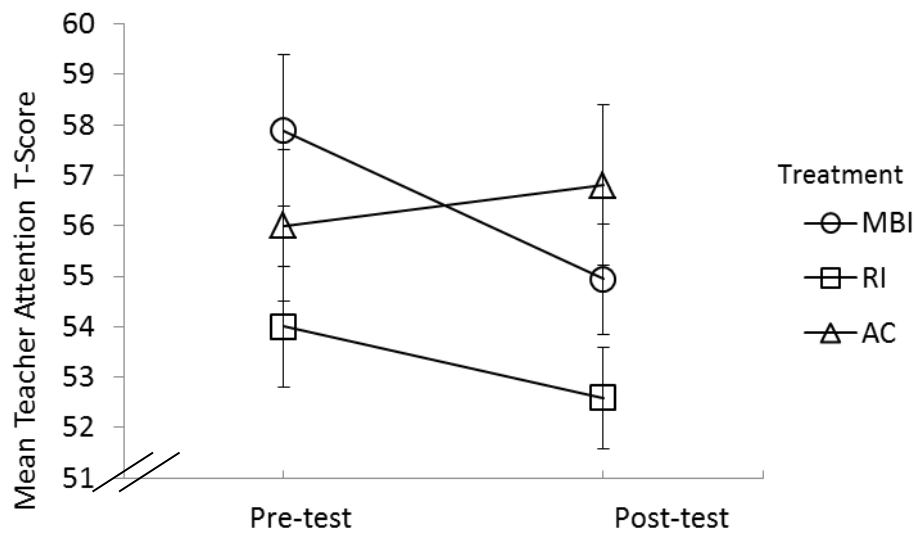


Figure 10. Mean attention problem T-score from the TRF/6-18 for the MBI, RT and AC group at pre- and post-test.

Inspection of the plot in Figure 10 shows that the changes in teacher informant attention problems over time between treatment groups was difficult to interpret due to the substantial discrepancies in mean teacher attention problems between the treatment groups at the pre-intervention time point. Given the pre-test discrepancy, the significant time effect ($F(1, 48) = 6.32, p = .015$) and interaction ($F(2, 48) = 5.35, p = .008$) did not necessarily indicate a significant difference in treatment effectiveness between groups. An ANCOVA was used to compare the effectiveness of the three treatment groups. The independent variable was the type of intervention (MBI, RT, or AC) and the dependent variable was attention scores on the TRF at post-test. Children's pre-test teacher report attention scores were used as the covariate for the analysis. Preliminary checks were conducted to ensure that there was no violation of the assumptions of normality and linearity, homogeneity of variances. A violation of the assumption of homogeneity of regression slopes was found ($p = .016$). However, given that the group sizes were approximately equal, it was considered acceptable to proceed with this analysis (Hamilton, 1977; Levy, 1980).

After adjusting for pre-intervention scores, there was a significant difference between the three intervention groups on post-test teacher report attention scores ($F(2, 47) = 5.93, p = .005$). Pairwise comparisons indicated that the reduction in teacher informant attention scores was significantly greater for the children in the MBI group

compared to the AC group ($p = .003$) with a medium effect size ($d = 0.53$). Children in the RT group showed significantly greater reductions in attention problems than children in the AC group ($p = .009$) with a small effect size ($d = 0.32$). There were no significant differences between the MBI and RT groups ($p = .69$).

Teacher-informant internalising problems

Figure 11 shows mean scores for teacher informant internalising problems for the children in the MBI, RI and AC groups at pre-intervention and post-intervention time points.

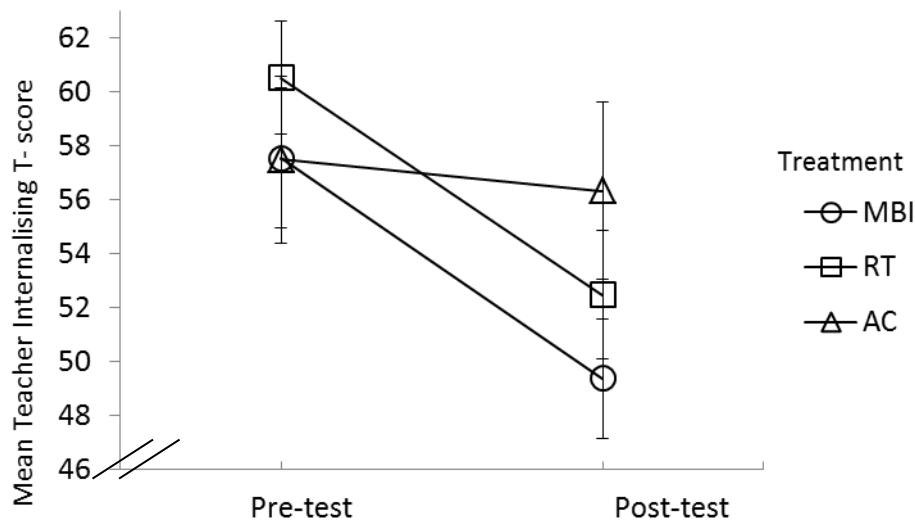


Figure 11. Mean internalizing problem T-score from the TRF/6-18 for the MBI, RT and AC group at pre- and post-test.

Inspection of the plot in Figure 11 indicate that the changes in teacher informant internalising problems over time between treatment groups was difficult to interpret due to the discrepancies in scores at the pre-intervention time point. The significant time effect ($F(1, 48) = 30.55, p = .001$) and significant interaction ($F(2, 48) = 3.85, p = .028$) did not necessarily indicate significant differences in treatment effectiveness between groups. An ANCOVA was employed to compare the effectiveness of the three interventions designed to reduce children's teacher reported attention levels. The independent variable was the type of intervention (MBI, RT, or AC) and the dependent variable was attention scores on the TRF at post- test. Children's pre-test teacher report internalising scores were used as the covariate for the analysis. Preliminary checks were conducted to ensure that there was no violation of the assumptions of normality and linearity, homogeneity of variances or homogeneity of regression slopes.

After adjusting for pre-intervention scores, there was a significant difference between the three intervention groups on post-test teacher report internalising scores ($F(2, 47) = 4.31, p = .019$). Children in the RT group showed a significantly greater reduction in teacher rated attention problems than children in the AC group ($p = .009$) with a large effect size ($d = 1.08$). Pairwise comparisons indicated a non-significant trend for the impact of MBI on children's internalising problems compared to the AC

group ($p = .08$) with a medium effect size ($d = 0.77$). . There were no significant differences between the MBI and RT groups ($p = .69$).

Analysis of Clinical Significance

For the purposes of the present study, clinical significance of improvements in measures was determined by considering the percent of children whose scores returned to normal on the standardised tests used as well as the magnitude of change (derived by the effect size of change). Table 17 shows the percent of children whose scores fell in the clinical range for different measures used in the study at pre and post-intervention time points.

Table 17

Number and Percentage of Children in Clinical Ranges

Self-report data	MBI (<i>n</i> =26)		RT (<i>n</i> =25)		AC (<i>n</i> =25)	
	Pre-test (%)	Post-test (%)	Pre-test (%)	Post-test (%)	Pre-test (%)	Post-test (%)
Self-concept	15 (57.7)	4 (15.4)	14 (56)	14 (56)	16 (64)	14 (56)
Anxiety	15 (57.7)	4 (15.4)	13 (52)	7 (28)	17 (68)	13 (52)
Depression	17 (65.4)	7 (26.9)	13 (52)	7 (28)	13 (52)	12 (48)
Parent-report						
	MBI (<i>n</i> =22)		RT (<i>n</i> = 15)		AC (<i>n</i> = 18)	
Parent anxiety	4 (18.2)	2 (9.1)	2 (13.3)	1 (6.7)	5 (27.8)	5 (27.8)
Parent affective	7 (31.8)	1 (4.5)	4 (26.7)	0 (0)	6 (33.3)	5 (27.8)
Parent attention	7 (31.8)	1 (4.6)	5 (33.3)	1 (6.7)	7 (38.9)	3 (16.7)
Parent internalising	10 (45.5)	3 (13.6)	10 (66.6)	4 (26.6)	9 (50)	5 (27.8)

Table 17 (continued)

Teacher report data	MBI (n= 18)		RT (n= 17)		AC (n= 16)	
	Pre-test (%)	Post-test (%)	Pre-test (%)	Post-test (%)	Pre-test (%)	Post-test (%)
Teacher anxiety	10 (55.5)	2 (11.2)	4 (23.6)	2 (11.8)	3 (18.8)	2 (12.5)
Teacher affective	6 (33.4)	4 (22.2)	4 (23.5)	0 (0)	7 (43.8)	8 (50)
Teacher attention	3 (16.7)	0 (0)	0 (0)	1 (5.9)	3 (37.5)	2 (43.8)
Teacher internalising	10 (55.6)	5 (27.8)	6 (35.3)	2 (11.8)	5(31.2)	6 (37.5)

Note. *Clinical ranges in BECK for Anxiety and Depression include “mild clinical elevation”, “moderate clinical elevation” and “severe clinical elevation”.

**Clinical ranges in BECK for Self-Concept include classifications: “much lower than average” or “lower than average” as defined in the test manual.

***Clinical ranges in CBCL/6-18 and TRF/6-18 include “borderline” or “clinically significant” as defined in the test manual.

As can be seen in Table 17, pre-intervention self-concept scores were in the “lower than average range” or less for more than half the sample. By contrast, at post-test, 15% (4 children out of 26) in the MBI group were in the “lower than average range” or less for self-concept. The improvement in self-concept levels from pre- to post-test in the MBI group had a large effect size ($d = 0.91$). These findings suggest that the statistically significant improvement in self-concept for children in the MBI group compared to the RT and AC groups was also clinically significant.

Table 17 shows that more than half the children in all three experimental groups were in the clinical range at pre-intervention for self-reported anxiety. At post-test, anxiety levels dropped to 15% (4 children out of 26) for the MBI group and 28% (7 children out of 25) for the RT group. By contrast, 52% of the children in the AC group remained in the clinical range (13 children out of 25) for anxiety at post-test. The effect size for reduced anxiety scores was large ($d = 1.15$) for children in the MBI group and medium for children in the RT group ($d = 0.69$). Given the relatively small proportion of children in the MBI and RT groups who fell in the clinical range for anxiety at post-intervention and the large to medium treatment effect sizes, the improvements in children’s self-reported anxiety in the study are considered to be clinically significant.

For teacher informant anxiety, 56% (10 children out of 18) were in the clinical range prior to the MBI intervention, whereas, only 11% (2 children out of 18) remained in the clinical range following the intervention. Similar to the self-reported anxiety, there was a large effect size ($d = .85$) for reductions in teacher reported anxiety scores for the children in the MBI group. Given the low proportion of children in the MBI in the clinical range for teacher report anxiety following the intervention, with a large treatment effect size the improvements in teacher reported anxiety for the MBI group are considered to be clinically significant. For the children in the RT group, the proportion of children who were in the clinical range for teacher report anxiety levels prior to the intervention was a modest 24% (4 children out of 17), and the treatment effect size was small ($d = .48$). Taken together, the clinical significance of the reduction in anxiety levels for the teacher informant data for the RT group should be viewed with caution.

Based on parent ratings, the number of children classified in the clinical range for anxiety was low in both groups (18% for the MBI; and 13% for the RT group). Given the low levels of baseline anxiety reported by the parent informants, the clinical significance of the non-significant findings for differences in treatment group effectiveness on reducing parent-report anxiety is questionable. By contrast, the numbers of children in the clinical range for the parent internalising problems score (which incorporates anxiety, depression and somatization) was more substantial (46%; 20 children out of 22 for the MBI and 67%; 10 children out of 15 for the RT). Following the intervention, only 14% (3 children out of 22) of children in the MBI group and 27% (4 children out of 15) in the RT group were in the clinical range for internalising problems with medium and large effect sizes ($d = 0.75$, $d = 0.96$ respectively). The statistically significant reductions in internalising problems over time were therefore clinically significant.

As can be seen in Table 17, in all experimental groups, more than half the children were in the clinical range for self-reported depression prior to the intervention. Following the intervention, only 27% (7 out of 26 children) in the MBI group and 28% (7 out of 25 children) in the RT group were in the clinical range for depression. For teacher and parent informants, the level of affective symptoms reported at pre-intervention was more modest, ranging from 24 to 44% who were in the clinical range). Following the intervention, there were no children in the clinical range in the RT group and only 5% to 22% remained in the clinical range for the MBI group. Effect sizes for RT and MBI treatments ranged from medium to large for reductions in depressive and/or affective problems. These medium to large effect sizes were supported by statistically significant changes in the self-report data but not for the teacher or parent report data (with the exception of a statistically significant reduction for teacher reported affective problems for children in the RT group).

For parent and teacher ratings of attention problems, at pre-test, the proportion of children in the clinical range was modest for the parent data (ranging from 32% to 39%) and low for the teacher data (ranging from 0 to 38%). The quantitative reductions in children's teacher rated attention problems needs to be considered in light of low levels of children in the clinical range for attention problems at pre-test.

Qualitative Findings

The overall attendance rate for the MBI program was very good with 57 out of the 76 of children (75%) missing one or no sessions. Thirty nine out of 76 children (51.3%) attended all eight sessions and 18 out of 76 children (23.7%) attended seven of the eight sessions. No children attended less than five sessions. There was little difference in attendance between the three experimental groups. Two parent sessions were offered during the MBI program. Of the 26 parents, seven parents attended all three sessions (26.92%) and 14 parents (53.9%) attended two sessions. Five parents (19.2%) did not attend any sessions.

Children completed the program evaluation form following their participation in the experimental groups (i.e., RT and MBI). Table 18 shows the frequency and percentage of responses endorsed as “never”, “sometimes”, “in-between”, “often” or “always” for the MBI and RT groups.

Table 18
Program Evaluation Form Results

Mindfulness Based Intervention (MBI)					
<u>Number of Children Endorsing Item (%) (n=26)</u>					
Item Description	Never	Sometimes	In-between	Often	Always
The group was fun	0 (0)	0 (0)	3 (11.5)	4 (15.4)	19 (73.1)
The group helped me feel more confident	0 (0)	2 (7.7)	2 (7.7)	2 (7.7)	20 (76.9)
The group helped me feel happier in my life	0 (0)	2 (7.7)	5 (19.2)	3 (11.5)	16 (61.5)
I have been able to practice some mindfulness outside the group	0 (0)	4 (15.4)	4 (15.4)	5 (19.2)	13 (50)
The activities were hard to understand	13 (50)	5 (19.2)	3 (11.5)	3 (11.5)	0 (0)

Table 18 (continued)

Relaxation Treatment (RT)					
<u>Number of Children Endorsing Item (%) (n=25)</u>					
Item Description	Never	Sometimes	In-between	Often	Always
The group was fun	0 (0)	2 (8)	1 (4)	3 (12.5)	19 (76)
The group helped me feel more confident	0 (0)	3 (12.5)	2 (8)	1 (4.0)	19 (76)
The group helped me feel happier in my life	0 (0)	1 (4)	4 (16)	2 (8.0)	18 (72)
I have been able to practice some mindfulness outside the group	NA	NA	NA	NA	NA
The activities were hard to understand	16 (64.0)	6 (24.0)	2 (8.0)	1 (4.0)	0 (0)

As can be seen from Table 18, the children's responses on the program evaluation form were mostly positive. Twenty three out of 26 children in the MBI group (88.5%) endorsed "often" or "always" that the "group was fun" and none of the children endorsed "never" or "sometimes". Similarly, for the RT group, 22 out of the 25 children endorsed that the group was fun "often" or "always". Only two out of the 25 children endorsed that the group was "sometimes" fun and none endorsed "never" for this item.

The majority of children in the MBI and RT groups endorsed that "the group helped me feel more confident", "often" or "always". A smaller majority of children from these groups endorsed that the "group helped me feel happier in my life", with 19 of the 26 children from the MBI group and 20 of 25 children from the RT group responding "always" or "often" to this item. Eighteen of 26 children stated that they had been able to "practice some mindfulness outside the group" and no one endorsed "never" for this item. Finally, only three of 26 children for the MBI group and one of 26 children from the RT group responded "often or always" to "activities were hard to understand".

Written responses on the program evaluation form are shown in Table 19.1 (for the MBI group) and Table 19.2 (for the RT group). Children who made no comment at all were excluded and spelling mistakes were corrected.

Table 19.1

MBI Written Responses on the Program Evaluation Form

Mindfulness Group/Item Description		
Was there anything that you liked or disliked about the group?	What were your two favourite activities in the group?	Which activities didn't you like doing?
I liked how we did the meditations	games, blowing bubbles, meditation bubble	don't know
I really liked how Emma made me feel more happy about myself	musical corners and observation game	nothing
No	musical corners and raison	none
I liked meditating	bubble Meditation and meditating	none
I like when Emma Help me about mindfulness group	all	none
No	eating; meditations	none

Table 19.1 (continued)

Mindfulness Group/Item Description		
Was there anything that you liked or disliked about the group?	What were your two favourite activities in the group?	Which activities didn't you like doing?
Nothing	the observation game, musical corner	nothing, I'd enjoy it
No	bubbles and meditation	nothing
I like the group meditation	meditating	no comment
ever think	balloon, friends	nothing
No	balloon activity	balloon
No	sultana and meditation	none
no	balloon game and mindfulness listening	none
I like meditating and homework	blank	blank
blank	bubble's	don't know

Table 19.1 (continued)

Mindfulness Group/Item Description		
Was there anything that you liked or disliked about the group?	What were your two favourite activities in the group?	Which activities didn't you like doing?
blank	blank	blank
no	bubbles, sultanas	not sure
I liked the bubbles	I liked the bubbles and the laying down meditation	nothing
I liked the meditation and the activities I didn't like nothing	meditation, worksheets	nothing
no	all of them	none
not really	meditate and helpful thoughts	none
no	the bubble meditation and the meditation	nothing

Table 19.2

RT Written Responses on the Program Evaluation Form

Relaxation Training /Item Description		
Was there anything that you liked or disliked about the group?	What were your two favourite activities in the group?	Which activities didn't you like doing?
I didn't like that they were arguing about what they wanted to do; I liked I think that the group was fun	I forgot what we did	I liked them all
I like the group to help me I dislike the activities is hard for me	play game and do fun stuff	doing the hard works
I like talking about my problems, I did not like people laughing	relaxations, problem telling	no comment
the relaxation I enjoyed the sharing was great	relaxation and sharing	nothing

Table 19.2 (continued)

Relaxation Training /Item Description		
Was there anything that you liked or disliked about the group?	What were your two favourite activities in the group?	Which activities didn't you like doing?
no comment	relaxation	no comment
I liked everything	balloon and bubble	relaxation
I liked the part we did relaxation, I didn't like when we have to chat	relaxation and work	chatting with the group
no but I like talking about what I did or the weekend	talking about my weekend and that lying down thing	I like it all
I Liked how Emma explained how to do things I liked the whole group	relaxation sharing our day	any I enjoyed everything!!
No	balloon game	no comment
I like when we share and I dislike when I don't know what to do	sharing and blowing bubbles	no comment

Table 19.2 (continued)

Relaxation Training /Item Description		
Was there anything that you liked or disliked about the group?	What were your two favourite activities in the group?	Which activities didn't you like doing?
No	eating and drawing	none
card relaxation laughing nothing was bad	cards relaxation	the bubbles
I liked the time where every time we get cards and say our feelings Jason and Brandon were annoying in the group	blowing bubbles relaxing were we sleep	no comment
no comment	cards bubbles	no comment
No	relaxing and doing work	none
there were much more fun	the relaxation	no comment

As can be seen in Table 19.1 and 19.2, many children in both the MBI group and RT group were able to identify components of the program that they liked or disliked. The majority of children did not endorse any activities that they disliked in the MBI. Activities that were well liked by the children in this group included: the bubble meditation activity; musical corners; raisin meditation; general meditation; balloon activity; helpful thoughts activity; observation game; and, mindful listening. Activities liked for the RT also included activities involving balloons and bubbles (used differently than the mindfulness group); general relaxation; lying down relaxation; and, group sharing. Only one child made reference to their psychological state in the program (i.e., “Emma made me feel happier about myself”).

Assessment of Treatment Fidelity

Treatment fidelity was assessed using a treatment fidelity checklist developed by Borrelli et al. (2005). Each item on the checklist was rated by the researcher as either “0” if criteria were not met or “1” if the criteria were met. The percentage of criteria met for each of the five treatment fidelity categories (i.e., design, training, delivery, receipt, and enactment) was obtained. Ratings and descriptions of each treatment fidelity criteria are displayed in Table 20.

Table 20

Treatment fidelity strategies

Treatment design	Rating*
1. Provided information about treatment dose in the intervention condition	1
<i>Length of contact sessions (s)</i>	
<i>Number of contacts</i>	1
<i>Content of treatment</i>	1
<i>Duration of contact over time</i>	1
2. Provided information about treatment dose in the comparison condition	1
<i>Length of contact session (s)</i>	
<i>Number of contacts</i>	1
<i>Content of treatment</i>	1
<i>Duration of contact over time</i>	1
3. Mention of provider credentials	1
4. Mention of a theoretical model or clinical guidelines on which the intervention is based.	1
Percentage of criterion met for treatment design	100%

Table 20 (continued)

Training providers	Rating*
1. Description of how providers were trained	1
2. Standardized provider training	1
3. Measured provider skill acquisition post training	1
4. Described how provider skills maintained over time	1
Percentage of criterion met for treatment design	100%
Delivery of treatment	Rating*
1. Included method to ensure that the content of the intervention was being delivered as specified (e.g. treatment manual, checklist, computer program)	1
2. Included method to ensure that the dose of the intervention was being delivered as specified (e.g. records number of contact minutes)	1
3. Included mechanism to assess if the provider actually adhered to the intervention plan (applies to human providers only?) (e.g., audiotape, observation, self-report of provider, exit interview with participant)	0
4. Used treatment manual	1
Percentage of criterion met for delivery of treatment	75%

Table 20 (continued)

Receipt of treatment	Rating*
1. Assessed subject comprehension of the intervention during the intervention period	1
2. Included a strategy to improve subject comprehension of the intervention above and beyond what is included in the intervention	1
3. Assessed subjects' ability to perform the intervention skills during the intervention period	1
4. Included a strategy to improve subject performance of intervention skills during the intervention period	1
Percentage of criterion met for receipt of treatment Treatment fidelity strategies	100%
Enactment of treatment skills	
1. Assessed subject performance of the intervention skills assessed in settings in which the intervention might be applied	1
2. Assessed strategies to improve subject performance of the intervention skills in settings in which the intervention might be applied	1
Percentage of criterion met for enactment of treatment skills	100%

*Note: (1=criteria met, 0= criteria not met)

As can be seen in Table 20, treatment fidelity was assessed to be of a generally high standard.

The *Design* category consisted of factors that should be considered when designing a trial but also factors that should be reported on in order to evaluate and replicate a study. The study adhered to all design criteria. The training criteria were also met. The group facilitator for both treatment groups was a qualified psychologist who had over 10 years' experience working with children. In addition, the psychologist had completed some formal training in MBI and RT prior to the study (i.e., practitioner training workshops on mindfulness-based cognitive therapy, workshops on acceptance and commitment therapy, practitioner training for relaxation skills development in children with anxiety problems). During the study, the group facilitator was supervised by suitably qualified psychologists to ensure that her skills were maintained during the study. During the pilot study, the facilitator ran the program with a probationary psychologist who also had formally trained in MBI. Treatment delivery focuses on processes that monitor and improve the delivery of the intervention so it can be established that the intervention was delivered as intended. Attendance to all treatment conditions was assessed as high (discussed earlier), and the content and dose of the experimental treatment interventions were delivered as originally conceptualized. This was achieved through the use of a treatment manual and recording of participant attendance. Session times were strictly adhered to. Unfortunately, due to limited resources at the time of the study, intervention adherence was only assessed by self-report and not assessed by a third party. Nonspecific effects such as therapeutic alliance were controlled for because the group facilitator was the same across conditions.

Receipt of treatment involves ensuring that participants understand the information provided in the intervention. This is especially important when participants may have low proficiency of English (as was the case in the present study). Efforts were made in the pilot study to ensure that the intervention strategies were understood (via content observations from clinicians and also via the evaluation forms completed by the children). Understanding of the group was rated as very good for the main study (see evaluation form results in prior discussion) indicating good receipt of treatment for these children. Finally Treatment Enactment strategies were employed in the study, consisting of processes to monitor and improve the ability of the children to perform treatment related strategies and behavioural skills in their daily lives. This was measured via teacher and parent checklists as well as homework adherence measures (reported in the evaluation form results).

Summary of Results

1. All 76 children completed the study and attended five or more sessions of the RT, MBI or AC programs. The MBI showed good attendance with 57 out of the 76 of children (75%) missing one or no sessions.
2. Two parent sessions were offered during the MBI program. Of the 26 parents who participated in the study, 21 parents (85%) attended one or more sessions.
3. Qualitative results from the “program evaluation form” were generally positive. Twenty three out of 26 of the children (89%) indicated “often” or “always” that the MBI group was “fun”. Twenty two out of 26 of the children (85%) indicated “often” or “always” that the MBI group helped them to feel more “confident” and 19 out of 26 (73%) indicated that they were “happier in their lives”. Eighteen out of 26 children (69%) reported that they were able to practice the mindfulness meditation outside the group by listening to the audio CDs provided. Only 3 out of 26 (12%) children reported that they found the activities in the MBI group hard to understand.
4. Although missing data were minimal for the self-report variables, for the case of the teacher and parent informant data, the numbers of cases for analysis were reduced to 51 and 55 respectively (from a total of 76 children who were included in the study). For the Cog State data, there were 27 cases missing leaving 49 cases for analysis.
5. All measures used in the study showed moderate to very high internal consistency at pre- and post-test data collection points including the MAAS that was modified for use with the children in the sample.
6. Preliminary analyses indicated that the data were appropriate for ANOVA and ANCOVA.
7. Improvements in self-concept from pre- to post-test were significantly greater for children in the MBI group compared to the children in the AC group who actually showed a slight decrement in self-concept over time. The statistically significant improvement in self-concept was also clinical significant. The improvements for self-concept for the MBI group had a large effect size ($d = 0.91$). Fifty eight percent (15 children out of 26) had below average self-concept prior to the MBI

intervention, which dropped to 15% (four children out of 26) following the intervention. An improvement for self-concept for children in the RT group was not significantly different compared to the AC group.

8. Improvements in self and teacher reported anxiety scores from pre- to post-test were significantly greater for the children in the MBI and RT groups compared to the children in the AC group. The statistically significant reduction in anxiety for children in the MBI group was also clinically significant. The effect size for reductions in anxiety for the MBI group was large ($d = 0.85 - 1.15$). Fifty eight percent to 67% of the children in the MBI group were classified in the clinical symptom range for anxiety at pre-test whereas at post-test, only 11 - 15% remained in the clinical range.
9. Parent ratings of anxiety reduced for all three groups over time but there were no significant differences between groups in this reduction. At pre-test, the percentage of children who had anxiety scores in the clinical range was relatively low (between 13 - 28%), and the clinical significance of these findings is questionable.
10. Overall parent internalising scores (which incorporates anxiety, depressive and somatization problems) showed significant reductions for the children in the MBI group and RT groups compared to the control groups with a medium effect size for the MBI group ($d = 0.75$) and large effect size for the RT group ($d = 0.96$)
11. Improvements in self-reported depression scores from pre- to post-test were significantly greater for the children in the MBI and RT groups compared to the children in the AC groups. This finding was also clinically significant. The effect sizes for the improvements for the children in the MBI group were large ($d = 1.05$). Sixty five percent (17 of 26 children) in the MBI group had clinical levels of depressive symptoms at baseline, whereas at post-test, only 27% (7 children out of 26) remained in the clinical range. Reductions in children's teacher and parent informant affective (depressive) problems in the MBI were not significantly different from the AC group. Clinical levels of affective problems at baseline ranged from 27 to 33% for parent ratings and 24 to 44% for teacher ratings.
12. There were no significant improvements in Cog State test scores over time when non-verbal IQ was accounted for.

13. Reductions in teacher informant attention problems were significantly greater for children in the MBI and RT groups compared to the AC group. The significant reductions in teacher reported attention problems should be considered in light of the small number of children in the clinical range prior to the intervention. Reductions in parent informant attention problems were not significantly different between the three treatment groups.
14. There was no significant difference between the three experimental groups in change over time on the measure of mindfulness (MAAS) or psychological wellbeing (CDS, Pleasure scale).
15. Treatment fidelity was assessed as generally high. The main limitation had to do with the delivery of the treatment. While there was a clearly presented treatment manual there was no secondary mechanism to assess if the researcher adhered to the intervention plan (e.g., audiotape, third party observation).

Chapter 9

Discussion

Developing innovative approaches for improving the mental health of children from disadvantaged backgrounds is a priority. These children are less likely to access treatment, and are at an increased risk of developing mental health problems (Sawyer et al., 2008). MBI is well suited to helping these children because the approach uses experientially presented material as opposed to relying completely on didactic teaching (Gay, 2000; Thompson & Gauntlett-Gilbert, 2008). There is accumulating evidence that MBI is effective in ameliorating psychological problems in children (Burke, 2010) with evidence of suitability for children from disadvantaged backgrounds (e.g., Liehr & Diaz, 2010; Mendelson et al., 2010; Napoli, 2005; Napoli et al., 2001).

The present MBI was adapted from an adult MBCT program (originally developed for adults who were in remission for depression; Segal et al., 2002) with permission from the author (Dr Zindel Segal). The first aim of the study was to evaluate the feasibility and acceptability of this MBI for children in a school setting in a culturally diverse and low socio-economic area of Melbourne, Victoria, Australia. The second aim was to evaluate the effectiveness and efficacy of the MBI for improving psychological symptoms and self-concept in these same children. Children were allocated to MBI, RT, or AC conditions via cluster randomization with hierarchical design methodology. Of specific interest was the relative effectiveness of MBI for reducing symptoms of anxiety, depression, attention problems and improving self-concept compared to the RT and AC treatments. The third aim of the study was to investigate whether participation in the MBI improved qualities of mindfulness compared to participation in the RT and AC groups.

Feasibility and Acceptability of MBI

The MBI was acceptable for a non-clinical sample of disadvantaged Australian children aged between 8 and 12 years. The program was feasible for implementation in a school setting. The children lived in a local government area of Melbourne that has been categorized by NATSEM at the University of Canberra as having the highest level of risk for disadvantage (Phillips et al., 2013). The children were from low socio-

economic and/or culturally diverse, non-English speaking backgrounds. They had clinical levels of psychological symptoms on a routine mental health screening assessment organised by the welfare staff at the school. Mental health programs that engage children from disadvantaged backgrounds are important because these children are less likely to participate in traditional programs and many lack the family support required for attending these services (Johnson & Tucker, 2008; Sawyer et al., 2008).

Program attendance for the MBI and RT groups were comparable to general school attendance rates. Three quarters of the sample attended at least seven out of eight sessions and all children attended five sessions or more. These attendance rates are positive given that other studies on MBI for children have reported dropout rates of as high as 30% (e.g., Lee, Semple, & Miller 2006) and children from disadvantaged backgrounds have lower rates of attendance to mental health services, in general (e.g., Kazdin, 1996; Sawyer et al., 2008; Wiergbicki & Perkarik, 1993). There were potentially fewer barriers for the families to participate in this school based MBI program. For example, the program was not reliant on parents to transport the children to mental health service locations. The children were already attending school and had a sense of trust in this environment. Parents also had an established trust in the school that was presumably generalised to the treatments offered in this setting (Johnson & Tucker, 2008).

Results from the program evaluation form indicated that the MBI and RT programs were well tolerated and had high levels of acceptability for the children. More than 80% of children who participated in the MBI program reported that they had “fun” and that the groups helped them to feel “happier” and more “confident” in their lives. In general, acceptability (on the program evaluation form) was similar for the children in the MBI and RT groups. This indicated that the current adaptation (MBI) of an adult MBCT program had similar acceptability to a commonly used psychological intervention for children (i.e., the RT program).

The pilot study indicated that many of the children found the mindfulness program (MPP) difficult to understand. In response to this finding, the verbal and written language components used in MPP were substantially simplified for the MBI used in the main study. While none of the children had formal diagnoses of language based learning disorders, English was mostly a second language for the children in the

current study. Therefore, reducing the language complexity in the MBI was necessary. Results from the main study indicated that the efforts to modify the language complexity in the program were successful. In the main study, only 19% of children rated that the program was “sometimes hard to understand” and 50% endorsed that the activities were “never” hard to understand.

Home practice rates for the MBI were higher in the main study compared to that reported by the children in the MPP. All children reported that they were able to practice the meditation exercises, and 69% stated that they practiced the mindfulness meditation “often” or “always”. The improved home practice rate was likely a result of the provision of audio meditation CDs for the children at the beginning of the MBI in the main study. By contrast, children in the MPP were expected to rely on written meditation scripts to complete the home practice. The finding that most of the children in the main study were able to carry out home practice is important because past research has found that home practice is a major contributing factor in positive outcomes for children participating in MBI (e.g., Saltzman, 2008).

The group format proved to be appropriate for the delivery of the MBI. Although MBI for children can be delivered individually, it is more often delivered in a group format, which offers rich shared experiences (e.g., Thompson & Gauntlett-Gilbert, 2008). Personal experiences provided by group members increased the children’s opportunities for understanding MBI concepts. Given that the children had a low level of English proficiency, making their understanding of some MBI concepts sometimes difficult, this shared experience benefit was of particular significance.

Parent acceptance and support for the MBI program was very positive with 76 of the 85 parents (89%) giving permission for their child to participate in the study. Parent participation rates during the MBI program were also positive. Over 80% of the parents attended one or both of the parent sessions. In addition, qualitative information indicated that the parents were satisfied with their children’s improvement in the program. This finding is especially encouraging, as parents of this population are often hard to engage in mental health services for their children (Sawyer et al., 2008). Running programs in a child’s school environment provides an effective pathway for the much needed parent engagement. This finding supports the feasibility of including parents in the MBI program in a sample of families from non-English speaking and

culturally diverse and/or low socioeconomic backgrounds. Support for feasibility and acceptability for the program for parents is important because parent involvement in MBI has been associated with positive mental health gains for children (Saltzman, 2008).

Treatment Effects

Reductions in anxiety symptoms

The hypothesis that children who participated in the MBI would show greater improvement in anxiety symptoms compared to those who participated in the AC group was supported. The MBI group showed superior improvements for self-reported, and teacher informant anxiety compared to the AC group. The percentage of children in the clinical range for anxiety symptoms dropped considerably according to both these informants. These results add weight to mounting evidence that MBI improves anxiety symptoms in children (e.g., Bogels et al., 2008; Lee et al, 2008; Mendelson et al., 2010; Napolios et al., 2005; Semple et al., 2010).

The RT was also superior to the AC group in reducing anxiety symptoms according to self and teacher reports. The RT program involved body awareness training, progressive relaxation training, yoga, relaxation breathing, guided imagery and psycho-education to explain physiological relaxation and stress responses (Richard, 1992). It is well recognised that RT reliably produces the “relaxation response” (Benson, 1975). For example, Manzoni, Pagnini, Castelnuovo, and Molinari (2008) conducted a meta-analytic study, and surveyed 10 years of research into RT for anxiety. Twenty seven studies were identified that used relaxation techniques in the treatment of anxiety. On average, the results showed that RT programs significantly reduced symptoms of anxiety compared to nonspecific relaxations (e.g., sitting and relaxing), or waitlist controls. These improvements produced medium to large effect sizes. The authors concluded that: “the results show consistent and significant efficacy of relaxation training in reducing anxiety” (Manzoni et al., 2008, p.9). While RT as a stand-alone treatment is effective in reducing anxiety (e.g., Chang & Hiebert, 1989), the evidence base suggests that combining RT with cognitive interventions optimizes treatment efficacy (Silverman et al., 2008).

Contrary to the findings for teacher and self-report data, the MBI and RT did not have a statistically significant impact on children's anxiety according to parent report despite producing medium to large effect sizes. However, the clinical significance of the parent informant anxiety data was questionable because only a minority of children (13 to 18%) were classified in the clinical range at pre-test. This means that there was substantially less room for improvement for parent ratings of anxiety, which is likely to have contributed to this non-significant result. The finding that samples with relatively low levels of clinical problems do not improve as favourably as clinical samples with relatively high levels of psychopathology is well established (Zoogman, Goldberg, & Miller, 2014). Baseline levels of parent reported internalising symptoms (which incorporated anxiety, depression and somatisation) were more substantial (46–67% of children in the clinical range). Parent reported internalising scores were significantly reduced for the children in the MBI and RT groups compared to the AC group with a medium effect size for the MBI group ($d = 0.75$) and large effect size for the RT group ($d = 0.96$). This finding provided some statistical support from the parent informant data that participation in the MBI and RT programs was beneficial for children's internalising problems more generally (which includes anxiety symptoms).

Reductions in depressive symptoms

The hypothesis that children who participated in the MBI would show greater reductions in depressive symptoms compared to the AC group was partially supported. Improvements in self-report depression scores from pre- to post-test were significantly greater for the children in the MBI and RT groups compared to the children in the AC group. The effect size for the improvement in the MBI group was large ($d = 1.05$). Sixty five percent of the children in the MBI had clinical levels of self-report depression at pre-test, whereas at post-test, 27% had scores in the clinical range. By contrast, there were no significant differences between the MBI and AC groups in the reduction of teacher and parent ratings of depressive symptoms. It is possible that the benefits of MBI for children's overt depressive symptoms (those observed by their parents and teachers) might not have been immediately obvious to the informants post intervention. Some areas of psychological adjustment in children (such as mood) may take longer than others (such as stress and/or anxiety response) for informants to report positive changes (Mendelson et al., 2010). Follow up assessments would have helped to clarify this.

Zoogman et al. (2014) found that MBI for children was most effective overall for clinical populations. Studies where MBI has been effective in ameliorating depression in children have been primarily on clinical populations of depressed children where pre-test levels of depressed symptoms are usually high (e.g., Biegel et al., 2009; Liehr & Diaz, 2010). By contrast, studies on non-clinical samples of depressed children, where baseline symptoms are lower, have not reported such results (e.g., Mendelson et al., 2010; Saltzman, 2008). A similar pattern of results was found in this study. Based on child self-report, more children were classified in the clinical range at pre-test. For these children, there was a significant reduction in their depression scores at post-test. By contrast, according to the teacher and parent data (where there were fewer children in the clinical range on depressive symptoms at baseline) the MBI was not significantly more effective than the control group.

The present study supported the effectiveness of the MBI for ameliorating self-reported depression in children, compared to a teacher run wellbeing program. This is a promising result, especially given that effect sizes for psychotherapeutic treatment of children's depression is generally low. For example, large meta-analytic studies have found that effect sizes for treatment studies to improve mild to moderate depressed symptomology in children are lower than previously calculated and generally no better than active control groups or social support (e.g., Cheung et al., 2005; March et al., 2004; Weisz et al., 2006). The present results suggested that psychological interventions (such as the MBI and RT programs) may be beneficial for children with depressive symptoms over and above social support and expectancy biases.

The impact on attention

The hypothesis that MBI would improve attention in children was partially supported. Children who participated in the MBI and RT groups showed significant improvements in attention problems according to their teachers compared to the AC group. The lack of improvement for the parent data and attention performance was unexpected since the enhancement of attention has long been considered the essence of mindfulness practice and there is some evidence that MBI improves attention on both cognitive and behavioural measures in children (e.g., Boogels et al., 2008; Napoli, 2005; Saltzman, 2008; Semple, 2010).

The most likely explanation for the non-significant finding for the parent informant data was the increased chance of a Type II error due to the substantial amount of missing data. An alternative explanation was the limited number of children in the clinical range at baseline (0-37.5%) for parent reported attention problems. Benefits of MBI for childhood attention problems have only been demonstrated in clinical samples (e.g., Boogels et al., 2008; Napoli, 2005; Saltzman, 2008; Semple, 2010).

Attention performance did not improve over time on the neuro-cognitive test when non-verbal IQ was used as a co-variant in the multivariate analysis. It is possible that MBI improves attention performance that is not captured by the CogState Chase test. Past research has shown that MBI improves specific neurocognitive attentional processes. For example, Saltzman (2008) found that children who participated in a MBSR program improved attention control, which refers to an individual's capacity to choose what they pay attention to.

Improvements to self-concept

For the purposes of this study, the terms self-concept and self-esteem were used interchangeably to mean an appreciative appraisal of oneself (Schiraldi, 2001). The hypothesis that MBI would improve self-concept in comparison to the AC and RT groups was supported. Children who participated in the MBI group showed greater improvements in self-concept compared to the AC and RT groups with a large effect size ($d = .91$). The fact that fifty-eight percent of the children who participated in the MBI had lower than average self-concept levels at pre-test compared to 19% at post-test indicates that this result is clinically significant. This finding adds support to the current knowledge base that MBI has a role in improving children's self-concept. Positive self-concept is crucial to a child's mental and social well-being and serves as a protective factor in his/her overall physical and mental health (Mann et al., 2007; Trzesniewski et al., 2006).

Previous research on the effectiveness of MBI for improving self-concept and/or self-esteem in children has been limited. There is one study supporting a benefit for self-esteem in 102 adolescents (Biegel et al., 2009), and another study that did not demonstrate any benefit for 32 primary school aged children (Coholic, 2011). However, Coholic (2011) used an art-based MBI that varied considerably from the MBI used in the present study. The current MBI differed from that used by Coholic (2011) by the

inclusion of: thoughts and feeling activities (to distinguish and heighten observation and awareness of thoughts and feelings); event diaries to encourage children to observe their thoughts and feelings (whether triggered by comfortable or uncomfortable events); automatic thought exercise where children were encouraged to observe their automatic thoughts and then observe them float away in bubbles (in a bubble meditation exercise); the judgment versus observation exercise and optical illusion exercise (which elucidated the idea that judgments are opinions and not facts).

It is possible that in the present study, self-concept improved as a result of the above components. This is because, after participating in these exercises, the children might have been better able to formulate balanced appraisals of themselves rather than hold on to fixed negative self-judgments. The exercises in the MBI emphasised present open minded direct observation over judgment or interpretation. The exercises also helped the children to become aware of their negative automatic thoughts. Once the children became aware of their negative thoughts, they had the opportunity to experience distance from them and hold less conviction of their truth. This awareness potentially allowed the children to experience the thoughts that they have about themselves in a present, open and relatively non-defensive manner, even when aspects of their identity might have be challenged. Kernis and Heppner (2007) argued that this type of awareness protects a person's self-esteem from fluctuations according to environmental feedback. This stable and secure self-esteem is associated with higher levels of self-esteem (Kernis & Heppner, 2007).

Impact on psychological wellbeing

The hypothesis that children who participated in the MBI would show greater improvements in general psychological wellbeing compared to children in the RT or AC was not supported. There was no significant improvement to the children's self-reported levels of positive wellbeing over time (pleasure). These findings are consistent with a recent meta-analysis of MBI in children that showed minimal improvement for measures of psychological wellbeing such as social skills and quality of life measures (Zoogman, et al. 2014). These results are of particular interest given the current movement to implement positive psychology and/or mindfulness programs in primary schools to improve the wellbeing of whole school communities without a specific emphasis on mental health (e.g., Hawn, 2011; Lantieri & Goleman, 2008). This is based

on an assumption that MBI has benefits for all children's wellbeing which as yet does not appear to be justified from the research.

Qualities of mindfulness

The MAAS (Brown & Ryan, 2003) was adapted for children in the present study. Results indicated that the adapted MAAS had moderate to very high internal consistency at pre- and post-test. This indicated that the items within the scale were measuring a similar construct. Qualitative data indicated that the current adaptation of the MAAS was acceptable for children aged between 8 to 12 years of age from disadvantaged backgrounds. The present study adds to the literature as it provides a further tool to assess mindfulness constructs in children from this demographic.

The hypothesis that MBI would improve qualities of mindfulness in the children was not supported. Although scores on the MAAS increased from pre- to post-test, children who participated in the MBI group showed similar improvements to the RT and AC groups. Studies that have found improved scores on the MAAS following participation in a MBI program have been limited to adolescent samples (e.g., Bogels 2008). It may be that adolescents and children benefit from MBI for different reasons. Mindfulness as a psychological construct has been argued to have multiple elements (Langer & Moldoveanu, 2000) and it is now considered unlikely that MAAS measures them all. Current research on the assessment of mindfulness in adults suggests that it may include five component skills: observing; describing; acting with awareness; non judgment of inner experience; and non-reactivity to inner experience (Baer et al., 2008). Saltzman et al. (2008) found that primary school-aged children improved on mindfulness meta-cognitive qualities such as "self-judgment" and "self-compassion" but these qualities are not measured by the MAAS. Unfortunately, assessments that measured broader constructs of mindfulness for children had not yet been developed at the time when the planning for the study occurred.

How MBI Improves Children's Mental Health Problems

It has been speculated that MBI improves children's mental health problems via enhancement of emotional regulation (Semple et al., 2010). Emotional regulation is an individual's ability to manage his/her internal cognitive, emotional and physiological experience so that he/she can skilfully integrate with the external environment. *Attention*

deployment is an emotional regulation strategy that involves shifting attentional focus towards or away from particular aspects of emotional stimuli (Ferri, Schmidt, Hajcak, & Canli, 2013). The meditation practices in the MBI were all exercises that required the children to attend to moment by moment internal and/or external experience. The practice of paying attention to the present moment possibly reduces past or future-based negative thinking that is associated with psychological problems such as depression and anxiety. Past-oriented thinking when attached to negative affective states is argued to be an important component of depressive symptomology (e.g., guilt, remorse, shame, blame; Beck, 1995; Just & Alloy, 1997). Future-oriented thinking such as thinking about possible threats can lead to unhelpful anxiety responses (Borkovec, Roemer, & Kinyon, 1995). When these negative symptoms from past or future-based thinking persist for long enough, associations between this thinking and negative affect strengthen and are known as cognitive schemas, which are argued to increase the risk for depression and anxiety (Beck, 1995). Mindfulness enhances moment-to-moment experience by the self-regulation of attention, potentially de-habitualising maladaptive cognitive schemas that have been created from past or future-based negative thinking (Semple, 2004).

In addition, improvements to anxiety and depressive symptoms from MBI possibly occurred via enhancement of *meta-cognitive awareness*. Meta-cognitive awareness is *thinking about or observing your internal experiences*. Through participation in the MBI program, children were encouraged to observe their thoughts, feelings and bodily sensations in the present moment without judgment. One example of this would be the “Feelings Meditation” (developed by Saltzman, 2008) where children were invited to say “hello” to all their feelings in the present moment (e.g., sad, happy, angry). In this exercise, the children reported being aware of unpleasant emotions but not being as distressed by them. Emotions such as anxiety and sadness occur in the present, and are a guide to actions towards immediate goals. Rather than attempting to control, interrupt, change, or avoid the experience of emotions, people need to learn to live in harmony with them (Greenberg, 2001). The event whereby an individual experiences less distress following intentional observation of their internal experience without judgment, is thought to occur via *decentering*. This is where an individual is actively observing multiple aspects of experience directly without emotional, physiological or cognitive reaction (Semple et al., 2010). Several

researchers have argued that decentering is analogous to the psychological processes of desensitisation and/or exposure (Kabat-Zinn, 1982; Linehan, 1993a,b; Teasdale, 2004). For example, Linehan (1993a, d) argued that non-judgmental observation is a form of exposure to thoughts and emotions without trying to avoid or escape them and that this should encourage extinction of fear responses and reduce maladaptive avoidant behaviours.

Given that mindfulness is likely to improve self-regulatory attentional processes, and at the same time reduce anxiety, Zelzo and Lyons (2012) provided an alternative mechanism to emotion regulation that conceptualises clinical change by which mindfulness works. They suggested that the *iterative reprocessing* model might provide a mechanism of clinical change for mindfulness. According to this model, being mindful involves reflecting on present moment internal and external experiences clearly and objectively. This practice results in an increased sustained state of purposeful attention as opposed to fragmented and automatic attentional processes, as is the case with multi-tasking or past and/or future based thinking. This state of purposeful reflection is argued to improve self-regulation in two ways. Top down processes such as sustained attention or cognitive flexibility are strengthened, and bottom-up interference such as emotional reactivity is reduced, Zelzo & Lyons, 2012.

It is also possible that MBI improves psychological symptoms such as anxiety and stress because these practices can directly affect physiological responses (Baer, 2003). It is well documented that many meditation practices elicit a relaxation response (e.g., Orme-Johnson, 1984; Walolace, Benson, & Wilson, 1984). However, the purpose of mindfulness is not to induce relaxation, but instead, to teach nonjudgmental observation of internal and external experiences which might include sympathetic arousal, negative affective states, muscle tension and other experiences that are incompatible with relaxation (Baer, 2003). Research is beginning to show that mindfulness meditation has a unique impact on human physiology when compared to relaxation states (such as progressive relaxation; Dooley, 2009). Although the study supported that MBI and RT have a similar positive impact in reducing children's anxiety, self-reported depressive symptoms and teacher reported attention problems, the mechanisms by which each program produced these results may not be the same.

Treatment Fidelity

The study had generally good treatment fidelity as described by Borrelli et al. (2005). The provider was a qualified psychologist with some formal training in mindfulness-based intervention. The treatment was well described with length and number of contact sessions recorded for all treatment conditions. For the MBI and RT programs, detailed treatment manuals were used and adhered to via self-report methodology. The treatment manuals provided session by session details of facilitator interventions and handouts. Treatment fidelity could have been enhanced by a secondary mechanism to assess if the facilitator adhered to the intervention plan (e.g., audiotape, third party observation).

Limitations

A limitation of the present study was the high rate of missing data for the parent and teacher questionnaires. As a result of these missing data, the statistical power was reduced, which increased the chance of a Type II error (i.e., that a difference did actually exist, but was not detected). Reasons for the high levels of missing data were due to unforeseen circumstances that occurred during the study. For parents, these circumstances included the inconvenience or difficulty coming to the school for meetings (in the case of parents who required interpreters to complete surveys). Response rates might have been better if the parent checklists were translated into the various languages, however, this was beyond the resources available to the current project. Another solution may have been to shorten the checklists, but it is unclear as to whether this would have improved parent response rates. A further improvement to parent questionnaire yield might have been to provide the parents with incentives for questionnaire completion such as a voucher for example.

The amount of missing teacher data was unexpected. Initially, all of the teachers were enthusiastic and willing to complete the checklists in the school holidays. However, this did not translate into actually completing the questionnaires in the required time period. One teacher did not complete any post assessment forms due to “personal issues” and another teacher stated that he just rated “0” on all problems without reading the items when he did not think a child had issues that were of concern, which rendered these data invalid. One way to avoid this problem in future research would be to have a second source of teacher informants such as the specialist teachers.

In addition to the classroom teachers, specialist teachers (i.e., the library teacher, physical education teacher or art teacher) could also complete pre- and post- evaluations for all the children, which would provide back-up if the classroom teacher failed to complete the assessments. As with the parent data, a further improvement to teacher questionnaire yield might have been to provide the teachers with incentives for questionnaire completion such as a voucher for example.

There was also a large amount of missing data for the neuro-cognitive test of attention. Each child was required to be individually assessed using the researcher's computer, which took on average of 20 minutes. This testing was not completed for some students due to school absences around the scheduled times for their testing. Group administration of this computer based assessment in a computer lab would have alleviated this problem, but unfortunately, this facility was not available for the present research.

A further limitation was the lack of independence of the researcher who was also the treatment facilitator and an employed psychologist at the school. This would have been more of an issue if the treatment facilitator was providing concurrent psychological services to the children who were participating in the experiment. To safeguard against this, efforts were made to ensure that the researcher/ group facilitator did not have multiple relationships with the children. There was another psychologist working at the school who was available to treat the children in the study as needed. Much of the psychologist's other work at the school during the treatment phases involved psychological assessment and treatment of children in Prep to Grade 2, which eliminated the chances that the researcher would be involved with the children in the study in any other way. As the study began at the time of the researcher's employment at the school, the group facilitator did not have prior relationship with any of the children in the experimental groups.

Due to the practical constraints of running the program in a school environment, standard randomisation procedures for allocating children to treatment groups were not possible. The compromise was to allocate classrooms to the experimental groups via cluster randomisation. This was done via a hierarchical design where classes were randomly assigned to either the MBI or RT, and children were then allocated to either the AC or to the treatment groups (MBI or RT; depending which the class had been

allocated) via a minimisation procedure. This procedure was not purely random as a fixed number of nine children were required for allocation to the RT or MBI program. One disadvantage of this sampling procedure was the increased risk that there would be differences between the children at baseline. However, this procedure is argued to be an acceptable compromise to a standard randomisation methodology and remains appropriate for repeated measures statistical analysis (e.g., Rapport, et al., 2008).

The finding that the children in the study reported having more problems with anxiety and depression than was rated by their parents and teachers created some challenges for the interpretation of the results. Discrepancies between multiple informants in the severity of psychological symptoms are common and expected in child psychopathology research (Smith, 2007). Reasons for these discrepancies often reflect the psychological characteristics of the informants. For example, Finnegan (2011) found that factors associated with teacher and mother discrepancies in ratings of children's behaviour related to levels of maternal depression and teacher stress. Parents might not have been aware of the extent to which the children experienced anxiety. This is possibly because anxiety is an internal state and only noticeable to a caregiver by secondary behaviours (e.g., overt nervousness, overt fearfulness). These signs could also be dismissed or explained away by interpretations such as the child is "just quiet". Parents from non-English speaking backgrounds might not be alert to the signs of anxiety as described by the CBCL/6-18. There may have also been barriers in parent-child communication about mental health issues, particularly if the child no longer spoke in the parent's native language (Fillmore, 1991).

At the time that this study was planned, validated and reliable measures of mindfulness and meditation practice were limited to a few measures that had been developed specifically for adults (Brown & Ryan 2003; Lau et al. 2006). Consequently, as discussed above, the MASS was used with adaptations made so as to be more suitable for the children in the current study based on results from the pilot study. While the adapted MAAS showed adequate reliability in the present sample, other developmentally appropriate measures are now available such as the Child and Adolescent Mindfulness Measure (CAMM; Greco, Smith, & Baer, 2011) that might have resulted in more positive findings. Similar to the limited choices of mindfulness measures at the time when the research was planned, there was also limited evidence regarding the neurocognitive components of mindfulness. While the CogState Chase

Test is a well validated measure of sustained attention with limited practice effects (Falletti, et al., 2006), studies have begun to show that MBI improves attentional control and executive attention (e.g., Saltzman, 2008, Zelzo & Lyons, 2012). Given this, changes in attention would have been better measured by tests of attentional control (e.g., Poster, & Fan, 2002).

The current study was also limited in that the measures used were mostly American, and as such might not have been sufficiently culturally sensitive for the present sample (Canino & Bravo, 1994). This problem was not easily rectified as the sample consisted of children from families from multiple cultural backgrounds, each of which would have required specific considerations and one measure was needed to compare all the children. This issue is common in research on children from diverse cultural backgrounds (Dumas, Rollock, Prinz, Hops, & Blechman, 1999). The use of scales such as the Achenbach where cross cultural validation has been conducted at least partially addressed this issue (de Groot, Koot & Verhulst, 1994).

Lastly, on the CBCL/6-18 and TRF/6-18, parents and teachers are instructed to complete forms evaluating problems that describe children based on “now or within the past six months”. For the present study, this instruction was changed to “now, or within the past two weeks” so that the measures would be sensitive to potential changes after the eight week intervention period. Although this change was necessary, the alteration was a potential limitation as it might have impacted on the validity and reliability of these standardized measures.

Directions for Future Research

Given the promising results of this study, further testing of MBI as an approach to improve mental health in children from disadvantaged backgrounds is warranted. In particular, larger samples to increase power to detect statistical differences between groups when effect sizes are small or moderate is required to further establish the effectiveness of MBI. Future research could involve adjustments in methodology to improve data retention levels for parent and teacher informants. Inclusion of secondary backup informant teacher and voucher incentives for completion may improve data retention. Use of translated questionnaires in the native language of parents might be an improved way of gaining information about childhood mental health problems.

Further work is needed to determine how relaxation and meditation improve mental health. With the exception of self-concept, positive effects of the MBI were mostly comparable to RT for anxiety, depression and inattention. Some of the components in the MBI and RT programs were the same (e.g. Hatha Yoga) or shared some similarities (e.g., the mindfulness body scan [MBI] and progressive relaxation [RT] has many similarities). However, there are many key differences between the MBI and RT programs. In addition, there is a growing body of research to indicate that mindfulness meditation has a unique physiological impact on the brain and body that is distinct from relaxation techniques such as progressive relaxation (Dooley, 2009). Further work that compares the impact of relaxation and meditation on children's mental health is warranted to determine which interventions are suitable for which groups of children. This this work would no doubt have important implications for clinical practice.

Inclusion of tests that measure meta-cognitive aspects of mindfulness such as self-judgment and self-compassion, may clarify how MBI improves self-concept in children (e.g., Self-Compassion Scale [Neff, 2003]; Cognitive Affective Mindfulness Scale Revised [Feldman, Hayes, Kumar & Greeson, 2003]). This could be done by seeing if improvements in self-concept are associated with improvements in these meta-cognitive aspects of mindfulness. The development of measures for children that are sensitive to the different components of mindfulness would further our understanding of how MBI improves specific qualities of mindfulness.

As discussed in the above sections, the impact of MBI on attention requires further exploration with tests that better capture specific variables of attention or executive functioning processes. For example, to further clarify the role MBI plays in improving neurocognitive function, tests that measure attentional control such as the ANT (Fan & Posner, 2002) or The Test of Variables of Attention (TOVA; Lark, et al., 2007) could be used. To investigate the role of MBI for improving executive function, broader test batteries (e.g., the NEPSY-II; Korkman, Kirk, & Kemp 2007), and/ or behavioural measures of executive function (e.g., The Behavioural Assessment of the Dysexecutive Syndrome in Children [BADS-C], Emslie, Wilson, Burden, Nimmo-Smith, & Wilson, 2003) could be used.

Future research involving direct comparisons between traditional CBT and MBI in children is also warranted. Although CBT and MBI are similar in that both treatment approaches focus on thoughts, feelings, physical sensations and, urges to act, the programs approach these phenomena in different ways. The traditional CBT model assumes that changing the content of thinking is necessary to improve psychological functioning whereas MBI emphasises a change in how we think (a meta-cognitive change). In MBI, instead of changing the content of problematic thoughts (as in CBT), it is thought to be sufficient to recognise these thoughts as transient mental events that can potentially be problematic but do not have to be. Non-judgmental observation of thoughts, emotions, and other internal experiences can render these experiences harmless, even though they might still be unpleasant (Thomson & Gauntlett-Gilbert, 2010). Although this distinction between MBI and traditional CBT could be argued to be subtle, many clinicians agree that MBI makes a substantial difference to clinical outcomes (Greenberg, & Harris, 2012). Future research that compares CBT to MBI that includes in-depth component analysis to establish the mediators of change relevant to these programs would substantiate these differences.

The present study provided support for the use of the adapted MAAS with primary school aged children from disadvantaged backgrounds. Further developments of tests that measure other aspects of mindfulness (e.g., meta-cognitive thinking, self-judgment) are required for a more comprehensive exploration into how MBI improves psychological functioning in children.

Clinical Implications

The study provided initial evidence that MBI is feasible to implement in a school setting with children from disadvantaged backgrounds. The school setting was ideal for running the program, as many hard to reach families were more easily accessed. The adapted MBI program has low written and spoken English language demands and an emphasis on experiential learning. Qualitative data supported that the language simplification, inclusion of parent sessions to teach concepts of mindfulness and audio CDs for children to use for home practice were strengths of the adapted program. The children who participated in the MBI program were observed to engage well with the activities and their responses on the evaluation form suggested that the program was acceptable and a positive experience for them.

The present study provided support for the clinical utility of MBI with children who have problems in the area of anxiety, depression and, mild inattention. This finding holds promise for psychological treatment research, as anxiety, depression and inattention are three of the most prevalent mental health problems that affect children (Farrell & Barrett, 2007). These issues are correlated with psychosocial impairment including immaturity, academic difficulties, low self-esteem and poor social skills (e.g., Sawyer, 2008; Ialongo et al., 1994).

To the knowledge of the author, this is the first time that MBI has been compared to another widely used psychological treatment for children. In a recent meta-analysis by Zoogman et al. (2014), 20 quality studies on MBI for children were identified, of which only 12 included an active control group of some alternative treatments such as “other school classes or health education classes” (Zoogman, et al., 2014, p.6). Mercer and Pignotti (2007) argued that an important criterion for a treatment to be considered “evidence-based” was the existence of studies that employ randomised controlled designs to make comparisons to “established treatments” (such as the RT comparison group in the present study). The finding that MBI was as effective as this widely accepted RT intervention for anxiety problems, represents an important addition to the accumulating research supporting MBI as an effective treatment option for anxiety in children (Bogels et al., 2008; Lee et al, 2008; Mendelson et al., 2010; Napolios et al., 2005; Semple et al., 2010). However, considerable further work with eventual meta-analytic reviews is still required for MBI to be considered an “evidence based” treatment for specific childhood mental health problems.

The study also provided new evidence that self-concept is enhanced by MBI in children. The MBI had significantly greater benefits for children’s self-concept than the teacher run health and wellness class and the RT program. The finding that MBI can have a positive impact on children’s self-concept is particularly important for this group of disadvantaged children. This is because, as has been found in the research, children from disadvantaged backgrounds have a lower than average self-esteem (Twenge & Campbell, 2002).

Conclusion

The present study extended the existing body of research into the benefit of MBI for improving mental health in children. The pilot study showed that the adapted MBI was feasible and acceptable to children, parents and teachers in a primary school setting that predominantly serves disadvantaged children. Important aspects of the MBI adaptation for this population included: parent involvement; simplified language; minimal reading and/or writing demands; use of audio material for home practice; and a focus on experiential rather than didactic teaching. The hierarchical cluster randomised design trial provided support that the refined MBI program was effective in reducing anxiety, self-reported depression and teacher reported inattention for the children compared to a teacher run wellbeing program. The MBI program was as effective as a commonly used relaxation program used for children with anxiety, self-reported depression and inattention, and had an added benefit for improving self-concept. The study was somewhat limited by the large amount of missing teacher and parent informant data which, in some cases, reduced the ability to establish statistical significance for medium to large effect sizes. However, MBI appears to be a promising approach for children from disadvantaged backgrounds to improve self-esteem and reduce anxiety, depression and inattention problems with moderate to large effect sizes. Investment of resources into this third wave of CBT for the treatment of mental health problems in children is justified. Further testing of mindfulness to help temper psychological symptoms in disadvantaged children is warranted to advance these initial and promising findings.

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Appendix A: Measures

- A1. Mindfulness Attention Awareness Scale (MAAS) - Original
- A2. Mindfulness Attention Awareness Scale (MAAS) – Adapted for Pilot Study
- A3. BECK Youth Inventories Second Edition for Children and Adolescents (BECK)
- A4. Program Evaluation Form
- A5. Child Behaviour Checklist for Ages 6 to 18 (CBCL-6-18)
- A6. Teacher's Report Form for Ages 6 to 18 (TRF-6-18)
- A7. Adapted Mindfulness Attention Awareness Scale (A-MAAS) – Adapted for Main Study
- A8. The Pleasure and Enjoyment Scale – Adapted
- A9. Treatment fidelity criteria

A1: Mindfulness Attention Awareness Scale (MAAS) – Original

1. I could be experiencing some emotion and not be conscious of it until sometime later.
2. I break or spill things because of carelessness, not paying attention, or thinking of something else.
3. I find it difficult to stay focused on what's happening in the present.
4. I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.
5. I tend not to notice feelings of physical tension or discomfort until they really grab my attention.
6. I forget a person's name almost as soon as I've been told it for the first time.
7. It seems I am "running on automatic" without much awareness of what I'm doing.
8. I rush through activities without being really attentive to them.
9. I get so focused on the goal I want to achieve that I lose touch with what I am doing right now to get there.
10. I do jobs or tasks automatically, without being aware of what I'm doing.
11. I find myself listening to someone with one ear, doing something else at the same time.
12. I drive places on "automatic pilot" and then wonder why I went there.
13. I find myself preoccupied with the future or the past.
14. I find myself doing things without paying attention.
15. I snack without being aware that I'm eating.

Brown and Ryan (2003) Mindfulness Attention Awareness Scale

A2: Mindfulness Attention Awareness Scale MAAS – Adapted for Pilot Study

Mindfulness Attention Awareness Scale – for Children

Please tick the appropriate box for each of the following questions:

	True for me	In-between	False for me
1. I don't know what I feel until later	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I break or spill things because of carelessness, not paying attention, or thinking of something else.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I find it difficult to stay focused on what's happening right now.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I tend not to notice feelings of physical tension or discomfort until they really grab my attention	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I forget a person's name almost as soon as I've been told it for the first time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. It seems I am doing things without really paying attention to what I am doing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I rush through activities without thinking about what I am doing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I get so focused on where I want to get to that I don't notice what I am doing right now to get there.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I do jobs or tasks automatically, without being aware of what I'm doing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I find myself listening to someone with one ear, doing something else at the same time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I walk into a room and then	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

wonder why I went there

13. I find myself preoccupied with what is going to happen or what has already happened

14. I find myself doing things without paying much attention

15. I eat without noticing that I'm eating.

Adapted from Brown and Ryan (2003) Mindfulness Attention Awareness Scale

A3: BECK Youth Inventories Second Edition for Children and Adolescents**(BECK)**

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Swinburne Library.

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A4: Program Evaluation Form

Student Feedback

Name:.....

Please tick the box that applies to you:

	Never	Sometimes	In- between	Often	Always
The group was fun					
The group helped me feel more confident					
The group helped me feel happier in my life					
I have been able to practice some mindfulness outside the group					
The activities were hard to understand					

Was there anything that you liked or disliked about the group?

What were your two favourite activities in the group?

Which activities didn't you like doing?

A5: Child Behaviour Checklist for Ages 6 to 18 (CBCL-6-18)

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A6: Teacher's Report Form for Ages 6 to 18 (TRF-6-18)

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A7: Mindfulness Attention Awareness Scale (MAAS) – Adapted for Main Study

Mindfulness Attention Awareness Scale – for Children

Please tick the appropriate box for each of the following questions:

	True for me	In-between	False for me
1. I don't know what I'm feeling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I break or spill things because I'm not paying attention	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. It is hard to stay focused on what's happening right now	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I tend to walk quickly to get where I'm going	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I tend not to notice feelings of discomfort or pain in my body until they really grab my attention	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I forget a person's name almost as soon as I've been told it for the first time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I don't pay attention to what I'm doing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I rush through activities without thinking about what I am doing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I get so focused on where I want to get to that I don't notice what I am doing right now to get there.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I do jobs or tasks without noticing what I'm doing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I do other things while listening to the teacher (e.g. scribble on paper)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- | | | | |
|--|--------------------------|--------------------------|--------------------------|
| 12. I walk into a room and then wonder why I went there | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. I find myself thinking about what we are doing next | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. I find myself doing things without paying much attention | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. I eat without noticing that I'm eating. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Adapted from Brown and Ryan (2003) Mindfulness Attention Awareness Scale for the main study

A8: The Pleasure and Enjoyment Scale – Adapted for the Main Study

From Children's Depression Scale – Moche and Lang

Name.....

Please tick the box that most applies to you:

	Very Right	Right	Don't know not sure	Wrong	Very Wrong
I feel I'm a good person					
I'm a very happy person					
Often I enjoy myself at school					
I'm always keen to do lots of things when I am at school					
I'm always looking forward to the next day					
I get fun out of the things that I do					
I'm successful at most of the things that I try					
I enjoy myself most of the time					

A9: Treatment Fidelity Strategies Criteria (Borrelli et al. 2005)

Treatment fidelity strategies
<p style="text-align: center;">Treatment design</p> <p>1. Provided information about treatment dose in the intervention condition Length of contact sessions (s) Number of contacts Content of treatment Duration of contact over time</p> <p>2. Provided information about treatment dose in the comparison condition Length of contact session (s) Number of contacts Content of treatment Duration of contact over time</p> <p>3. Mention of provider credentials</p> <p>4. Mention of a theoretical model or clinical guidelines on which the intervention is based.</p>
<p style="text-align: center;">Training providers</p> <p>5. Description of how providers were trained</p> <p>6. Standardized provider training</p> <p>7. Measured provider skill acquisition post training</p> <p>8. Described how provider skills maintained over time</p>
<p style="text-align: center;">Delivery of treatment</p> <p>5. Included method to ensure that the content of the intervention was being delivered as specified (e.g. treatment manual, checklist, computer program)</p> <p>6. Included method to ensure that the dose of the intervention was being delivered as specified (e.g. records number of contact minutes)</p> <p>7. Included mechanism to assess if the provider actually adhered to the intervention plan (applies to human providers only?) (e.g., audiotape, observation, self-report of provider, exit interview with participant)</p> <p>8. Assessed nonspecific treatment effects</p> <p>9. Used treatment manual</p>
<p style="text-align: center;">Receipt of treatment</p> <p>5. Assessed subject comprehension of the intervention during the intervention period</p> <p>6. Included a strategy to improve subject comprehension of the intervention above and beyond what is included in the intervention</p> <p>7. Assessed subjects' ability to perform the intervention skills during the intervention period</p> <p>8. Included a strategy to improve subject performance of intervention skills during the intervention period</p>
<p style="text-align: center;">Enactment of treatment skills</p> <p>16. Assessed subject performance of the intervention skills assessed in settings in which the intervention might be applied</p> <p>17. Assessed strategies to improve subject performance of the intervention skills in settings in which the intervention might be applied</p>

Appendix B: Ethics

- B1. Swinburne University Human Research Ethics Committee (HREC) – Approval (2007a)
- B2. Department of Education and Training Office of Learning and Teacher Ethics Approval (2007)
- B3. School Principal Project Approval
- B4. Teacher Explanatory Statement
- B5. Parent Plain Language Statement
- B6. Parent Participant Consent Form
- B7. Children’s Plan Language Consent Form
- B8. Swinburne University Human Research Ethics Committee (HREC) – Amendment Approval (2007b)
- B9: Permission from Zindel Segal

B1: Swinburne University Human Research Ethics Committee (HREC) – Approval (2007a)

Emma Butler

From: Keith Wilkins <kwilkins@swin.edu.au>
Sent: Tuesday, 20 March 2007 5:11 PM
To: Emma E Butler; Naomi Crafti; Kaye Goldenberg
Subject: SUHREC Project 0607/117 Ethics Clearance

To: Dr Naomi Crafti/Ms Emma Butler, FLSS

Dear Naomi and Emma

SUHREC Project 607/117 Mindfulness based intervention for primary school aged children Dr N Crafti FLSS Ms Emma Butler Approved Duration: 20/03/2007 To 27/12/2008

I refer to your response/clarification (emailed on 13 March 2007 with attached revised consent instruments and electronically scanned (undated) DET letter of authority) to the ethical review of the above project carried out by Swinburne's Human Research Ethics Committee (SUHREC). The response was put to the Chair of SUHREC for consideration and, I am pleased to advise, now approved on behalf of SUHREC.

(However, you may like to proof the revised consent instruments before printing/use. Please also note condition 1 of the DET letter and date of previous documentation referred to in the opening paragraph in case the clarification/revision now accepted on behalf of SUHREC pertains.)

The standard conditions for on-going ethics clearance are as follows.

- All human research activity undertaken under Swinburne auspices must conform to Swinburne and external regulatory standards, including the current National Statement on Ethical Conduct in Research Involving Humans and with respect to secure data use, retention and disposal.
- The named Swinburne Chief Investigator/Supervisor remains responsible for any personnel appointed to or associated with the project being made aware of ethics clearance conditions, including research and consent procedures or instruments approved. Any change in chief investigator/supervisor requires timely notification and SUHREC endorsement.
- The above project has been approved as submitted for ethical review by or on behalf of SUHREC. Amendments to approved procedures or instruments ordinarily require prior ethical appraisal/ clearance. SUHREC must be notified immediately or as soon as possible thereafter of (a) any serious or unexpected adverse effects on participants and any redress measures; (b) proposed changes in protocols; and (c) unforeseen events which might affect continued ethical acceptability of the project.
- At a minimum, an annual report on the progress of the project is required as well as at the conclusion (or abandonment) of the project.
- A duly authorised external or internal audit of the project may be undertaken at any time.

Please contact me if you have any queries about on-going ethics clearance. The SUHREC project number should be quoted in communication.

Best wishes for the project.

Yours sincerely

Keith Wilkins
Secretary, SUHREC

Keith Wilkins
Research Ethics Officer
Office of Research and Graduate Studies (Mail H68) Swinburne University of Technology P O Box 218 HAWTHORN VIC
3122
Tel: 9214 5218

**B2: Department of Education and Training Office of Learning and Teacher Ethics
Approval (2007)**



Department of Education & Training

Office of Learning and Teaching

SOS003478

Confidential

Dear Ms Butler

Thank you for your application of 29 January 2007 in which you request permission to conduct a research study in government schools titled: *Mindfulness based intervention for primary school aged children*.

I am pleased to advise that on the basis of the information you have provided your research proposal is approved in principle subject to the conditions detailed below.

1. Should your institution's ethics committee require changes or you decide to make changes, these changes must be submitted to the Department of Education for its consideration before you proceed.
2. You obtain approval for the research to be conducted in each school directly from the principal. Details of your research, copies of this letter of approval and the letter of approval from the relevant ethics committee are to be provided to the principal. The final decision as to whether or not your research can proceed in a school rests with the principal.
3. No student is to participate in this research study unless they are willing to do so and parental permission is received. Sufficient information must be provided to enable parents to make an informed decision and their consent must be obtained in writing.
4. As a matter of courtesy, you should advise the relevant Regional Director of the schools you intend to approach. An outline of your research and a copy of this letter should be provided to the Regional Director.

5. Any extensions or variations to the research proposal, additional research involving use of the data collected, or publication of the data beyond that normally associated with academic studies will require a further research approval submission.
6. At the conclusion of your study, a copy or summary of the research findings should be forwarded to the Research and Development Branch, Department of Education, Level 2, 33 St Andrews Place, GPO Box 4367, Melbourne, 3001.

I wish you well with your research study. Should you have further enquiries on this matter, please contact Chris Warne, Project Officer, Research and Development Branch, by phone on (03) 9637 2272 or by email at <warne.christine.p@edumail.vic.gov.au>.

Yours sincerely



John McCarthy
Assistant General Manager
Research and Innovation Division

11 / 2 / 2007

enc

B3: School Principal Project Approval

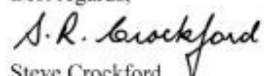
Confidential

18th December 2006

To Whom It May Concern:

I give my permission for Emma Butler to conduct the research project entitled:
'Mindfulness based intervention for primary aged children' at [REDACTED]
Primary School for the period beginning February 2007 until December 2008.

Best regards,



Steve Crockford
Principal

B4: Teacher Explanatory Statement

Teacher Explanatory Statement

Title: Mindfulness based intervention for primary aged children

Mindfulness is a practice in the self-management of attention that improves a person's ability to perceive his/her environment in the present moment. A mindfulness task might be to eat something whilst focusing completely on every taste and texture that you feel in the present moment. We know from research with adults that these interventions are effective in reducing mental health problems. To date, there is a relative lack of research on the effectiveness of mindfulness in children. A few initial studies have indicated that mindfulness training may reduce symptoms of anxiety and anger and improve concentration and learning outcomes for children. However, these studies often do not differentiate between mindfulness training compared to general relaxation alone. We want to find out if mindfulness training has additional benefit to general relaxation alone. To help answer this question, we need children with emotional difficulties and or/ behavioural and/or concentration problems to participate in these programs.

The Program

The main goal of the project is to work out whether 'Mindful Child' and 'General Relaxation' programs assist children to better manage strong emotions, improve their ability to concentrate. We want to see if children make better gains in 'Mindful Child' compared to 'General Relaxation'. This is why half the children will participate in 'Mindful Child' and the other half will participate in 'Learn to Relax'. To see if there are any changes, we conduct the assessment of the child before and after their participation in the programs. The program will be run at [REDACTED] Primary School between 2007 and 2008.

The project will involve approximately 100 children who are aged between 9 and 12 years. In 'Mindful Child', children will learn mindfulness practices that involve perceiving different sensory modalities in the present moment (e.g., eating mindfully, walking mindfully, breathing mindfully, looking mindfully). Children will also learn to think about their world non-judgmentally, with a sense of openness and patience. In the 'General Relaxation' Program, children will participate in relaxation exercises involving progressive relaxation (i.e., tensing and relaxing muscles) creative visualisation (e.g., visualising a relaxing waterfall) and movement relaxation (jumping, stretching and shaking body).

Each child will participate in either one of these programs. About 8-10 children will participate in each group at a time. Groups will run for 8 weeks for 60-minute sessions at a time convenient to the classroom teacher in non-essential curriculum work times. At the beginning and end of the program, children will complete very brief cognitive testing, questionnaires about their emotions and behaviour and a short computerised attention / concentration task. The computer task will be also administered on week 4 of the program. Total testing time will take about 60 minutes.

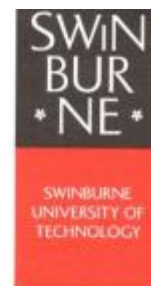
Who is running the project?

The research is being conducted by Ms Emma Butler (School Psychologist, [REDACTED] Primary School) as a part of her Doctorate in Clinical Psychology, under the supervision of Dr's Naomi Crafti and Katie Wood from Swinburne University. Emma Butler will be running the therapeutic groups and also meeting with parents at the beginning and end of the program.



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What is required from the teachers?

Teachers will confidentially select children from their grade who have some difficulties with managing strong emotions (e.g. anger, anxiety, sadness) or trouble with concentration. Teachers are asked to nominate children in a confidential manner (not in front of other children). If a child is selected in the program and their parent gives consent for them to participate, we will ask you to complete a behavioural questionnaire about the child that takes less than 10 minutes. When the program is complete, we will ask you again to complete a behavioural checklist about the child to see if they have made any progress in the group.

Administration Procedure

Participation in this project is voluntary, and the student is free to withdraw at any time. All information that children, teachers and parents/guardians provide will remain confidential. This means that responses will be private and the only people who will see them are the researchers and the child's parent/guardians and teacher (for the purpose of program planning). The parents will have the option to consent for the results to be included in school files. While the results of the study may be published in the future and will form part of a Doctorate in Clinical Psychology research project, the identifying information of all children will remain strictly confidential. The information from the attention task will also be used to check the effectiveness of this test to children by the developers of this test confidentially. The security of the research information is assured during and after completion of the study. Parents/guardians and teachers (with parent consent) will be provided with feedback on their child's progress in the program and recommendations for management will be offered if relevant. A summary report of the main findings from the project will be also available.

Emma Butler (School Psychologist at [redacted] Primary School) and student researcher will run the two programs under the supervision of Dr Naomi Crafti and Dr Katie Wood. If you have any questions about the project, please contact Dr Naomi Crafti on 9214 5355 at the Faculty of Life and Social Sciences, Swinburne University, Hawthorn.

We plan to commence the project during the first term of 2007. If you feel that there are children in your class who may benefit from participating in this project, please register your interest at this stage with Emma Butler. Your involvement in this exciting project is greatly appreciated.

Thank-you for your time and cooperation.

A handwritten signature in black ink, appearing to read 'Emma Butler'.

Yours Sincerely,
Emma Butler

[redacted] Primary School / Swinburne University

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B5: Parent Plain Language Statement



Plain Language Statement

Project Title: *Mindfulness based intervention in primary school aged children*

Principal Investigators:

Dr Naomi Crafti
Psychologist /Lecturer
Faculty of Life and Social
Sciences
Swinburne University
Phone 9214 5355

Ms Emma Butler
Psychologist
Participating in Doctorate of Clinical
Psychology program at Swinburne
University
School Psychologist at St Albans
Meadows Primary School
Phone 9364 6144

Dr Katie Wood
Clinical Psychologist /
Lecturer
Faculty of Life and Social
Sciences
Swinburne University
Tel No 9214 4872

What is the Project About?

Mindfulness is a practice in the self-management of attention that improves a person's ability to perceive his/her environment in the present moment. A mindfulness task might be to eat something whilst focusing completely on every taste and texture that you feel in the present moment.

Research has shown that mindfulness interventions can improve the wellbeing of adults, by reducing stress, anxiety and depression and improving concentration and levels of general happiness, health and wellbeing. We want to see if these approaches have similar benefits for children.

We are running two group programs for children at ██████████ Primary School. In 'Mindful Child', children will learn mindfulness practices that involve sensing the world in the present moment (e.g. eating mindfully, walking mindfully, breathing mindfully, looking mindfully). In addition, children will learn to think about their world non-judgmentally, with a sense of openness and patience. In the 'General Relaxation Program', children will participate in relaxation exercises involving progressive relaxation (i.e. tensing and relaxing muscles) creative visualisation (e.g. visualising a relaxing waterfall) and movement relaxation (e.g. jumping, stretching and shaking body).

We are inviting children to participate who have concentration problems or problems with anxiety, confidence, sadness or anger. The main aim of this research is to see if the programs have a beneficial effect on a child's emotional, behavioural or concentration problems.

What is involved in my child's and my participation?

1. Teachers will confidentially suggest children who may benefit from the program. Parents will then be asked by the teacher to give verbal consent for their child's involvement in the program.
2. Children will be randomly allocated to either the 'Mindful Child' program or the 'General Relaxation Group'. Children who participate in the 'Relaxation Group' will be offered a chance to participate in the 'Mindful Child' program if they want to.
3. If the parents give verbal consent, both parents /guardians (if available) will be asked to participate in a 50-minute session at the school or their home with the researcher where both parents will sign the 'Consent Form'. In this session, parents will be given

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- information about the 8-week program. They will also complete a questionnaire about their child's behaviours in this interview.
4. Children will be asked to completed homework tasks which are not monitored by the parents
 5. Parents will be asked to attend a second 50 minute session at the end of the program. In this second session, parents will complete a second questionnaire about their child's behaviour at the end of the program to see if any changes have occurred at home.
 6. After parent consent is gained, children will then sign a consent form to participate in the study.
 7. Teachers will be asked to fill out a questionnaire about their child's behaviour at school.
 8. Assessment of the children's problem solving ability and emotional state will be conducted at the beginning and end of the program. A computer test of concentration will be completed by children at the beginning, middle and end of the program via a short computer task. The total testing time for each child will be about 60 minutes throughout the program. Parents will be given a short written summary of their child's results on these assessment tasks. Parents will also have the opportunity to have their child's results included in their school psychology file to help with educational programming. Parents do not have to have their child's results included in the school psychology file.
 9. Children will attend 8 weekly 60-minute sessions with the researchers to either the 'Mindful Child' program or the 'General Relaxation' program, held at non essential curriculum time at St [REDACTED]

You and your child are free to withdraw at any time. If you decide to withdraw, your information will not be used as part of the research project. Both parents/guardians (if available) need to consent to the study, as well as your child. If you do become distressed with any aspect of the research, you can contact the Swinburne Psychology Clinic 9214 8653 or Isis Primary Care on 92961200 for support.

Ethical Guidelines

This project will be carried out according to the National Statement on Ethical Conduct in Research Involving Humans (June 1999) produced by the National Health and Medical Research Council of Australia. The statement has been developed to protect the interests of people who agree to participate in human research studies. The Human Research Ethics Committees at Department of Education and Training and Swinburne University have approved this research project.

During the research project, the researchers may become aware of new information about the risks and benefits of the project. If this occurs, you will be informed. The new information may mean that you can no longer participate in this research. If this happens, the person(s) supervising the research will stop your participation.

You will be provided with a written summary of the main findings from the research project. You will also receive verbal feedback on your child's performance on emotional, behavioural and attention assessments before and after they complete the program as well as their progress in the program. You can choose to give permission to have these assessment results included in your child's school psychology file that may assist with their educational planning.

Quality Learning,
Innovative Research



Psychology Clinic

33 Wakefield Street Hawthorn
Victoria 3122 Australia

PO Box 218 Hawthorn
Victoria 3122 Australia

Telephone +61 3 9214 8653

Facsimile +61 3 9819 6857

Email psychclinic@swin.edu.au

www.swinburne.edu.au/jc

ABN 13 628 588 606
CRICOS Provider 001110



All information from this project that can identify you or your child will remain confidential. Information will not be disclosed to anyone without your permission. Questionnaires/forms will be number coded and kept secure. Findings will be reported by the student researcher in the form of a written report and may be presented at conferences and/or published in scientific journals. Children will not be identified by name in any such report. The information from the attention task will also be used to check the effectiveness of this test for children by the developers of this test. No names will be released for this purpose.

If you have any questions or problems concerning this project, please contact the Principal Investigator, Dr Naomi Crafti on 9214 4872.

If you are unhappy about how you were treated in the study, please direct formal complaints to:

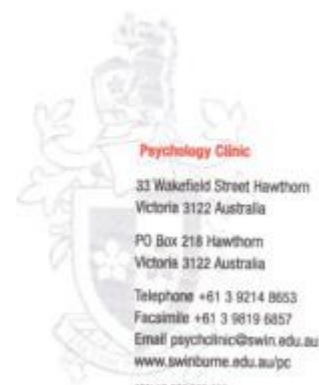
The Research Ethics Officer
Office of Research & Graduate Studies (H68)
Swinburne University of Technology
HAWTHORN, VICTORIA 3122
Tel: 9214 5218

Your Consent:

You are invited to take part in this research project, conducted by Ms Emma Butler (School Psychologist, ██████████ Primary School) as a part of her Doctorate in Clinical Psychology, under the supervision of Dr's Naomi Crafti and Katie Wood from Swinburne University.

Please read this Plain Language Statement carefully and feel free to ask any questions. Once you understand what the project is about, and you agree to take part, we ask that you sign the Consent Form. We will give you a copy of the plain language statement and consent form to keep.

Quality Learning,
Innovative Research



AIM 13 628 586 699
CRICOS Provider 00111D

B6: Parent Participant Consent Form

Participant Consent Form (Parent/ Guardian)

Project Title: Mindfulness based intervention in primary school aged children

_____ (print name and address)

have read (or have had read to me) and understood the information above. Any questions I have asked have been answered to my satisfaction.

I freely agree to participate in this project according to the conditions in the 'Plain Language Statement'. I realise that my child and I may withdraw at any time.

In signing this consent form, I agree to the following (**circle whichever applies**)

I do / do not give permission for my child to participate in this project titled: 'Mindfulness based intervention in Primary School Children

I do / do not give permission for the researchers to speak with my child's teacher about my child's behaviour, emotional functioning and concentration

I do / do not give permission for the researchers in this project to access any previous test results that relate specifically to my child's intellectual ability and academic skills

I do / do not agree to my child's teacher completing a questionnaire about my child's behaviour and emotional functioning

I do / do not agree that some of the research data collected for this project will be presented in the form of a student project and may be published in scientific papers, presented at national and / or international conferences, or provided to other researchers on the condition that anonymity is preserved and that we cannot be identified.

I do / do not agree to have my child's assessment results included in their school psychology file.

I do / do not agree to have the information from the attention task to be also used to check the effectiveness of this test for children by the developers of this test. No names will be released for this purpose.

I have a copy of the Plain Language Statement and the Consent Form to keep.

NAME OF PARTICIPANT

.....

ADDRESS.....
(to send research report and a summary report of child's performance)

SIGNATURE..... DATE.....

NAME OF PRINCIPAL INVESTIGATORS.....

SIGNATURES..... DATE.....



Quality Learning,
Innovative Research

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ABN 13 629 166 099
CRICOS Provider 00111D

B7: Children's Plan Language Consent Form

INFORMATION AND CONSENT FORM (CHILDREN)



What is this project about?

We are running two new group programs that teach kids to relax in a way that is fun and interesting.

Who is involved in the project?

Emma Butler (School Psychologist) will run the groups with the help of her supervisors (Dr Naomi Craft and Katie Wood) from Swinburne University.

What do I have to do?

Both you and your parent have to agree before you can take part in this project.

1. You will be asked to answer questions and do tasks with Emma Butler that will take about 40 minutes
2. You may also complete some short computer based tasks in the middle of the program
3. Your parents/guardians will also answer some questions.
4. Your class teacher will be also asked to complete some questions.
5. You will attend a group with about 8 to 10 other children for 60 minutes each week with Emma Butler. During these sessions, you will do fun activities that involve:

- ✓ Physical movement (e.g. stretching)
- ✓ Games
- ✓ Talking (e.g. group discussions)
- ✓ Thinking and sharing ideas
- ✓ Eating in a particular way

What happens to my information?

We will keep information about you private at the school. The information will be entered securely on a computer file, which will be only looked at by Emma Butler and other researchers on the project. The findings will be presented in the form of a student project. Sometimes team members and students, now or in the future, may want to use some information about you for their projects, so other children can benefit from what we learn. This information will not have your name on it or anything to show it is about you. These projects might be discussed at scientific meetings and/or included in scientific papers. You would not be identified if the information were used for these purposes.

If you do not like or understand what is happening, please tell us and your parents. If you and your parents are still not satisfied, you can talk or write to:

The Research Ethics Officer
Office of Research & Graduate Studies
Swinburne University of Technology
HAWTHORN VIC 3122

or Steve Crockford,
Principal

Tel: 9214 5218.

Please sign and write the date here if you understand and agree to what is written above:

Signature: _____ Date: _____

Name of Participant: _____

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CRICOS Provider 001110

**B8.Swinburne University Human Research Ethics Committee (HREC) –
Amendment Approval (2007b)**

Emma Butler

From: Kaye Goldenberg <kgoldenberg@swin.edu.au>
Sent: Friday, 13 July 2012 4:56 PM
To: elbutler@optusnet.com.au
Cc: Catherine Wood; lssresearch@swin.edu.au; Keith Wilkins
Subject: SUHREC Project 0607/117 Ethics Clearance for Modified Project
Attachments: SUHREC Project 0607/117 Ethics Clearance for Modified Project (3.51 KB)

Dear Emma,

Re: SUHREC Project 607/117 Mindfulness based intervention for primary school aged children
 Dr N Crafti FLSS/ Ms Emma Butler
 Approved Duration: 20/03/2007 To 27/12/2008 (Project Modified July 2007)

Annual/Final Report for project required

Please find attached the Ethics Clearance e-mail for the above project as requested. In line with standard and any special clearance conditions an annual/final report is due for the above project. Please therefore complete and return the annual/final report which can be downloaded from:
http://www.research.swinburne.edu.au/ethics/documents/SUHREC_Annual_Report_form.doc. In completing the form please ensure that the following sections of the form are completed:

- Item 4, Modifications to Approved Project Protocols - provide information on change of supervisor details [that is, from Dr Naomi Crafti to Dr Catherine Wood]
- Item 7, Security of Data - with regard to the research undertaken at [REDACTED] Given the intervention concerned, identifiable data (= "health information") may need to be retained at Swinburne till the individuals who participated as minors turn 25. You or your supervisor can contact Keith Wilkins on this point.
- In addition, please indicate how the Victorian Department of Education's Education and Research Division requirements have been met.

Access to original ethics application

You are also free to visit our office to obtain a copy of your application. As explained in our telephone conversation earlier today, your application will not include any committee correspondence, or other related material, which remains the property of Swinburne. Please call before attending to ensure a member of staff will be present. Our address is Swinburne Research, Level 1, Swinburne Place South, 24 Wakefield Street, Hawthorn Campus. Admittance to the Swinburne Research office is gained by using the telephone in the foyer. Numbers to call are: 8468, 5218 or 5935 to reach our Section.

Regards

Kaye Goldenberg
 Secretary, SUHREC Subcommittees

Kaye Goldenberg
 Administrative Officer (Research Ethics)
 Swinburne Research (H68)
 (Mon, Tues, alt Thurs, Fri.)
 Swinburne University of Technology
 Level 1, SP8, 24 Wakefield Street
 Hawthorn, VIC 3122
 Tel: +61 3 9214 8468
 Fax: +61 3 9214 5267

Emma Butler

From: Keith Wilkins <kwilkins@swin.edu.au>
Sent: Friday, 13 July 2007 12:08 PM
To: Emma E Butler, Naomi Crafti, Kaye Goldenberg; emmabutler@tpg.com.au
Subject: SUHREC Project 0607/117 Ethics Clearance for Modified Project

To: Dr Naomi Crafti/Ms Emma Butler, FLSS

Dear Naomi and Emma

SUHREC Project 607/117 Mindfulness based intervention for primary school aged children Dr N Crafti FLSS Ms Emma Butler Approved Duration: 20/03/2007 To 27/12/2008 (Project Modified July 2007)

I refer to your request for ethics clearance for modifications to the above project as previously approved. The request was detailed in several recent emails, the most recent of which was dated 12 July 2007 and included communication/approval vis-a-vis the Victorian Department of Education's Education and Research Division.

The request was to put to the Chair of Swinburne's Human Research Ethics Committee (SUHREC) for consideration in line with existing ethics clearance conditions.

I am pleased to advise that approval on behalf of SUHREC has been given for the project to continue as modified/submitted in line with ethics clearance conditions here reprinted.

- All human research activity undertaken under Swinburne auspices must conform to Swinburne and external regulatory standards, including the current National Statement on Ethical Conduct in Research Involving Humans and with respect to secure data use, retention and disposal.
- The named Swinburne Chief Investigator/Supervisor remains responsible for any personnel appointed to or associated with the project being made aware of ethics clearance conditions, including research and consent procedures or instruments approved. Any change in chief investigator/supervisor requires timely notification and SUHREC endorsement.
- The above project has been approved as submitted for ethical review by or on behalf of SUHREC. Amendments to approved procedures or instruments ordinarily require prior ethical appraisal/ clearance. SUHREC must be notified immediately or as soon as possible thereafter of (a) any serious or unexpected adverse effects on participants and any redress measures; (b) proposed changes in protocols; and (c) unforeseen events which might affect continued ethical acceptability of the project.
- At a minimum, an annual report on the progress of the project is required as well as at the conclusion (or abandonment) of the project.
- A duly authorised external or internal audit of the project may be undertaken at any time.

Please contact me if you have any queries about on-going ethics clearance. The SUHREC project number should be quoted in communication.

Best wishes for the modified project.

Yours sincerely

Keith Wilkins
Secretary, SUHREC

Keith Wilkins
Research Ethics Officer

Office of Research and Graduate Studies (Mail H68) Swinburne University of Technology P O Box 218 HAWTHORN VIC
3122

Tel: 9214 5218

B9: Permission from Zindel Segal

Page 1 of 2

/
Emma Butler

From: Zindel Segal [Zindel_Segal@camh.net]
Sent: Tuesday, 23 January 2007 5:57 AM
To: Emma Butler
Subject: RE: Mindfulness approaches in children and use of resources from Mindfulness-Based Cognitive Therapy for Depression

Hi Emma,

Thank you for the courtesy of checking with me. I have no concerns. Good luck with carrying out this important work.

Regards,

Zindel

Zindel V. Segal, Ph.D., C.Psych.
 Morgan Firestone Chair in Psychotherapy
 Professor of Psychiatry and Psychology
 University of Toronto

Centre for Addiction and Mental Health - Clarke
 250 College Street
 Toronto, Ontario
 M5T 1R8
 CANADA

Tel: (416) 979-6856
 Fax: (416) 979-6821
 Email: zindel_segal@camh.net

-----Original Message-----

From: Emma Butler [mailto:emmabutler@tpg.com.au]
Sent: January 22, 2007 03:59 AM
To: Zindel Segal
Subject: Mindfulness approaches in children and use of resources from Mindfulness-Based Cognitive Therapy for Depression

To Dr Zindel Segal:

I am a registered psychologist who works with children in Melbourne, Australia. We are currently conducting a study to investigate the effectiveness of mindfulness approaches for primary school aged children as a part of my doctorate research degree in clinical psychology at Swinburne University. In this study, we are developing a program that adapts mindfulness approaches for children from the 4th to 6th grade. The study aims to compare general relaxation strategies to a mindfulness based treatment program in children to improve low concentration, anxious, depressive and aggressive symptoms. The study will involve two phases. The first phase will pilot the mindfulness program in a group

23/01/2007

of eight, 4th, 5th and 6th grade students. The second phase of the study will run the treatment and control groups across about 100 students.

As a part of this study, we are adapting some of the mindfulness based cognitive therapy techniques described in the book authored by yourself, Mark Williams and John Teasdale, titled; 'Mindfulness Based Cognitive Therapy for Depression: A New approach to Preventing Relapse'. Any techniques used in our program that have been sourced from this book will be referenced in any form of publication of the study. Please let me know if you have any concerns with this.

Yours sincerely,

Emma Butler

23/01/2007

Appendix C: Overview of the Mindfulness Pilot Program

Session 1	Getting to know each other; group rules and expectations, Raisin Exercise (Kabat-Zinn, 1990); Definition of Mindfulness (Kabat-Zinn, 1990); Homework: Written record form for mindful eating and other mindful practice)
Session 2	Review and discussion of previous week's home exercises; Thoughts and Feelings Exercise (Adaptation from Segal et al., 2002); Sitting Breath Meditation (Kabat-Zinn, 1990); Homework: Pleasant events calendar and record daily mindful breathing practice (Adaptation from Segal et al., 2002)
Session 3	Mindfulness in Hatha Yoga (Kabat-Zinn, 1990); Review and discussion of previous week's home exercises; Thoughts and Feelings Exercise Part two (Adaptation from Segal et al 2002); Homework: Unpleasant events calendar Adaptation from Segal et al 2002) and record their daily practice of breathing and/or yoga activities.
Session 4	Review and discussion of previous week's home exercises; Mindful Listening Exercise (Semple, Lee & Miller, 2006); Being in Your Body – The Body Scan Meditation Technique (Kabat-Zinn, 1990); Body Scan script (Kabat – Zinn, 1990); Homework: record daily Body Scan Practice
Session 5	Review and discussion of previous week's home exercises; Breathing spaces (from Segal et al 2002); Walking Meditation (Kabat-Zinn, 1990); Homework: record daily Mindful walking and practice Breathing space when faced with something challenging
Session 6	Review and discussion of previous week's home exercises; Non Judging Exercises (Semple, Lee and Miller 2006); Hatha Yoga; Homework record one mindful practice and complete non-judging exercise.
Session 7	Review and discussion of previous week's home exercises; Hatha Yoga; Optical illusions exercise (Semple and Lee and Miller 2006); More about thoughts (clock meditation); Three minute seated breath meditation; Homework: record one mindful daily practice
Session 8	Review and discussion of previous week's home exercises; Overview of themes covered and opportunity for children to reflect in a group discussion; Feedback questionnaires completed; Party; Three minute seated breath meditation to finish group

Appendix D: Case Studies for Pilot Study:

Participant A: was an eleven year old Grade six girl when she was referred to the program. Participant A was from a Vietnamese speaking background. Both her parents were born in Vietnam and Participant A was born in Australia. Her mother raised the children and her father worked in fishing and casting. Participant A was referred to the program on request from her teacher (JD) due to concerns that she was shy and lacked confidence speaking in class and with her peers. Although the teacher was concerned about Participant A's anxious behaviour at school, these concerns were not reflected in her responses on the Teacher Report Form indicated that she had normal levels of internalizing problem behaviours. Participant A's father was concerned about Participant A's emotional readiness for high school and withdrawn behaviour. On the Achenbach Child Behaviour Checklist, Participant A's father's responses indicated that her internalizing score was in the borderline range. Participant A completed the Beck Youth Scales and her responses indicated that she had a lower than average self-esteem. Her responses also indicated that her levels of anxiety and depression were in the mildly elevated range. On assessment, Participant A stated that she would like to be less shy and smarter from attending the group.

Participant A attended all 8 sessions. She was highly enthusiastic about participating in the program as was evidenced by her constant checking with the group facilitator about the starting time and requests for the group to continue after the last session. Initially, it was observed that Participant A took a long time to make decisions (e.g. folder colour) and despite being able to answer direct questions from the facilitator, Participant A was unable to speak when it came to formal sharing exercises in front of the group. In the initial sessions, Participant A's affect was generally depressed and anxious. She would often have worried and upset facial expressions. As the sessions progressed, Participant A began volunteering to share during group time (despite experiencing high levels of anxiety in doing this). Participant A was able to share her feelings of anxiety with the group and was praised and encouraged for doing so by the facilitators. By week four, Participant A was taking every opportunity to raise her hand to share with the group. Participant A's affect by week four was brighter and she appeared to be less anxious during sharing. By week five, Participant A was the only child that volunteered to read and act in front of the group. Participant A showed ability

to observe her own feelings and thoughts during the activities and comment on them in group discussions. During group meditation exercises, Participant A appeared very focused and commented that she was practicing the exercises at home. By week six, Participant A appeared comfortable and confident. She shared with the group towards the end that she was proud of herself and felt that her anxiety about speaking in groups was much less.

On the evaluation questionnaire, Participant A endorsed that the group ‘often’ helped her to feel more confident and happier in life. She reported that she ‘always’ was able to practice the mindfulness meditation outside the group. Post treatment assessment was conducted and although the teacher had reported Participant A on the Achenbach TRF to be in the normal range in pre-testing, she no longer endorsed that Participant A was exhibiting shyness or nervousness in class. Participant A’s father’s responses on the Achenbach CBCL indicated that her internalizing problem behaviours had reduced to the normal range. Her father commented in the post interview that Participant A was speaking up for herself more which was a relief to him, as he felt that she would need to do this more at secondary school. On the Beck Youth Inventory Second Edition, following Participant A’s participation in the program Participant A’s responses indicated that her level of self-esteem had increased a normal level relative to other female children her age. Likewise, Participant A’s levels of anxiety and depressed symptoms had reduced to normal levels from mildly elevated levels following her participation in the program. Interestingly, Participant A’s raw score on the adapted Mindfulness Attention Scale had increased from 34 at pre-treatment to 40 post treatment, indicating that she may have cultivated attributes of mindfulness from participating in the group.

Participant B: was an 11 year old grade six girl who was referred by her teachers due to parental concerns about her high levels of anxiety and diagnosed medical condition (Alopecia) that her doctor had stated was stress related. Participant B was also overweight at the beginning of the program. Participant B had also been reporting many vague illnesses (e.g. headaches, stomach aches) that did not appear to have known medical origins which had resulted in missed school and other missed events. Participant B was experiencing panic attacks when going to the dentist and refusing to participate in out of school activities (e.g. refusing to attend church practice for her confirmation sacrament due to high anxiety). Her parents were worried about her emotional skills for coping with secondary school the following year. Her parents were

also concerned that Participant B was exhibiting intense emotional outbursts, temper tantrums and oppositional behaviour. Participant B was born in Australia and English was the main language spoken in her home. Her parents were both born in Malta.

At pre-treatment, Participant B's responses on the Beck Youth Inventory Second Edition indicated she had mildly elevated levels of anxious and depressed symptoms. Her self-esteem was very much below average for her age. Parent responses on the Achenbach Child Behaviour Checklist (CBCL) indicated that Participant B's overall problem (including internalizing and externalizing) were all in the clinical range. Participant B's teacher responses on the Achenbach Teacher Report Form indicated that Participant B's behaviours were normal at school.

Participant B attended 6 out of 8 sessions of the MPP program. Her reasons for being absent for 2 sessions were due to non-specific illnesses. During the initial sessions of the program, Participant B presented as one of the more confident members of the group and appeared to have a cheerful disposition. Her enthusiasm for activities and ease at which she offered ideas was surprising to the group facilitators given her pre-treatment assessment. Interestingly, from early on, Participant B shared that she experienced a great deal of discomfort during meditation (e.g. reported feeling teary and very sad during the breath meditation in session one). Participant B was observed to be extremely distracted during the meditation, but was reluctant to admit to this as she was highly motivated gain the facilitator's approval. At times Participant B had difficulty grasping the more cognitive component of the program (e.g. distinction between thoughts and feelings). During the later sessions in the program, Participant B became more focused during the meditation and reported that she was doing the home practice with her mother. Participant B appeared to gain tremendously from the meditation, as she became more confident in her ability to focus during the meditation, she appeared to connect with some strong emotions.

At the end of the program, Participant B endorsed that she 'always' felt that the group helped her to feel more confident and happier in life and was able to practice the exercises consistently outside the group. She did however comment that the activities were sometimes hard for her to understand which was noticed by the group facilitators during the cognitive component of the program. At post testing, Participant B's scores on the BECK were all in the normal range which represented a significant improvement in her self-esteem and symptom reduction for anxiety and depression. Her mother's responses on the Achenbach CBCL indicated a reduced overall problem score from

above the 98th percentile to the 93rd percentile. Participant B's level of externalizing problem behaviours had reduced from the clinical level to the borderline clinical level. Participant B's level of Withdrawn/Depressed problems, Somatic Complaints, Thought Problems and Rule Breaking behaviour had reduced to levels that were considered to be normal relative to the normative sample. Her teacher who had not had concerns about Participant B noted no changes to her classroom behaviour on the Achenbach TRF. Anecdotally, the mother reported that Participant B's behaviour at home had improved dramatically and that she had shown a strong commitment to the home practice meditation that they had been practicing together. Participant B was no longer exhibiting temper tantrums and oppositional behaviour with her parents. Her mother also reported that the alopecia had resolved and Participant B was now in a healthy weight range. Participant B was able to complete her church sacrament practice and go to a dental check-up. Participant B's raw score on the adapted Mindfulness Attention Scale had increased from 32 at pre-treatment to 38 at post treatment, indicating that she may have cultivated some attributes of mindfulness from participating in the MPP.

Participant C: was an eleven year old grade six girl who was referred by her teacher due to concerns about her high levels of shyness and timidity in class. The teacher reported that Participant C didn't have the confidence to speak aloud in front of others. Participant C's parents were both born in Vietnam and Vietnamese was the main language spoken in her home. Participant C's parents had both required interpreters to communicate in written and spoken English. With the assistance of interpreters, the mother completed required assessments and pre and post treatment parent sessions. Participant C's mother had no major concerns about Participant C, but was supportive of her involvement in the program. She agreed that her daughter was shy and timid and lacked confidence.

On the Achenbach CBCL, Participant C's mother's responses indicated that Participant C showed a normal level of problem behaviours for a girl her age. Participant C did show an elevated level of Anxious/Depressed behaviours (76th percentile) which was commensurate with the reported behaviour observed by the teacher. On the Achenbach TRF, the teacher's responses similarly reported that Participant C's problem behaviours were in the normal range, although her Withdrawn/Depressed behaviours were elevated (89th percentile). On the Beck Youth Inventory Second Edition, Participant C's symptoms of anxiety, depression, anger and behaviour

problems were in the normal range. Her self-esteem was normal for her age. Participant C did endorse many items that showed some anxious symptomology.

Participant C attended all 8 sessions out of 8. She expressed enthusiasm and excitement about participating in the program. Participant C presented as a very quiet girl who appeared to go unnoticed in the group initially. Her participation during the meditations appeared to have a quality of commitment and focus.. Participant C was at times restless during the meditation and discussed this being a difficult experience for her. She reported limited opportunity to practice at home. Participant C appeared engaged in all aspects of the mindfulness program. She demonstrated a good understanding of the cognitive component of the program, discussing many thoughts that related to her sad feelings. Participant C showed limited eye contact with the facilitators initially and was avoiding of their attention. As the session progressed, Participant C became more of a visible member of the group. She began to make eye contact with the facilitators and gradually became less hesitant to share in front of the group. Towards the end of the program, Participant C was observed to be significantly more relaxed and sharing spontaneously during group time. Her ability to distinguish between her own thoughts and feelings appeared to be her strength.

At the end of the program, Participant C endorsed that she ‘always’ had fun in the group. She endorsed that she ‘often’ was helped to feel more confident and feel happier in her life and was able to practice at home. She reported that she never found the activities hard to understand. Post treatment assessment indicated significantly less anxious symptomology on the Beck Youth Inventory Second Edition. Similarly, Participant C’s teacher reported less Withdrawn / Depressed symptoms of the Achenbach TRF (62nd percentile) and parent reported less Anxious/Depressed symptoms on the CBCL (reduced to <50th). Participant C’s teacher reported that she was more relaxed in class and sharing in front of the group more spontaneously. Participant C’s raw score on the adapted Mindfulness Attention Scale remained at the raw score of 31 throughout the program indicating similar level of mindfulness attributes pre to post treatment.

Participant D: was an eleven year old grade six girl. Participant D’s parents were both born in Vietnam and required interpreter assistance for spoken and written English. Participant D was referred to the program by her teacher who thought that she may benefit from intervention for her shyness in class. At pre-test assessment, the teacher’s responses on the Achenbach TRF suggested normal levels of psychological

problems, but did indicate some elevation in Participant D's level of Anxious/Depressed and Withdrawn/Depressed symptoms (both at the 76th percentile). The parent's responses on the Achenbach TRF indicated on the DSM-orientated scales that Participant D was showing a clinical range of Affective problems and Somatic Problems. Participant D reported normal but elevated levels of anxiety and depression and anger on the BECK and a below average Self-Concept.

Participant D attended 7 sessions out of 8. Participant D presented as an enthusiastic group member during the initial sessions who was often fidgety and quite distractible during the meditation exercises. She reported feeling 'dizzy' when she closed her eyes and was often distracted by her friends. She was able to confidently share with the group about uncomfortable experiences during the meditation and would often attempt to distract others rather than internalize these experiences. Through Participant D's sharing with the group, it appeared that she gained from the cognitive component of the program. For example, she was able to reflect on many personal experiences using the Pleasant/Unpleasant events CBT activity of the program, often linking her thoughts about being bored to uncomfortable feelings in her body. Despite Participant D's best efforts, she continued to have difficulty with mindfulness meditation throughout the group. The facilitators frequently reassured Participant D and validated her feelings about the meditation but Participant D felt unable to cope with the feelings of boredom, tiredness whilst meditating without distracting other group members, especially if the meditation duration exceeded five minutes.

Post treatment assessment indicated a reduction in anxious, depressed and angry symptoms, and improvement to normal level of self-esteem on the BECK. Similarly, Participant D's teacher reported that Participant D's levels of anxious/depressed or shy behaviour was no longer observed. Participant D's parents continued to report clinical levels of somatic problems on the Achenbach but Participant D's Affective problems were now in the normal range, reflecting a reduction in symptoms of anxiety and depressed mood. Participant D's elevated levels of attention problems (reported by her parents) were also reduced from the 81st percentile to the 51st percentile (on the Achenbach CBCL). Despite behavioural observations suggesting the challenging nature of the mindfulness meditation for Participant D, given her problems with attention, on the evaluation questionnaire, she reported that she 'often' had fun in the group and wrote that "I liked when we do the mindfulness breathing", and stated that her two favourite activities were the stretches and breathing. Over the program, Participant D's

raw score on the adapted Mindfulness Attention Scale increased from 23 at pre-test to 33 at post-test. Although Participant D appeared to struggle with the mindfulness meditation, she may have acquired increased qualities of mindfulness at the end of the program.

Participant E: was an eleven year old grade six girl who was referred by her teacher due to her shy and reserved behaviour during class. Participant E's parents had separated in the previous year. Pre-treatment testing indicated that Participant E's anxiety was not at a clinical level. Her mother's responses on the Achenbach CBCL indicated that Participant E had an elevated level of Anxiety problems at home (87th percentile). The teacher's responses on the Achenbach TRF indicated that Participant E had an elevated level of Anxious / Depressed symptoms (84th percentile) at school. On the Beck Youth Inventory, Participant E's responses indicated that she had symptoms of anxiety, depression and anger but these symptoms were in the normal range. Participant E's responses indicated that she had a very low self-esteem.

Participant E attended 7 out of 8 sessions. She appeared to grasp presented concepts quite easily and participated with enthusiasm and maturity during the mindfulness meditations. Participant E shared intelligently about her experiences during the meditations with the group. Unfortunately, Participant E appeared to lose enthusiasm as the sessions progressed and appeared to engage with the group on only a very superficial level.

Participant E reported on the evaluation questionnaire that she 'often' had fun in the group, but reported the group 'sometimes' made her feel happier in her life and 'in-between' helped her feel more confident. She endorsed that she 'sometimes' found the activities hard to understand. She wrote that the "group was fun and it got her mind off things". Post treatment assessment indicated that Participant E's self-esteem and psychological symptoms only changed very slightly which was consistent with her feedback on the evaluation form and the observation that in the group, she was a polite and enthusiastic valued member, but maintained a superficial level of participation.

Post treatment assessment indicated that Teacher's Achenbach TRF ratings of Anxiety problems had reduced from pre-treatment levels of 87th percentile to less than 50th percentile. Similarly, parent ratings indicated that pre-test Anxious Depressed Symptoms on the Achenbach of 84th percentile were reduced to less than the 50th percentile at post treatment. Participant E's attributes of mindfulness increased from a raw score of 30 to 34 over the program.

Participant F: was an eleven year old grade six girl who was referred to the program by her teacher due to concerns regarding her high levels of anxiety and shyness in class. Participant F's mother was also concerned about her lack of confidence. The main language spoken in Participant F's home was Cantonese and Participant F's parents were both born in Viet Nam. Pre-treatment testing indicated that although Participant F endorsed some anxious symptoms on the BECK, her scores on self-esteem, anxiety, depression, anger and behaviour were normal for her age. Participant F's teacher's responses on the TRF indicated that she was exhibiting a borderline clinical level of anxiety problems in the classroom (93rd percentile). Her parents responses on the CBCL also indicated that she was exhibiting a borderline clinical level of anxiety problems in the home environment (96th percentile).

Although Participant F's self-report suggested normal levels of anxiety, behavioural observations of her in the group were consummate with her parent and teacher's observations that Participant F's anxiety was much more moderate. Participant F was an extremely quiet member of the group during initial sessions. She appeared very anxious when asked to join in group discussions. Participant F's eyes were often downcast and with a worried facial expression. She was able to verbally answer questions when asked, but did not share spontaneously. Participant F was able to apply her feelings of anxiety to the cognitive activities. She had trouble focusing during the meditation during the initial sessions, appearing distracted and not engaged. Despite Participant F's apparent high levels of anxiety in the group, she pushed herself to work on these issues of anxiety. When the facilitators challenged the children to share spontaneously, Participant F took up the challenge to participate during group sharing despite feelings of anxiety and was able to use acceptance and mindfulness strategies to manage her anxiety during these times. Participant F expressed pride in her achievements in being successful for doing this and maintained this change for the remaining sessions. From this point on, a marked improvement in Participant F's mood was noted. Her affect was brighter and her contributions to the group were intelligent and highly insightful. Participant F's transformation was quite dramatic and sustained for the remainder of the program. Participant F also reported numerous examples in which the mindfulness breathing helped her cope with difficult events outside the group. She was committed to the home practice and learning to better manage her anxiety during the group.

Participant F reported on the group evaluation form that she ‘in-between’ found that the group helped her feel more confident and happier. She did endorse ‘sometimes’ that the activities were sometimes hard to understand. Participant F showed a slight reduction on the anxiety measure and a small improvement on the self-esteem measure on the BECK. However, this improvement should be viewed in light of Participant F’s low self-reported levels of anxiety at pre-test. Post treatment parent and teacher responses on the Achenbach indicated that Participant F’s Anxiety Problems had reduced from the borderline clinical range to the normal range which coincided with behavioural observations of Participant F within the group setting. Participant F’s raw score on the adapted Mindfulness Attention Scale at the beginning of the program was a raw score of 41 which was 40 at the end of the program, suggesting relatively high levels of pre-existing mindfulness attributes. This may have been due to a tendency for Participant F to report herself in a positive light (as with the tendency to minimize psychological symptoms on the Beck Youth Inventories).

Participant G: was a twelve year old grade six boy who was referred by his teacher due to concerns about his anxiety levels. Participant G’s parents were born in El Salvador and Spanish was the main language spoken at home. Despite giving their written consent for Participant G to participate in the program, Participant G’s parents were unable to complete the Achenbach’s for Participant G. Teacher responses on the Achenbach suggested mildly elevated anxiety problems for Participant G (73rd percentile). Participant G’s responses on the Beck Youth Inventory indicated normal levels of psychological symptoms.

Participant G attended 5 out of the 8 session. He was away for 3 sessions due to sickness (Participant G had a higher than average level of school absenteeism in general). Participant G’s behaviour during the initial session indicated that he had low mood and was quite withdrawn and did not offer any spontaneous comments during group time. He appeared anxious and withdrawn except for during a drawing activity where he appeared to become enthusiastic and talkative. During the second session, Participant G was able to think about his own thoughts and feelings providing relevant examples and distinguished well between situations, thoughts and feelings. Unfortunately, Participant G missed session 4 and 5 but returned to week six appearing further engaged and participated keenly in body scan activity, finishing the final sessions with improved affect and spontaneous sharing continuing to share more

challenging personal experiences, relating them usefully to the cognitive and mindfulness activities.

On the evaluation form, Participant G endorsed 'often' that he found the program fun, the program helped him feel more confident and feel happier. Participant G endorsed 'in-between' for level of home practice and agreed that 'sometimes' the activities were hard to understand. He wrote that he liked the group game and moment of silence and didn't dislike anything. Teacher responses on the TRF Achenbach indicated that he no longer exhibited any signs of anxiety in class. Participant G's pre and post responses on the Adapted Mindfulness Attention Awareness Scale indicated an increased endorsement of qualities associated with mindfulness from a raw score of 31 to a 40 at post treatment indicating that Participant G's improvement coincided with an apparent improvement of mindfulness attributes.

Participant H: was a 12 year old grade six girl who was referred by her teacher due to concerns about her anxiety levels. Participant H was an only child who lived with her mother and father. The parents were born in Vietnam and Vietnamese was the main language spoken at home. There was a history of problems reported by the mother related to Participant H's anxiety levels.

Pre testing results indicated that Participant H had problems with anxiety. On the BECK, Participant H's responses indicated that she had low self-esteem and mildly elevated anxiety levels. The teacher's responses on the TRF Achenbach indicated a borderline clinical level of internalizing problems. The parent's responses indicated a clinically significant level of Withdrawn / Depressed behaviours in the home environment.

Participant H attended 7 out of 8 sessions. She didn't attend the first session, as she was in Vietnam on a family visit. Participant H was an enthusiastic but quiet member of the group who stated initially that she would like to learn to go to sleep at night. During the initial sessions, it was clear that Participant H had the capacity to grasp cognitive concepts in a sophisticated manner. She appeared extremely focused during the meditations. However, Participant H demonstrated extremely high levels of anxiety during her group sharing (e.g. shaking hands) and lacked insight into this anxiety or was unable to talk about it. She only shared when prompted. She tended to minimize her feelings and express them as "normal". By session 5, Participant H appeared to relax more in the group and showed willingness to label her thoughts and feelings and share spontaneously with the group.

Post-testing indicated that overall, Participant H's symptoms on the BECK did reduce. Her level of anxiety in particular had dropped from the mild elevated to normal range and her self-esteem improved. Teacher responses on the TRF indicated a significant reduction in internalizing problem behaviours (from 89th percentile (pre-test) to 58th percentile (post-test)). On the evaluation form, Participant H endorsed 'In-between' that the group helped her feel more confident and endorsed 'often' that the group was fun and helped her feel happier in life. Participant H endorsed 'often' that she was able to practice the home exercises and reported that the exercises were 'never' hard to understand. Participant H commented that she disliked feeling uncomfortable during the meditation for enjoyed the games and prizes. On the adapted Mindfulness Attention Awareness Scale, Participant H's raw score was 28 at pre-test and remained about the same at 29 post-test, indicating that attributes of mindfulness did not appear to coincide with her improvement.

Participant I: was an eleven year old grade six boy who was referred to the program by his teacher who was concerned that Participant I was an extremely reserved child who was unable to share or express his own ideas to others. The teacher was also concerned that Participant I would become extremely emotional and tearful when under pressure to complete tasks on time. Participant I's self-reported responses on the BECK during pre-testing indicated that his self-esteem was extremely low for his age. Participant I's responses indicated that his anxiety and levels of depression were moderately elevated. The teacher's responses on the TRF Achenbach during pre-testing indicated that although Participant I's level of problems were normal, his Withdrawn Depressed behaviour was elevated (90th percentile). Participant I's parents responses on the Achenbach indicated a clinically significant level of withdrawn / depressed behaviour in the home environment.

Participant I attended all 8 sessions. Despite Participant I's high levels of self-reported psychological symptoms, in the initial sessions of the program, he was highly defensive about having any feelings. His affect was highly anxious (nervous and stressed facial expression and tense body language) and he tended to giggle. When asked about his feelings initially, he reverted to saying that he felt "normal". As the sessions progressed, Participant I appeared to relax and become less defensive, and his affect became less anxious and a little brighter. Participant I began to share about unpleasant experiences that occurred in his home environment. His fear of sharing continued and often would defer to labelling his feelings as "normal" when anxious.

Participant I appeared to participate fully during meditation. Towards the end of the program, Participant I appeared to be happier most of the time and less worried. He endorsed 'sometimes' that the group helped him feel more confident and happier in life. He endorsed that he was able to practice at home 'sometimes' and also indicated that the exercises were 'sometimes' hard to understand.

Post testing indicated a general concordance between all informants that Participant I's psychological symptoms had improved compared to pre testing. Participant I's self-esteem although still below average but was significantly greater. His levels of anxiety had dropped to a normal level, but levels of depression remained in the moderately elevated range. Participant I's parent's responses indicated that his Withdrawn/ Depressed symptoms had reduced to a normal level. His teacher's response also indicated reduced Withdrawn /Depressed symptoms (from 90th percentile (pre-test) to 62nd percentile (post-test)). Participant I's score on the adapted Mindfulness Awareness Scale increased from pre-test raw score of 28 to a post-test raw score of 36. This indicated that Participant I's may have acquired qualities of mindfulness through his participation in the program.

Appendix E: Modifications to Mindfulness Pilot Program for Main Study

Session	Mindfulness Pilot Program	Main Study	Rational for Change
One	Get to Know Each Other (Ice breaker)	Get to Know Each Other (Animal Alphabet)	The two way interview and subsequent group sharing was assessed as too confronting for the children on the first session and certainly did not 'break the ice'. A less demanding 'Animal Alphabet' game was substituted as the ice breaker.
	Group Rules and Expectations	Group Agreements	No change
		Personal Values	There was an identified need for the children to develop a self-understanding of how they could personally benefit from the program. Establishing personal values aimed to focus children on what they could get out of the program personally.
	Raisin Exercise	Raisin Exercise	No change
	Definition of Mindfulness	Definition of Mindfulness (written on white board and written down by children and linked to Raisin activity)	Data from the MPP indicated that the children needed more times to develop an understanding of what is meant by mindfulness in the sessions rather than relying on a one off worksheet for the homework.
		Mindful Face Drawing	This activity was included due to the identified need from the MPP that this sample of children sometimes responded better to non-verbal and / or experiential material rather than language orientated activities.
	Homework practice – mindful eating and everyday activity with diary to complete	Homework: Mindful Breathing Picture to remind to take 3 mindful breaths.	Based on generally low verbal competencies of the MPP sample and qualitative data that indicated the homework was too hard, homework in the main study was simplified and the reading and writing components were eliminated.

			Meditation scripts were delivered to the children via audio CDs for home practice.
Two	Review and discussion of Homework	Homework Review and Definition of Mindfulness	Mindfulness definition to be written on white board from children's memories every week to increase awareness of qualities of mindfulness for children in the sample.
		Mindfulness Bell	This activity was included out of the identified need for this sample to be provided with more experiential activities to experience and foster qualities of mindfulness during the session.
	Sitting Breath Meditation	Sitting Breath Meditation – simplified script	Meditation scripts were generally simplified due to the identified low verbal ability of the MPP and qualitative data that suggested that aspects of the MPP were hard for the children to understand.
	Thoughts and Feelings Exercise – Part One	Thoughts and Feelings -Feelings Cards -Feelings Scenario -Comfortable Events	MPP results suggested that the cognitive component of the MPP required significant changes to be effective for more children in the sample. Feelings Cards were introduced to improve children's feelings vocabulary and help children to make the distinction between their thoughts and feelings. The Diary (ABC model) was completed during group time because MPP results suggested that children were unable to understand this exercise for homework. The word 'pleasant' was changed to 'comfortable' due to the lack of understanding of what was meant by 'pleasant' in the MPP sample of children.
	Homework practice - Pleasant Events Calendar, Breathing Space meditation each	Homework – Sitting Breath Meditation	Homework was for children to do the Sitting Breath Meditation daily by listening to the audio CD. The use of an audio CD was essential as the MPP sample of children

	day		had trouble remembering the scripts. Also, unlike in the MPP program, meditations were always introduced in the session first before the children were required to practice them for homework. This provided the children more continuity between the sessions and home practice.
Three	Review and discussion of Homework	Homework Review / Definition of Mindfulness / Mindfulness Bell Designation	Rationale for these activities is discussed above.
	Hatha Yoga	Hatha Yoga	Two positions were introduced rather than four as MPP suggested that the MPP program required significant simplification for the children in the sample.
	Thoughts and Feelings Exercise Part 2	Thoughts and Feelings Part 2 - Uncomfortable Events (to be completed in group followed by a group share)	The cognitive component of the MPP required significant modification and extra attention for more children to benefit. The activity was therefore conducted within the session and not homework so that children who had difficulties understanding could be supported. Many children were unfamiliar with the word 'unpleasant', but were familiar with 'uncomfortable'.
	Three minute breathing space	Sitting Meditation and Group discussion	The Breathing Space meditation was introduced later in the program. Sitting meditation is practiced for a second time in this session and was followed by a group to provide the children with the opportunity to discuss their experiences during meditation immediately afterwards so that they were more likely to remember their experiences.
		Bubble Meditation	This meditation was included due to the identified need from the MPP that more child friendly non-verbal experiential tasks were required to foster and encourage qualities of mindfulness in the children.

	Homework – Unpleasant Events Diary	Homework – Sitting Meditation Practice	As discussed above in session two, homework was simplified to listening to a CD for daily meditation practice.
Four	Review and discussion of Homework	Homework Review / Definition of Mindfulness / Mindfulness Bell Designation	Rationale for these activities is discussed above.
	Mindful Listening Exercise	Mindful Listening Exercise	This activity remained the same
	Yoga Positions	Yoga	Two more positions are introduced.
	Being in your Body – The Body Scan Meditation	Choose a feeling and thoughts with cards	Inclusion of more cognitive activities was hoped to increase chances that more children would benefit from and understand cognitive concepts in the main study. Continued attention to feelings was considered relevant also to this weeks feeling meditation.
		Feelings Meditation	Feelings meditation was introduced through identified need for more activities that had language appropriate for very young children (given low language ability in MPP sample). The feelings meditation was developed by A. Salzman for younger children. It was also hoped that this meditation would complement the cognitive component of the program with it's focus on feelings.
		Automatic Thoughts Part 1	Automatic thoughts was also added because it was apparent from MPP that children didn't know what to do with their negative thoughts without experiencing distress and wanting to avoid.
	Homework - Body Scan and Reading "Staying Present" hand out.	Homework – feelings meditation	As discussed in above session three, homework was simplified to listening to a CD for daily meditation practice for a meditation that has been introduced already in group time.
Five	Review and discussion of	Homework Review / Definition of Mindfulness / Mindfulness Bell	Rationale for these activities is discussed above.

	Homework	Designation	
	Breathing Spaces	Body Scan	The body scan was introduced in this later session as a simplified and shorter version of the Body scan used in the MPP. This was due to qualitative data from MPP suggesting that the Body scan was too long for the children in the MPP sample.
	Walking Meditation	Automatic Thoughts Part 2 -Rubbish Bin - Bubble Meditation	Further cognitive work was considered important as discussed in previous sections. Qualitative information from MPP suggested children were confused about how to think about uncomfortable thoughts. The children were given the opportunity to metaphorically observe, accept and let go of their uncomfortable thoughts via the rubbish bin and bubble meditations.
	Homework – walking meditation and breathing space meditation with record booklet.	Homework – Body scan	As discussed in above session four, homework was simplified to listening to a CD for daily meditation practice.
Six	Review and discussion of Homework	Homework Review / Definition of Mindfulness / Mindfulness Bell Designation	Rationale for these activities is discussed above.
	Breathing Space reviewed	Introduction to Breathing Space	A simplified version to the MPP Breathing space meditation was introduced to the children today
	Non-Judging exercises	Non-Judgment Exercise	The Non-Judgment exercise was essentially the same except that the object was hidden in a flip top box rather than the children using blindfolds.
	Yoga review	Yoga review Walking meditation	The Walking meditation was introduced in this later session and remained essentially the same as the MPP program except that the children were required to walk across the school oval to limit opportunities for

			them to distract each other (as was seen in the MPP program)
	Homework – Mindfulness practice and diary	Homework – body scan	As discussed in above session five, homework was simplified to listening to a CD for daily meditation practice.
Seven	Review and discussion of Homework	Homework Review / Definition of Mindfulness / Mindfulness Bell Designation	Rationale for these activities is discussed above.
	Yoga reviewed	Review Yoga	This activity remained the same
	Optical Illusions Exercise	Optical Illusion Exercise (with group discussion)	This exercise remained the same except that a group discussion followed so that facilitators could reinforce the concept that ‘thoughts are not facts’.
	Clock Meditation	Clock Meditation	No change
	Three minute seated meditation	Breathing space meditation and group discussion	Instead of the three minute seated meditation, the Breathing space meditation was practiced for a second time with an opportunity for the children to discuss their experiences and for the facilitators to reinforce that this is a meditation that can be used when the children are confronted with challenges or uncomfortable thoughts or feelings.
	Homework and Housekeeping	Homework -Breathing Space (use in everyday life) - Illustrations of mindfulness story	As discussed in above session five, homework was simplified to listening to a CD for daily meditation practice. The Mindfulness Story was introduced so that the children had a summary of the concepts learnt in the main study that they could look back on in the future. It was thought that if they children illustrated the story, they may take in at least some of the information
Eight	Review and discussion of Homework	Homework Review / Definition of Mindfulness / Mindfulness Bell Designation	Rationale for these activities is discussed above.
	Overview of themes	Overview of themes	Mindfulness story was read in this section.

Party and game	Party and game	No change
3 minute seated breath meditation	Sitting breath meditation	Finishing with the simple breath meditation was felt to be appropriate
Facilitator Feedback	Facilitator Feedback	No change

Appendix F: Occupational Codes

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PARENTAL OCCUPATION GROUP CODES

The codes outlined below are to be used when providing family occupation details for enrolled students. This information is used for determining funding allocations to schools.

GROUP A Senior management in large business organisation, government administration and defence, and qualified professionals

- Senior Executive / Manager / Department Head** in industry, commerce, media or other large organisation
Public Service Manager (Section head or above), regional director, health / education / police / fire services administrator
Other administrator (school principal, faculty head / dean, library / museum / gallery director, research facility director)
Defence Forces Commissioned Officer
Professionals - generally have degree or higher qualifications and experience in applying this knowledge to design, develop or operate complex systems; identify, treat and advise on problems; and teach others:
- *Health, Education, Law, Social Welfare, Engineering, Science, Computing* professional
 - *Business* (management consultant), business analyst, accountant, auditor, policy analyst, actuary, valuer)
 - *Air/sea transport* (aircraft / ship's captain / officer / pilot, flight officer, flying instructor, air traffic controller)

GROUP B Other business managers, arts/media/sports persons and associate professionals

- Owner / Manager** of farm, construction, import/export, wholesale, manufacturing, transport, real estate business
Specialist Manager (finance / engineering / production / personnel / industrial relations / sales / marketing)
Financial Services Manager (bank branch manager, finance / investment / insurance broker, credit / loans officer)
Retail sales / Services manager (shop, petrol station, restaurant, club, hotel/motel, cinema, theatre, agency)
Arts / Media / Sports (musician, actor, dancer, painter, potter, sculptor, journalist, author, media presenter, photographer, designer, illustrator, proof reader, sportsman/woman, coach, trainer, sports official)
Associate Professionals - generally have diploma / technical qualifications and support managers and professionals:
- *Health, Education, Law, Social Welfare, Engineering, Science, Computing* technician / associate professional
 - *Business / administration* (recruitment / employment / industrial relations / training officer, marketing / advertising specialist, market research analyst, technical sales representative, retail buyer, office / project manager)
 - *Defence Forces* senior Non-Commissioned Officer

GROUP C Tradesmen/women, clerks and skilled office, sales and service staff

- Tradesmen/women** generally have completed a 4 year Trade Certificate, usually by apprenticeship. All tradesmen/women are included in this group
Clerks (bookkeeper, bank / PO clerk, statistical / actuarial clerk, accounting / claims / audit clerk, payroll clerk, recording / registry / filing clerk, betting clerk, stores / inventory clerk, purchasing / order clerk, freight / transport / shipping clerk, bond clerk, customs agent, customer services clerk, admissions clerk)
Skilled office, sales and service staff:
- *Office* (secretary, personal assistant, desktop publishing operator, switchboard operator)
 - *Sales* (company sales representative, auctioneer, insurance agent/assessor/loss adjuster, market researcher)
 - *Service* (aged / disabled / refuge / child care worker, nanny, meter reader, parking inspector, postal worker, courier, travel agent, tour guide, flight attendant, fitness instructor, casino dealer/supervisor)

GROUP D Machine operators, hospitality staff, assistants, labourers and related workers

- Drivers, mobile plant, production / processing machinery and other machinery operators**
Hospitality staff (hotel service supervisor, receptionist, waiter, bar attendant, kitchen hand, porter, housekeeper)
Office assistants, sales assistants and other assistants:
- *Office* (typist, word processing / data entry / business machine operator, receptionist, office assistant)
 - *Sales* (sales assistant, motor vehicle / caravan / parts salesperson, checkout operator, cashier, bus / train conductor, ticket seller, service station attendant, car rental desk staff, street vendor, telemarketer, shelf stacker)
 - *Assistant / aide* (trades assistant, school / teacher's aide, dental assistant, veterinary nurse, nursing assistant, museum / gallery attendant, usher, home helper, salon assistant, animal attendant)
- Labourers and related workers**
- *Defence Forces* - ranks below senior NCO not included above
 - *Agriculture, horticulture, forestry, fishing, mining* worker (farm overseer, shearer, wool / hide classifier, farm hand, horse trainer, nurseryman, greenkeeper, gardener, tree surgeon, forestry/ logging worker, miner, seafarer / fishing hand)
 - *Other worker* (labourer, factory hand, storeman, guard, cleaner, caretaker, laundry worker, trolley collector, car park attendant, crossing supervisor)

Appendix G: Primary Family Details

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PRIMARY FAMILY DETAILS

NOTE: The 'PRIMARY' Family is 'the family or parent the student mostly lives with' - Alternative and Additional family forms are available from the school if this is required.
As the School Start Bonus will be sent to the 'Primary Carer' of Prep and Year 7 students, it is imperative that the legal surname, legal first name and legal second name are recorded.

ADULT A DETAILS (PRIMARY CARER):

Sex (tick):	<input type="checkbox"/> Male	<input type="checkbox"/> Female
Title: (Ms, Mrs, Mr, Dr etc)		
Legal Surname:		
Legal First Name:		
What is Adult A's occupation?		
Who is Adult A's employer?		
In which country was Adult A born?		
<input type="checkbox"/> Australia <input type="checkbox"/> Other (please specify):		
◊ Does Adult A speak a language other than English at home? (If more than one language is spoken at home, indicate the one that is spoken most often.) (tick)		
<input type="checkbox"/> No, English only <input type="checkbox"/> Yes (please specify):		
Please indicate any additional languages spoken by Adult A:		
Is an interpreter required? (tick) <input type="checkbox"/> Yes <input type="checkbox"/> No		
◊ What is the highest year of primary or secondary school Adult A has completed? (tick one) (For persons who have never attended school, mark 'Year 9 or equivalent or below'.) <input type="checkbox"/> Year 12 or equivalent <u>4</u> <input type="checkbox"/> Year 11 or equivalent <u>3</u> <input type="checkbox"/> Year 10 or equivalent <u>2</u> <input type="checkbox"/> Year 9 or equivalent or below <u>1</u>		
◊ What is the level of the highest qualification the Adult A has completed? (tick one) <input type="checkbox"/> Bachelor degree or above <u>7</u> <input type="checkbox"/> Advanced diploma / Diploma <u>6</u> <input type="checkbox"/> Certificate I to IV (including trade certificate) <u>5</u> <input type="checkbox"/> No non-school qualification <u>8</u>		
◊ What is the occupation group of Adult A? Please select the appropriate parental occupation group from the attached list. • If the person is not currently in paid work but has had a job in the last 12 months, or has retired in the last 12 months, please use their last occupation to select from the attached occupation group list. • If the person has not been in paid work for the last 12 months, enter 'N'.		

ADULT B DETAILS:

Sex (tick):	<input type="checkbox"/> Male	<input type="checkbox"/> Female
Title: (Ms, Mrs, Mr, Dr etc)		
Legal Surname:		
Legal First Name:		
What is Adult B's occupation?		
Who is Adult B's employer?		
In which country was Adult B born?		
<input type="checkbox"/> Australia <input type="checkbox"/> Other (please specify):		
◊ Does Adult B speak a language other than English at home? (If more than one language is spoken at home, indicate the one that is spoken most often.) (tick)		
<input type="checkbox"/> No, English only <input type="checkbox"/> Yes (please specify):		
Please indicate any additional languages spoken by Adult B:		
Is an interpreter required? (tick) <input type="checkbox"/> Yes <input type="checkbox"/> No		
◊ What is the highest year of primary or secondary school Adult B has completed? (tick one) (For persons who have never attended school, mark 'Year 9 or equivalent or below'.) <input type="checkbox"/> Year 12 or equivalent <input type="checkbox"/> Year 11 or equivalent <input type="checkbox"/> Year 10 or equivalent <input type="checkbox"/> Year 9 or equivalent or below		
◊ What is the level of the highest qualification the Adult B has completed? (tick one) <input type="checkbox"/> Bachelor degree or above <input type="checkbox"/> Advanced diploma / Diploma <input type="checkbox"/> Certificate I to IV (including trade certificate) <input type="checkbox"/> No non-school qualification		
◊ What is the occupation group of Adult B? Please select the appropriate parental occupation group from the attached list. • If the person is not currently in paid work but has had a job in the last 12 months, or has retired in the last 12 months, please use their last occupation to select from the attached occupation group list. • If the person has not been in paid work for the last 12 months, enter 'N'.		

◊ These questions are asked as a requirement of the Commonwealth Government. All schools across Australia are required to collect the same information.

Main language spoken at home:	Preferred language of notices:
Are you interested in being involved in school group participation activities? (eg. School Council, excursions) (tick)	<input type="checkbox"/> Adult A <input type="checkbox"/> Adult B <input type="checkbox"/> Both <input type="checkbox"/> Neither

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Appendix H: Program Manual

Section 1: Introduction

Overview

The following is a description of how the 'Mindful Child' program can be conducted. The information includes:

- Section One: Introduction, rationale for the program, program description and key components of the program
- Section Two: Program Overview
- Section Three: Week by week description of program
- Section Four: References
- Section Five: Hand outs and homework

Professionals who are suitable to conduct this program include those with tertiary qualifications in the fields of psychology, social work, teaching and who have experience and in depth knowledge of the principles of mindfulness meditation and have preferably implemented these practices into their own lives.

Introduction

The Mindful Child program is a short term therapeutic program for primary school children from Grade 4 to Grade 6 (9 to 12 years old) who have externalising (acting out) and/or internalising (acting in) behaviour problems. The program is also for children with problems with concentration and attention. Mindfulness based approaches have been empirically validated for adults and initial studies suggest that these approaches are effective for children with such difficulties (see Section 5 for a literature review).

The Mindful Child program includes parent and teacher involvement via initial individual meetings with parents and teachers about the child.

Rationale for the Program

Emotional, behavioural and concentration problems in childhood can cause long term difficulties for children and families. Problems may take the form of externalising behaviours (e.g., aggression and oppositionality) and /or internalising behaviours (e.g., anxiety, depression) or learning difficulties and poor academic progress. The early identification of these problems and intervention can reduce the risk of children developing long-term mental health or learning issues. Therefore the development of programs that reduce these problems in children needs to be a priority in clinical research.

Mindfulness approaches are practices in the self-management of attention that improve a person's ability to perceive his/her environment in the present moment (Baer & Krietemeyer, 2006). Mindfulness practices have been incorporated into a number of different treatment approaches including Mindfulness Based Stress Reduction (MBSR) (Kabat-Zinn, 1990); Mindfulness Based Cognitive Therapy (MBCT) (Segal, Williams, & Teasdale, 2002); Dialectical Behaviour Therapy (for the treatment of Borderline Personality Disorder) (Linehan, 1993a; 1993b) and Acceptance and Commitment Therapy (ACT) (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996).

Initial evidence supports these interventions as effective in positive mental health outcomes for adults but studies are numbered and more research needs to take place (Baer 2003, Grossman, Niemann, Schmidt & Walach, 2004). Moreover, there is limited published research on the clinical efficacy of mindfulness approaches for children's mental health issues (Semple, Lee, & Miller, 2006). In children, anxiety has been a focus with some positive outcomes from recent controlled trials (e.g. Semple, Lee & Miller, Semple, Reid, & Miller, 2005). Other studies have indicated that mindfulness approaches may be of benefit in depression and coping with bullying (e.g., McCloy, 2005). These studies are limited and require replication. Although mindfulness teaches people to better self-manage attention, no studies have been conducted to investigate the efficacy of mindfulness in children with attention and concentration problems (e.g., Attention Deficit (Hyperactivity) Disorder), although some initial studies show a reduction of symptoms in adults (Hesslinger, et al, 2002). Research that shows positive reductions in aggressive behaviour in adults (e.g., Murphy, 1995) supports the adaptation of mindfulness approaches to see if they can help reduce aggression in children.

Program Description

The program consists of:

- Individual parent meeting at the beginning and end of the program
- Individual teacher meeting at the beginning and end of the program
- Eight 60 minute weekly sessions for the children.

The aim of the individual parent and teacher meetings is to empower the parent to support the child through the program by supporting the child in doing their homework tasks.

Key program components

In Mindful Child, many of the practices have been adapted to be appropriate for school aged children. Specific techniques and concepts for the program were adapted from two adult based programs including Mindfulness Based Stress Reduction (Kabat-Zinn, 1982, 1990) and Mindfulness – Based Cognitive Therapy (Segal, Williams, & Teasdale, 2002) and a pilot program for children by Semple, Reid, & Miller, 2005.

Mindfulness Based Stress Reduction (Kabat-Zinn, 1982, 1990), was developed for individuals who were suffering from stress related conditions or chronic pain in

medical settings. The Mindful child has adapted many of the practices used in this program to be used with children.

Mindfulness Based Cognitive Therapy was primarily developed by Segal et al (2002) for the treatment of depression. These techniques do not include the traditional cognitive therapy exercises designed to change thoughts, but cultivate a more accepting and non-judgemental relationship to our thoughts. The Mindful child program has adapted many of the practices used in this program to be used with children.

Acceptance and Commitment Therapy (ACT) (Hayes, Strosahl & Wilson, 1999) is based on a philosophy of science known as functional contextualism, which requires practitioners to analyse behaviours in terms of their function in a particular context. ACT proposes that psychological suffering stems from language processes that foster psychological inflexibility. The ACT goal of greater psychological flexibility is acquired through the use of metaphors, paradox, and experiential exercise to help clients develop the ability to contact the present moment in a way which they can decide whether a behaviour is values consistent (Hayes et al., 1999).

Dialectical Behavior Therapy (DBT) (Linehan, 1993) is based on a dialectical world view whose therapeutic aim is to balance the dialectic of acceptance and change. In other words, clients are encouraged to accept themselves while simultaneously working toward change. DBT was developed for the treatment of adult suicidal females with a diagnosis of borderline personality disorder (Linehan, 1993).

Section 2: Overview of Program

	Agenda	Home practice
Individual Parent introduction session (2 hours)	<ul style="list-style-type: none"> •Provide an experience of mindfulness •Provide information about the mindfulness program •Discuss parent concerns about child •Discuss how the parent can support child in program •Conduct behavioural assessment and parent consent for child's inclusion in program. 	<ul style="list-style-type: none"> •Parent is encouraged to show interest in the child's home practice exercises
Individual child introduction session and assessment (1 hour)	<ul style="list-style-type: none"> •Provide information about mindfulness program •Obtain child consent for their participation in program •Conduct psychological assessment of child 	<ul style="list-style-type: none"> •None
Session 1 (1 hour)	<ul style="list-style-type: none"> •Introduction to program – animal alphabet •Personal goals •Raisin exercise •Definition of Mindfulness •Group agreements •Mindful face – 3 mindful breaths 	<ul style="list-style-type: none"> •Put Mindful Face above bed as reminder to take 3 mindful breaths each morning.
Session 2 (1 hour)	<ul style="list-style-type: none"> •Homework review and rewards •Review Definition of Mindfulness •Mindful Bell •Sitting Breath Meditation / Group Discussion •Thoughts and Feelings – Card activity •Thoughts and Feelings – Scenario •Thoughts and Feelings – complete entry in events diary 	<ul style="list-style-type: none"> •Listen to track 1 of program CD (Sitting breath meditation) each day •Complete an entry in events diary.
Session 3 (1 hour)	<ul style="list-style-type: none"> •Review homework and definition of mindfulness •Mindfulness Bell •Sitting Breath Meditation – review •Thoughts and Feelings Part Two – Card activity •Thoughts and Feelings Part Two – Events diary- sharing •Yoga 	<ul style="list-style-type: none"> •Listen to track 1 of program CD (Sitting breath meditation) each day •Complete an entry in events diary. •Practice Yoga exercises
Session 4 (1 hour)	<ul style="list-style-type: none"> •Review homework and definition of mindfulness •Mindfulness Bell •Choose a feeling card related to events diary to discuss with group •Feelings Meditation 	<ul style="list-style-type: none"> •Listen to track 2 of program CD (Feelings meditation) each day •Practice Yoga

Session 5 (1 hour)	<ul style="list-style-type: none"> •Mindful Listening Activity •Yoga part two •Automatic thoughts part one •Review homework and definition of mindfulness •Mindfulness Bell •Body Scan Meditation •Automatic thoughts part two •Bubble meditation •Yoga practice 	<p>exercises</p> <ul style="list-style-type: none"> •Listen to track 3 of program CD (Body Scan meditation) each day •Practice Yoga exercises
Session 6 (1 hour)	<ul style="list-style-type: none"> •Review homework and definition of mindfulness •Mindfulness Bell •Breathing Space meditation •Judgment observation activity •Bubble meditation with automatic thoughts •Walking meditation 	<ul style="list-style-type: none"> •Listen to track 4 of program CD (Breathing Space meditation) each day •Practice Yoga exercises
Session 7 (1 hour)	<ul style="list-style-type: none"> • Review homework and definition of mindfulness • Mindfulness Bell • Optical Illusion Activity (thoughts are not facts) • Clock Meditation • Mindful Corner game • Breathing Space Meditation • Yoga practice 	<ul style="list-style-type: none"> • Listen to favourite track of program CD
Session 8 (1 hour)	<ul style="list-style-type: none"> •Review homework and definition of mindfulness •Mindfulness Bell •Children Illustrate Story ('Journey into mindfulness') and group read story aloud •Goals reflection •Party – practicing mindful eating 	<ul style="list-style-type: none"> •None
Individual child assessment session	<ul style="list-style-type: none"> •Assessment •Opportunity for child to discuss program individually 	<ul style="list-style-type: none"> •None
Individual Parent Review and Assessment Session (2 hours)	<ul style="list-style-type: none"> •Review of mindfulness concepts •Parent to give feedback about their child's participation in program •Assessment 	<ul style="list-style-type: none"> •None

Section 3: Weekly Description

Parent Session 1

Handouts

Explanatory Statement

Consent Form

Aims

To conduct parent assessment of child

To introduce the program to the parent

To encourage the parent to support the child's participation in the program

Agenda

Discussion about child's strengths and weaknesses

Introduction to the program and reading the Explanatory Statement

Signing the Consent Form

Parent Participation

Child Session 1

Materials

Work folders
 Workbooks
 Raisins
 Poster paper /Craft materials to make posters

Handouts

A Definition of Mindfulness
 Homework Practice for Session
 Personal Values

Aims

To get to know each other
 To create personal values
 To discuss group rules and confidentially
 To introduce the concept of mindfulness by providing an experience of mindfulness through the 'Raisin activity'
 To create an initial mindfulness home practice

Agenda

Introduction to program – getting to know you exercise
 Personal values activity
 Raisin exercise
 Definition of Mindfulness
 Group agreements
 Mindful face – 3 mindful breaths
 Home practice

Ice Breaker

Getting to know each other
 Animal Alphabet

Introduction to program

The first aim of Session 1 is group formation. The children may not know each other that well and may have preconceived ideas about coming to the group. They may be reluctant to attend the group, be highly anxious, or not be sure about the reasons for their inclusion in the group. The group leader needs to promote commitment to the group and group cohesion by clearly explaining the rationale for the group.

The group leader explains that mindfulness is something that is hard to explain and is better learnt by experiencing it through the activities. The group are told that the activities today will start to show them what we mean by mindfulness. It is explained to the group that Mindfulness is like riding a bicycle, it is difficult to tell someone how to

do it, rather, you have to practice a lot to understand how to do it and then through that practice, it becomes easier. The group are also told that coming to this group is an opportunity for them to improve an area of their life that is important to them. The group are told that they will be given the opportunity to write down the things that are important to them in the personal values activity.

2. Personal Goals / Values

Values in Acceptance and Commitment therapy is distinct from Goal setting because values represent a chosen life direction than cannot be achieved in a static or absolute sense as can concrete goals (Wicksell et al, 2007). Choosing values are an important catalyst for change and the activity sets the agenda for children that the mindfulness group may be a support for the things that they value or the things that are important to them (e.g. not arguing with their parents or not getting into trouble with the teacher). This activity aims to provide some personal meaning as to why the children are coming to the group.

For this activity, the children are asked to complete the 'My Values' activity sheet and then choose values cards from Andrew Fuller's Heart Master's Resilience Values and write them down on the sheet. Children can first think about what they would like to be different in themselves and others and then choose compatible values that would have these objectives be possible.

3. Raisin Exercise (Kabat-Zinn, 1990)

This exercise involves giving each child a few raisins and asking them to observe the raisins carefully as if he/she has never seen them before. The children are then asked to select one raisin and feel the texture of it between their fingers, taking note of its surfaces. The children are asked to be aware of any thoughts that they might have about raisins or food in general. Thoughts and feelings about liking or disliking raisins are noted as they come up while the raisins are being studied. The children are then asked to smell the raisins for a while. Finally, the children are asked to (with awareness), bring the raisin to their lips whilst also being aware of their arm moving, their arm's hand position and of salivation in their mouth as their mind and body anticipates eating. The process continues as the children place the raisin in their mouths and slowly chew, experiencing the taste. When the impulse to swallow comes up, it is watched consciously. When the child finally swallows the raisin, they are asked to imagine or sense that now their bodies are one raisin heavier.

Children are then given an opportunity to discuss their reactions to this exercise. Children may have positive reactions to the exercise even if they don't usually like raisins. This exercise gives the children a chance to participate mindfully in an activity that is often done quite automatically without awareness. The children are encouraged to eat mindfully during the week and record what foods they ate in a food diary.

Raisin Script

*I'm going to go around the group and give you each a few objects.
Now, what I would like you to do is focus on one of the objects and just imagine that you have never seen anything like it before. Imagine you have just dropped in from Mars this moment and you have never seen anything like it before in your life.*

[Leave a 3 second pauses between phrases, and the instructions are delivered in a matter-of-fact way, at a slow but deliberate pace, asking the group to do the following:]

Taking one of these objects and holding it in the palm of your hand, or between your finger and thumb [Pause]

Paying attention to seeing it [Pause]

Looking at it carefully, as if you had never seen such a thing before [Pause]

Turning it over between your fingers [Pause]

Noticing the way it feels between your fingers [Pause]

Looking at the parts where the light shines and the darker hollows and folds [Pause]

Letting your eyes explore every part of it, as if you had never seen such a thing before [Pause]

And if, while you are doing this, any thoughts come to mind about

“what a strange thing we are doing” or “what is the point of this” or I don’t like

these”, then just noting them as thoughts and bringing your attention back to the object [Pause]

And now smelling the object, taking it and holding it beneath your nose, and with each in-breath, carefully noticing the smell of it [Pause]

And now taking another look at it [Pause]

And now slowly taking the object to your mouth, maybe noticing how your hand and arm know exactly where to put it, perhaps noticing your mouth watering as it comes up [Pause]

And then gently placing the object in the mouth without biting it, just keeping it in your mouth and noticing how that feels [Pause]

And when you are ready, very slowly, taking a bite into it and noticing the tastes that comes out [Pause]

Slowly chewing it, noticing the saliva in the mouth,....the change in consistency of the object [Pause]

Then, noticing the urge to swallow without actually swallowing [Pause]

Finally, seeing if you can follow the sensations of swallowing it as you swallow, sensing it moving down to your stomach and also realizing that your body is now exactly one raisin heavier.

Adapted from Segal, Williams and Teasdale, (2002) Mindfulness Based Cognitive Therapy for Depression. The Guilford Press: New York.

4. Definition of Mindfulness

There are many definitions of mindfulness, but for the purpose of this program, Kabat-Zinn definition is used. In this definition:

“Mindfulness means paying attention in a particular way, on purpose in the present moment and non-judgmentally”.

This definition will be written on the board and related directly to the raisin exercise. The children will write the definition in their work books and also be given a typed copy. Each week, as a game, the children will be encouraged to remember the definition of mindfulness as the concept becomes more familiar through their participation in the

program. A handout with the written definition will be provided to the children for their folders.

5. Group Agreements

Group rules and expectations:

From the beginning of Session 1, the group needs to establish group rules and consequences. It is to be expected that children may test the boundaries of this new situation and need to learn from the start how rules and consequences will work in the group.

The aim of the group rules is to be ‘mindfulness of others’ or ‘care for others’. The group will generate specific rules and consequences and the group leader will define each rule and consequences in a constructive manner. The rules and consequences will be written up on a poster. The following rules and consequences are suggested:

Example Rules:

One person speak at a time

Walk around the room

Be mindful and care about other people

Be mindful and care about the property in the room

Remain in the room at all times

No swearing

Example Consequences:

First warning

Second warning

Quite time for 5 minutes (sitting away from the group)

Confidentiality

Children need to agree that information shared and material discussed within groups is confidential and will not be discussed outside the group.

Homework discussed

Each child is given a work folder to keep handouts and homework.

Discussion about the importance of homework is conducted. Children are told that homework is a chance for them to practice the things they learn each week in the group. Incentives for doing homework are discussed. Each week, those children who have completed their homework will go in the draw for a prize to be given at the end of each session. Children are also informed that a meditation CD will be given out next week for them to listen to as their primary meditation practice. The group leader ensures at this point that all children have access to a CD player in an acceptable space for them to meditate.

Mindful Face / 3 Mindful breaths

The children are asked to make a poster of a face that will remind them to take three mindful breaths each morning. Before starting the exercise, the children are asked to practice taking 3 mindful breaths.

Home Practice

With the help of a parent, stick your mindfulness poster above your bed or on the back of your bedroom or toilet door (or some other place where you are sure to notice it each morning). When you see the poster each morning, take 3 mindful breaths.

Child Session 2

Materials

Copy of mindfulness meditation CD

Buddhist meditation chimes

Worksheets

2.1 Homework practice for Session 2

2.3 Pleasant events

Aims

To review homework (three mindful breaths poster) and reinforce the importance of homework

To develop an understanding of the distinction between thoughts and feelings and how they interact

To introduce the sitting breath meditation

To introduce the mindful bell group activity to be conducted each week

Agenda

Homework review

Mindful Bell

Thoughts and feelings cards and scenario

Breath Meditation and group discussion

1. Review and discussion of previous week's homework:

Each child will have an opportunity to share with the group about their homework practices. Barriers to practice will be the discussion topic in this section. Children who participated in the homework go in the draw for a lucky dip prize that is drawn at the end of the session.

2. Mindful Bell

A Tibetan Bell is a prayer chime is traditionally used by Buddhists to mark the beginning and end of meditation. They are also used by a Buddhist master to bring a student back into focus when his mind wanders during meditation. The bell will be introduced to the children as a prop that will be used on a weekly basis to signify the group to stop and take 3 mindful breaths. One child each week will be chosen to use the bells and decide when the bell should be used.



3. Thoughts and Feelings Exercise (Adaptation from Segal et al. 2002)

The purpose of this exercise is to help the children to see how they interpret events that occur. Understanding these thoughts can help children to start to see the role of thoughts in determining how they feel. Children are first asked to list feelings and thoughts so

that they can start to become familiar with the difference. A distinction between thoughts and feeling from the Friend's Pathways program (Barrett, 2004) will be used:

“Even though they work together, there is an important difference between thoughts and feelings. One way to try to understand this is to picture your thoughts as being in your head and your feelings as being in your heart or body” (Barrett, 2004, p. 10).

Feeling card exercise:

Andrew Fuller's Feeling cards are placed face up in the center of the circle. The children are then asked to select two feelings that they have felt in the past week. After the children have selected their cards, they take turns in sharing their chosen feelings and telling the group why they felt this way. The group facilitator clarifies the thoughts the child had that led to the feeling, emphasizing the difference between thoughts and feelings.

Scenario:

The scenario exercise involves children closing their eyes and imagining the following scenario:

You are walking down the street and on the other side of the street you see somebody you know. You smile and wave. The person just doesn't seem to notice and walks by.

Children are then asked to become aware of what is going through their minds, including their thoughts and feelings, or the bodily sensations they might have. When children open their eyes, they are invited to describe any feelings or bodily sensations they experienced and any thoughts or images that went through their minds. These reactions are listed under the headings 'thoughts' and 'feelings' on the white board.

Discuss with the children how the same situation elicits many different thoughts and hence many different feelings. This observation can then be used as the basis for discussion of how emotional reactions are often the product of our interpretations of events.

The children are encouraged to discuss their thoughts feelings and emotions about this scenario. The ABC model is described and illustrated by this example in which a situation (A) leads to a thought or interpretation (B) that leads to a feeling or emotion (c) that leads to a way of behaving

The children are then given the Activity sheet: Pleasant Events Diary to complete one of their feeling card examples that were shared earlier, distinguishing between the situation, thoughts and feelings.

4. Sitting Breath Meditation (Kabat-Zinn, 1990)

The sitting breath meditation is conducted with the children via a guided script for about 5-10 minutes at the end of the session. The children are instructed to observe their breathing as it flows in and as it flows out. The children are asked to notice when their attention moves elsewhere and then note it and bring their attention back to the breath (i.e. the feeling of the air on their nostrils or the rising and falling of their belly). The children are instructed to sit still, and if they become uncomfortable, they are asked to note this discomfort and at the same time welcome the feeling. Then, if the child has to,

they shift their body to reduce the discomfort but doing so mindfully with moment to moment awareness as they are moving. The child then redirects their attention back to the breath. The children may notice themselves becoming distracted by their thoughts. The children are encouraged when they notice themselves not watching their breathing, to redirect their mind back to their breathing no matter what the thoughts are. It is important to emphasise to the children that thinking is neither bad nor undesirable during meditation. What matters is whether you are aware of your thoughts and feelings during meditation and how you handle them.

Following the sitting breath meditation, the children discuss their experiences as a group.

Sitting Breath Meditation

Pause for about 10 seconds between phrases.

Posture

First of all, paying attention to your posture

Making your back straight but not stiff. Imagining there is an invisible piece of string, pulling your head up towards the ceiling (Pause)

Sitting upright in a relaxed and comfortable way that shows you are awake and concentrating (Pause)

Placing your hands either in your lap, or resting on your knees, and then gently closing your eyes

Feeling the support of the cushion on the floor (Pause)

Making an effort to be still (Pause)

Feeling your body settle into stillness (Pause)

Breath

And now, becoming aware of the fact that you're breathing (Pause)

Noticing your breath as it enters and leaves your body (Pause)

There's no need to change the pattern of your breathing (Pause)

As best you can, simply allowing your breath to go in and out all by itself (Pause)

Noticing where you can feel your breathing (Pause)

Noticing your nostrils, as you feel the movement of breath, as it goes in and out through your nose (Pause)

Maybe noticing your mouth, as you feel the breath, going in and out past your mouth (Pause)

Noticing your chest rising and falling, as your breath expands and deflates your lungs (Pause)

Noticing your belly as well. Noticing the feeling of your belly rising and falling as your breath moves in and out of your body.

Noticing the stretching of your belly, with each in breath and each outbreath (Pause)

Choose where you notice your breath the most, where it feels strongest for you – whether it be the nostrils, mouth, chest or belly and then just keep noticing your breathing at that one place (Pause)

Noticing the moment to moment experience of breathing (Pause)

Experiencing the whole inbreath and the whole outbreath (Pause)

Noticing the moment when the inbreath begins and then ends (Pause)

Noticing the slight pause between the inbreath and the outbreath (Pause)

Noticing the moment when the outbreath begins and then ends (Pause)

As best you can, remaining fully aware of this breath in this moment (Pause)

And if, while you are doing this, any thoughts come to mind about “what a strange thing we are doing” or “why are we doing this” or “I’m bored” or “I don’t like this”, then just noticing them as thoughts and bringing your attention back to the breath. (Pause)

You may be also distracted by feelings in your body, or by emotions, or by sounds inside or outside the room. When you notice any of this, as best as you can, bring your attention back to your breathing – to the that one spot where you can most notice the breath (Pause)

Staying fully focused on the breath moving in and out of your body (Pause)

When you notice that you are no longer here with your breathing, briefly noticing what your mind is thinking about, and then gently, kindly, and firmly, returning your attention to your breathing (Pause)

With kindness, patience and self-acceptance. Without giving yourself a hard time in any way, allowing your breath to be a safe place, something to help you return to the present moment, whenever you have wandered away from it (Pause)

And when you hear the bells, you can open your eyes

5. Homework Exercises:

Children are given the homework sheet and meditation CD and asked to listen to track one every day. Track one is the sitting breath meditation that was read during the session.

Child Session 3

Materials

Mindful bell

Small wedding bubble blowing kits.

Handouts

3.1 Homework Practice for Session 3 and Yoga positions handout

3.2 Challenging Events

Aims

To review homework and continue to reinforce the importance of homework

To continue to develop an understanding of the distinction between thoughts and feelings and how they interact

To practice mindfulness via sitting meditation and mindfulness bell during the session

To introduce Hatha Yoga as a mindfulness practice.

Agenda

Definition of mindfulness and designation of mindful bell

Sitting breath meditation and group discussion and homework review

Thoughts and feelings – part two

Bubble meditation

Yoga

1. Definition of mindfulness and designation of the Mindful bell

See session 1.

2. Sitting breath meditation and group discussion - review of homework

The sitting breath meditation will be practiced today in the session, and in the group discussion, the children will be given an opportunity to share their experiences of this meditation during the sessions and at home. Barriers to home practice need to be incorporated in a non-judgmental fashion. Children that participated in home practice go in the draw for a lucky dip. Some children may be finding it hard to stay focused during the sitting meditation and may resort to distracting others. This behaviour needs to be addressed in a non-judgmental fashion whilst at the same time, reinforcing the boundaries and group agreements about respecting others during this time. If children find it hard to meditate and don't refrain from distracting others, the children must be encouraged to actively problem solve ways for their behaviour not to impact on others whilst not judging their behaviour.

3. Thoughts and Feelings Exercise Part two

The children complete worksheet 3.2 Challenging Events and then share as a group. The group facilitators help the children to further distinguish between their thoughts and feelings. The relationship between thoughts and feelings is emphasised today.

4. Bubble Meditation

Adapted from Miller, Rathus and Linehan, 2007

Group facilitators pass out containers of bubble solution to group members. Members are asked to blow bubbles whilst at the same time focusing their attention on the

bubbles; noticing their shapes, textures, colours and so on. If they get distracted by other thoughts, they should gently bring their attention back to the process of bubble blowing. The activity is best done outside with all the children blowing their bubbles in the same wind direction. Group facilitators need to firmly remind the children of the group agreements so that the children are silent and don't distract each other.

5. Mindfulness in Hatha Yoga (Kabat-Zinn, 1990)

Hatha Yoga exercises involve gentle stretching, moving and holding positions with moment to moment awareness of the sensations in the body and breathing. The children are introduced to one exercise at the completion of every session. The children are encouraged to be very observant of their bodies and the limits of their bodies. The children are told to avoid pushing themselves beyond their limits and striving to make progress or reach goals. The yoga is a form of meditation rather than physical exercise although the activity does involve stretching and flexibility may increase. This week, two different positions will be introduced and in the following week, they will be repeated with an additional 2 positions (see attached diagrams of yoga exercises in Handout section).

Home Practice

The children are required to listen to Track 1 every day and practice the Yoga stretches.

Session 4

Materials

Mindful Bell

CD Player

Three tracks of diverse and emotionally evocative music

Handouts

4.1 Mindful Listening Worksheet

4.2 Homework practice and Yoga Positions worksheet.

Aims

To review homework and trouble shoot barriers to homework and mindfulness practice

To increase motivation to learn mindfulness definition and pay attention to it

To deepen understanding of identifying thoughts and feelings in difficult situations

To introduce feeling meditation where children are encouraged to be mindful of their present feelings and observe them in a non-judgmental way.

To mindfully listen to music, where children attend to their thoughts, feelings and bodily sensations whilst listening to music.

To continue practicing mindful Yoga

To introduce the concept of automatic thoughts

Agenda

Review homework and definition of mindfulness

Mindfulness bell

Choose a Feeling and Thought

Feeling Meditation

Mindfulness Listening Exercise and Group sharing

Yoga practice

Automatic Thoughts Part One

1. To review homework practice

To encourage children to keep up with their homework practice. At this stage, it is important to create some time for children who feel unable to practice mindfulness meditation at home and see if the barriers can be dissolved.

To review the definition of mindfulness, further encouraging the children to commit the definition to their memories. Prizes to be offered to those that can write down definition from memory.

2. Mindfulness Bell

See session 2

3. Feelings Exploration (choose a thought and feeling)

Children are again required to choose a feeling card (from the Andrew Fuller set) that depicts a feeling that they have experienced. The children then take turns in sharing the context and their thoughts around these feelings. Only uncomfortable feelings are made available for the children to select.

4. Feelings meditation

The feeling meditation is adapted from the Amy Salzman “Still Quite Place Mindfulness Audio CD”. The following script is read aloud to the children and is also Track 2 on the home practice CD.

You can do this practice sitting or lying down

The Still Quiet Place is not a place you travel to in a car or a bus or a plane. It's a place inside of you and you can find it just by closing your eyes.

Let's find it now

Close your eyes and take a few deep breaths – see if you can feel a kind of warm easy smile in your body - can you feel it?

This is your Still Quite Place.

Take some more slow deep breaths and really be there.

The best thing about your Still Quiet Place is that it's always inside you and you can visit it when ever you want.

It's nice to visit your Still Quiet Place and feel what is there.

It is especially helpful to visit your Still Quiet Place if you are feeling angry, sad, afraid, confused, worried or even bored.

The Still Quite Place is a good place to talk with these feelings and to make friends with them.

When you rest in your Still Quiet Place and talk to your feelings, you may find your feelings are not as big or powerful as they seem.

Sometimes it can be helpful to meet our feelings in the Still Quite Place.

You can begin by feeling your breath in the place where it feels strongest for you.

PAUSE – 5 sec

When you are ready say hello to whatever you are feeling right now.

You may want to ask your feeling its name.

Feelings may have names like shy, bored, happy, upset or more unusual names like stormy, bubbly, fiery, and empty.

Let the feelings tell you its name

Quietly say hello

Now notice where the feeling is in your body

Is it moving in your belly?

Is it sitting in your chest?

Is it hiding in your toe or the bend of your elbow?

PAUSE – 5 sec

Notice what colour the feeling is – bright red – dark brown – deep blue.

Maybe it's a mixture of colours

PAUSE- 5 sec

Notice how the feeling feels – is it soft or hard? – Heavy or light? Is it closed or open?

PAUSE – 5 sec

Listen and hear if the feeling has a sound. Does it whisper or laugh? Scream or groan?

PAUSE – 5 sec

Now ask the feeling what it needs and listen very carefully to its answer.

Maybe it wants to draw a picture or talk to someone or maybe it just needs some love - a hug or some understanding.

See if you can give the feeling what it needs

PAUSE – 5 sec

Remember you can make friends with any feeling by sitting with it in your Still Quiet Place. End.

Mindful Listening Exercise (Semple, Lee and Miller 2006)

The children are encouraged to further differentiate between thoughts, emotions and physical sensations by listening to short 30 second segments of diverse types of music with their eyes closed and then write down notes about their experiences on the Mindful Listening Worksheet. When the exercise is completed, the children share their different experiences and the group members are encouraged to listen with no judgment and acceptance (See 4.1 Mindful Listening Worksheet).

Yoga Practice

Two more yoga positions are introduced

Automatic Thoughts Part One

The introduction of Automatic Thoughts is adapted from the MCBT program c and adapted for children.

Facilitators introduce discussion about automatic thinking by using the analogy of riding a bike. When riding a bike, we can sometimes ride for a long time “on automatic pilot” without really being aware of what we are doing, just riding the bike. In the same way as riding a bike without really having to be aware of it, our thoughts are often just running along automatically without us really being aware of what we are thinking.

When our thoughts are just running along, without us really being aware of it, we can be thinking unhelpful thoughts which may lead to uncomfortable feelings. If we can work on becoming aware of our thoughts, feelings and body sensations, we can be free to

choose more helpful thoughts rather than just thinking the same old unhelpful thoughts that our minds are in the habit of thinking.

One way to help us become aware of unhelpful thinking is to notice the unhelpful thoughts that we have gotten into bad habits of thinking all the time. The facilitators then take time to write down some examples of unhelpful automatic thoughts on the white board. Examples are adapted (simplified and made relevant for children) from by Segal, Williams and Teasdale (2002) MCBT program Automatic Thoughts Questionnaire:

I feel like the world is against me
I'm no good
No one understands me
I wish I were better
Nothing feels good
I'm bored
This is too hard
What's wrong with me?
I hate myself
I'm not worth much
I wish could disappear
I'm bad
I'm a loser
I'm a failure
There is something wrong with me

The children are then asked to suggest examples of possible negative automatic thoughts to add to the list. These are written down on the list.

A Diffusion technique is then used from ACT, where children are asked to come up with their own negative thought, and follow the prompts written on the whiteboard

I am.....

I have a thought that I am.....

I am noticing the thought that I am.....

Children are asked to rate how distressed from 1 to 10 that they feel after they say their statement following each prefix and notice any differences. Some children may notice that when they say the thought after I am noticing the thought that I am, they feel less distressed.

The facilitator then suggests to the children that these negative thoughts can be seen in a number of different ways. The children are reminded that these statements are just thoughts, not the truth. When we realize that these thoughts are not the truth, we can let them go.

8. Homework

Homework worksheet 4.2 is given out. Children are asked to listen to Meditation CD Track 2 (Feelings meditation) every day for a week and practice the new Yoga positions (diagrams on are on the worksheet).

Parent Phone Consult:

Materials

None

Handouts

None required

Aims

To encourage the parent to support the child's participation in the program

Agenda

Discussion about child's participation in the program

Parent Participation

Discussion about child's participation in the program

Parent Participation

Child Session 5

Materials

Mindful Bell

Bubble kits

Handouts

5.1 Homework worksheet

Aims

To introduce the body scan meditation

To help children identify their own negative automatic thoughts and to become less attached to their truth or significance.

To help children to use meditation to observe their negative automatic thoughts and let them go

To introduce the mindful walking meditation

Agenda

Definition of mindfulness, reviewing the homework and handing out the mindfulness bell.

Introduction to the Body Scan

Automatic Thoughts Part Two

Bubble Meditation and Automatic Thoughts.

Homework

1. Definition of mindfulness, homework review and mindfulness bell

A prize is awarded to the person who can verbally reproduce the mindfulness definition exactly. Homework practice is discussed, and those who have been practicing go into the lucky dip prize draw. The mindfulness bell is handed out.

2. Introduction to the Body Scan

Being in Your Body – The Body Scan Meditation Technique (Kabat-Zinn, 1990)

The purpose of the Body Scan Technique is to re-establish contact without bodies.

Kabat-Zinn (1990) argues that many of us are preoccupied with the appearance of our own body but at the same time, out of touch with the experience of being in our bodies.

Our thoughts about our body can reduce the range of feelings we allow ourselves to experience. Focusing on experiencing our body is a Practice that moves away from the judgmental thinking about it giving rise to our shifting our own view of it and yourself.

During this exercise, the children practices thorough and minute focus on their body which is an effective technique for developing both flexibility of attention and concentration.

The children are asked to lie on their backs and move their mind through the different regions of their body. The children are guided through this process by the group facilitator. The children are encouraged to feel each region and stay in that region with their mind right on it, or in it. If the children do not feel anything in the region of their body, they are asked to just focus on “not feeling anything” in

that region. The children are asked to breathe into or out from each region. They are asked to feel and imagine the tension in each region flowing out on each out breath and breathing in on the in breath, energy and relaxation. At the conclusion of the body scan, the children are allowed to dwell in silence and stillness in an awareness that may have by this point gone beyond their body altogether. The children are encouraged to return to their body to sense it as a whole.

The script was adapted from Kabat-Zinn 1990 script for adults:

Body Scan script (Kabat – Zinn, 1990):

Lie down, making yourself comfortable. You can lie on your back on the floor or at home, you can do this on your bed. Make sure that you are in a place where you will be warm and no one will disturb you.

Take a few moments to notice your breathing and the feelings in your body. When you are ready, bring your attention to the physical sensations in your body, especially to the sensations of touch or pressure, where your body makes contact with the floor or bed. On each out-breath, allow yourself to let go, to sink a little deeper into the mat or bed. Now bring your attention to the physical sensations in your lower stomach, becoming aware of the changing patterns of sensations in the stomach as you breathe in, and as you breathe out. Take a few minutes to feel the sensations as you breathe in and as you breathe out.

Now notice these feelings again in your hips and bring your attention down to your legs, into the feet and out to the toes of the feet. Focus on each of the toes in your feet in turn, bringing gentle curiosity to the sensations you find, perhaps noticing the sense of contact between the toes, a sense of tingling, warmth or no particular sensation.

When you are ready, when you breathe in, feel or imagine the breath entering the lungs, and then passing down into the abdomen, into the legs, feet and out to the toes of the feet. Then, as you breathe out, feel or imagine the breath coming all the way back up, out through the feet into the legs up through the stomach, chest and out through the nose. As best you can, continue this for a few breaths, breathing down into the toes, and back out from the toes.

Continue to bring your attention to the physical sensations in each part of the rest of the body in turn – to the upper legs, your back, stomach, chest, fingers, hands, arms, shoulders neck, head and face. In each major area, “breathe in” to that part of the body and then allow your breath to move back out of that area.

When you become aware of tension or uncomfortable sensations in a particular part of the body, you can breathe in to the tense or uncomfortable part, bringing your attention to that part of the body and then breath out, letting go, and releasing your breath out of your body.

You might start thinking about things other than the breathing and your day. When this happens, notice what you are thinking and then move your attention back to the body and the breath.

After you have scanned your whole body in this way, spend a few minutes being aware of a sense of the body as a whole, and of the breath flowing freely in and out of the body.

Automatic Thoughts Part Two

The children are asked to write down one negative automatic thought on a small piece of paper (provided). The children are asked to keep their negative thoughts private and as a group take turns in ripping up the paper saying:

“This thought is only true to me, it is not the truth. When I say it is not true, I can let it go” (this statement is written on the whiteboard. The child reads out the statement while they rip up the piece of paper and throw it in the bin.

Bubble meditation and automatic thoughts

The children are asked to place their thoughts into the bubbles and watch them float away. The children are asked to pay attention to negative automatic thoughts and put these in the bubbles and watch them float away. The group discusses their individual experiences.

5. Homework assignment

The children are asked to listen to Tracks 1, 2 or 3 this week. On the homework handout for this week (5.1), the children are asked to write down which meditation they chose for each day.

Child Session 6

Materials

Mindful Bell

Objects for Judgment / Observation exercise

Flip box for Judgment / Observation exercise

Handouts

6.1 Homework

6.2 Breathing space script

6.3 Judgment / Observation Worksheet

Aims

For the children to start to think about what they are gaining from the program through group sharing. The children are asked to discuss their favourite meditation and why and speak generally about their experiences to this point in the program.

To introduce the breathing space meditation that can be used in challenging situations

To reinforce the distinction between judgment and observation by the judgment observation exercise

To introduce mindful walking

Agenda

Mindful definition, review homework and hand out bell

Introduction to Breathing Space Meditation

Practicing Yoga

Judgment / observation exercise

Walking meditation

Homework

1. Mindful definition, review homework and hand out bell

Children are asked to name their favourite meditation and why. They are asked to take turns to do this in the group sharing. Children are given the opportunity to write the mindfulness definition on the white board. The mindfulness bell is handed out to a child that hasn't used it yet. The children are asked to speak generally about their experiences of the group so far.

2. Introduction to Breathing Space Meditation

The Breathing Space Meditation (Segal et al 2002) is a technique that the children can learn to use as a way to pause and gather themselves in the midst of troubling situations. The breathing space can be seen as a chance to become present. The idea of focusing our awareness of body sensations is emphasised in this exercise. Thus, the 3-minute breath meditation now has an added component where the children allow their attention to expand to their whole body. To practice the breathing space, the children are asked to imagine something difficult that has troubled them in the past week and guided through the following:

Breathing Space Script

Place your attention in your breathing – noticing yourself breathing in and breathing out.

Allow your attention to expand to your whole body – especially to any sense of discomfort, tension.

If these sensations are there, then take your awareness there by “breathing into them”.

Then breathe out from those sensations.

Say to yourself on the out breath, “It’s OK, Whatever it is, it’s okay. Whatever it is, it’s okay, let me feel it”.

Practicing Yoga

Children take turns to demonstrate their favourite yoga poses as the group practices each pose demonstrated. The facilitators allow the children to run this segment as a way of encouraging the children to take ownership over the mindfulness strategies.

Judgment / observation exercise

Non-judging is described by Kabat Zinn (200?) as one of the fundamental attitudinal foundations of mindfulness. To cultivate the stance of mindfulness, a person becomes an impartial witness to their own experience. For this to occur, the person must become aware and learn to step back from the constant stream of judging and reacting to their own inner and outer experience. Almost everything that humans encounter are categorised by the mind in terms of its value to us. For example, something might be judged as good, and another thing might be judged as bad. Everything else is considered neutral and not attended to by our consciousness. These judgments have a tendency to dominate our minds and are at odds with us having any peace within ourselves (Kabat-Zinn, 200?).

When we assume the stance of impartial witness to our experiences, we are observing rather than judging. When we observe, we are taking a more neutral stance to what comes into our awareness (Kabat-Zinn, 200?).

The purpose of this exercise is for children to distinguish between concepts of judgment versus observation. A judgment is an interpretation of a direct perceptual experience (e.g. the flower smells lovely or the girl is nice), whereas, an observation is closer to a description of a direct perceptual experience (e.g. the flower smells like strawberry or the girl has green eyes). Several objects are placed inside a flip box and the children take turns in feeling the object and description (without labelling the object) different aspects. The other children write down what the child says in two columns (see Worksheet 6.3) titled ‘Judgment’ and ‘Observation’. The task for the children is also to guess the object inside the box which is awarded with prizes.

Walking meditation

The mindful Walking Meditation was adapted from Kabat-Zinn (1990) for adults. This exercise aims to provide another opportunity for the children to practice mindfulness and bring awareness into their daily life. Usually, we walk for a reason, mostly to go from one place to another and the mind tends to focus on where it wants to go. In walking meditation, the children are asked to intentionally attend to the experience of walking itself. This involves focusing on sensation in their legs and feet and the feeling

in the whole body, noticing the feeling of the feet contacting the ground, the shifting of weight on their feet. If the mind wanders away from the feet or the legs or the feeling of the body walking, the children are asked to notice where their mind has wandered to, and then bring their attention back to their feet or legs or the feeling of the body walking. The children are told not to look at their feet, but to become internally aware of the sensation of walking, nothing more. To reinforce to the children that they are not trying to get anywhere, they are instructed to walk in circles around the room or back and forth from wall to wall. The children are instructed to walk slowly to deepen their awareness.

Homework

Children are asked to listen to track 4 each day. Children are asked to remember to use the breathing space meditation in challenging situations (see Homework work sheet 6.1 and 6.2 for the breathing space script)

Child Session 7

Materials

Optical Illusion postcards
 Mindfulness Bell
 Prizes / Rewards
 Analogue Clock
 Posters for Mindfulness Corners Game
 Pages from Mindfulness Story (See Worksheet 7.3)

Handouts

7.1 Home practice Worksheet
 7.2 Optical Illusion Worksheet
 7.3 Mindfulness Story

Aims

For the children to continue thinking about what they have gained from the program through group sharing.

To discuss the children's home practice experiences with using the breathing space meditation in challenging situations.

To use the optical illusion exercise to demonstrate that thoughts are not necessarily facts.

To plan the final session and party

To introduce a clock meditation

Agenda

Definition of mindfulness, homework review and rewards

Optical Illusions Exercise– thoughts are not facts

Clock Meditation

Mindfulness Game: Mindfulness Corners

Discussion and planning for final week

Breathing space meditation

Homework Practice

1. Mindful definition, review homework and hand out bell

Children are asked to discuss their experiences in using the breathing space meditation during challenging situations (asked to do for home practice). They are asked to take turns to do this in the group sharing. Children are given the opportunity to write the mindfulness definition on the white board. The mindfulness bell is handed out to a child that hasn't used it yet. The children are asked to continue to speak generally about their experiences of the group so far.

2. Optical illusions exercise (Semple and Lee and Miller 2006).

This exercise invites the children to explore the concept that even their perceptions are not necessarily fact. That even though they perceive the illusion as moving, it is not really moving. The children are asked to generalise this concept to other examples in their life where their perceptions are not necessarily fact.

Children are given a number of optical illusion pictures and asked to complete the optical illusion worksheet in pairs. They are asked to describe what they can see and write down what is true about the picture. They are then asked to write down “What thoughts are not facts?” A group discussion follows where the children share their answers (See Worksheet 7.2).

3. Clock Meditation: More about thoughts:

In this exercise, the children are challenged to think about their thinking in the moment. Previous exercises have challenged children to think about their thoughts retrospectively and in the meditation exercises, children have been asked to become aware of their thoughts and redirected their attention back to the breathing.

In this exercise, the children are asked to watch the second hand of a large analogue clock for one minute. During that minute, the children may notice thoughts or images. When they notice these thoughts or images, they are instructed to return their attention back to the second hand. On completion of the exercise, the children will share what they noticed.

Mindfulness Game: Mindfulness Corners:

The children play a game where they walk or dance around the room until the music stops and when the music stops, they choose to stand in one of the four corners of the room. Each corner of the room has a mindful symbol indicating the children to be mindful of one sensory modality. The modalities are smell (as indicated by a picture of a nose), sight (as indicated by a picture of an eye), sound (as indicated by a picture of an ear) and feeling (as indicated by a picture of a body). The children at each post describe their mindful experiences when the music stops. Children are then selected to go into the next round by throwing a large mindfulness dice (with similar pictorial modalities plus two wild symbols which represent all children going through to the next round). The game continues until a winner is determined who is awarded a prize by group leaders.

Discussion and planning for final week:

The children are each given a page of the mindfulness story and asked to illustrate the story so a coloured print out can be made for them to keep in the final week. The children then plan the party. The party must include games with a mindfulness theme. The group facilitators agree to provide food and drink as appropriate.

Breathing space meditation:

Following this brief meditation, the children are asked to share their experiences of meditation with the group. As always, the leaders encourage the children to share all of their experiences in a non-judgmental manner.

Homework Practice

Children are asked to choose one mindful practice to do per day and illustrate their designated page from the mindfulness story.

Child Session 8

Materials

Colour photocopy of Journey Into Mindfulness illustrated by the children

Prizes

Individual certificates

Handouts

No handouts this week

Aims

Homework review

Overview of themes covered

Agenda

Mindful definition, review homework and hand out bell

Overview of program – group sharing

Mindfulness Games / Activities (selected by children in week 7)

Party

Breath meditation

Feedback

1. Mindful definition, review homework and hand out bell

Children are asked to discuss their experiences in using the breathing space meditation during challenging situations (asked to do for home practice). They are asked to take turns to do this in the group sharing. Children are given the opportunity to write the mindfulness definition on the white board. The mindfulness bell is handed out to a child that hasn't used it yet. The children are asked to continue to speak generally about their experiences of the group so far.

2. Overview of program – group sharing

Lucky dip box reward for children that completed homework 4/4 times

Overview of themes covered and opportunity for children to reflect in a group discussion

Children share with each other in pairs and then we take turns for the pairs to share with the whole group.

3. Mindfulness Games / Activities (selected by children in week 7)

Children complete program assessment and questionnaire forms.

4. Party

The party will give the children an opportunity to practice mindfulness in a more unstructured situation. The children will be instructed to think about eating mindfully.

5. *Breath Meditation*

20 minute seated breath meditation

Described in session 1 and via CD.

6. Feedback

Children are given an opportunity to give feedback about their participation in the program and suggest possible changes for future groups. Feedback and assessment questionnaires completed

Parent Session 2

Materials

Assessment materials

Aims

To conduct parent assessment of child

To gain qualitative feedback as to the child's progress and participation in the program from the parent

To feedback to the parent about the child's progress

To discuss further support for the child as necessary

Agenda

1. Child assessment
2. Qualitative feedback re: progress
3. Feedback to parent
4. Further support

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Section 5: Handouts

Session 1 Handout 1

A Definition of mindfulness

Mindfulness means paying attention in a particular way:

on purpose,

in the present moment,

and nonjudgmentally.

---Jon Kabat-Zinn

Session 1 Handout 2

Homework Practice – Session One

With the help of a parent, stick your mindfulness poster above your bed or on the back of your bedroom or toilet door (or some other place where you are sure to notice it each morning). When you see the poster each morning, take 3 mindful breaths.



Session 1 Handout 3

My Values

What do I like doing in my life?

What is important to me in my life?

If I could change anything, what would I change?

How would I like other people to be different?

What feelings would I like less of?



Session 2 Handout 1

Homework practice Session Two

Listen to Track One of the CD at least once every day.



Session 2 Handout 2

Pleasant Events

Name: _____

Write down the things that happen that have you feel pleasant, okay, happy or relaxed. Write down exactly what happened by answering the questions.

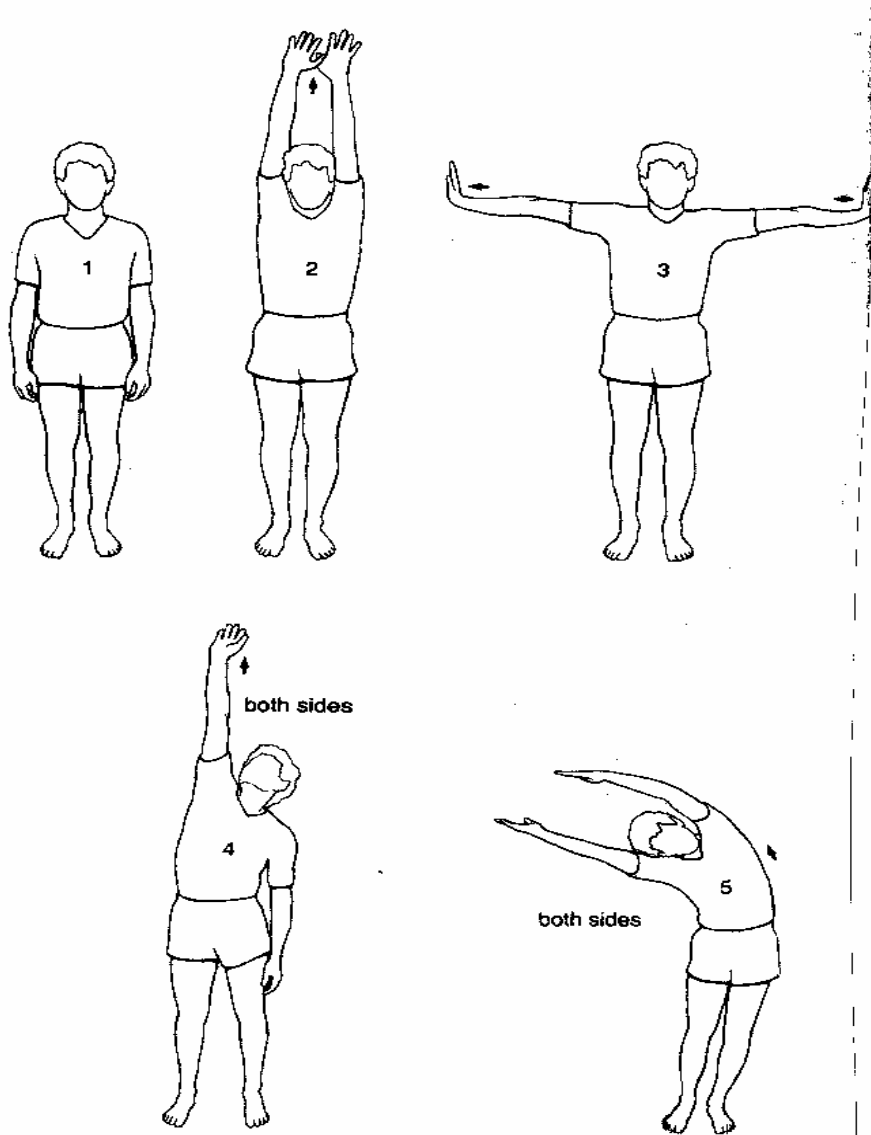
Situation What happened in the situation?	Thoughts What did you think about it?	Feelings How did it feel to be in this situation?
Situation	Thoughts	Feelings
Situation	Thoughts	Feelings
Situation	Thoughts	Feelings

Session 3 Handout 1

Homework practice for Session three

Listen to the mindfulness CD track 1 every day and practice the
Yoga movements (see handout)

Yoga Positions:



Kabat-Zinn, J. *Full Catastrophe Living: Using the Wisdom of Your Body and Mind to Face Stress, Pain, and, and Illness*. Random House: New York. p.110.

Session 3 Handout 2

Challenging Events

Name: _____

Situation What happened in the situation?	Thoughts What did you think about it?	Feelings How did it feel to be in this situation?
Situation e.g. My friend said "I want to play with someone else today"	Thoughts I thought that my friend was being mean to me	Feelings Angry, upset and hurt
Situation	Thoughts	Feelings
Situation	Thoughts	Feelings

Session 4 Handout 1

Mindful Listening**What are you noticing RIGHT NOW?**

Name: _____

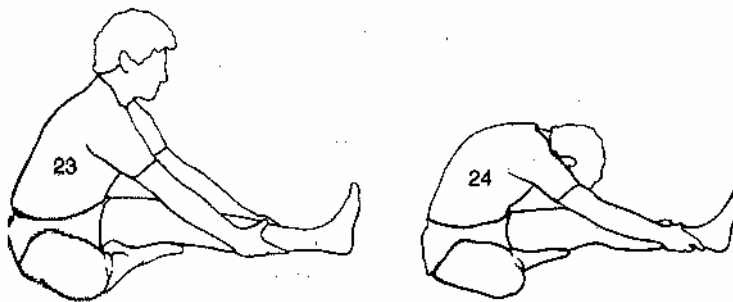
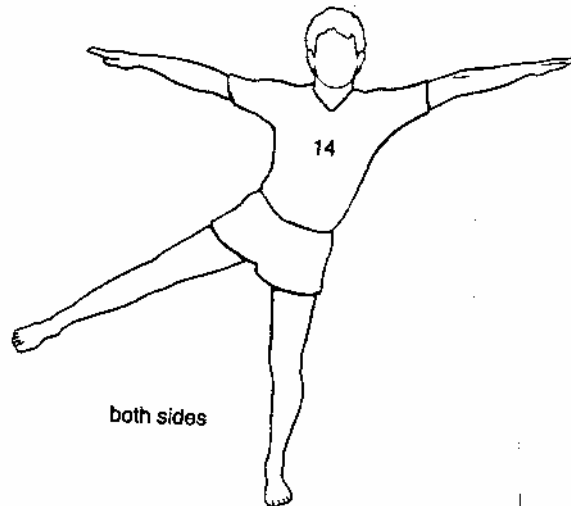
Write down your thoughts (e.g. "I don't like this, this is cool")	Write down your feelings (e.g. "happy", "excited", "sad", "bored")	Write down your body sensations (e.g. "rumble in stomach", "pain in toe", "butterflies in stomach")
Track One		
Track Two		
Track Three		

Session 4 Handout 2

Home Practice and Yoga Positions

Listen to Meditation CD Track 2 (Feelings meditation) every day for a week. Remember to practice the new Yoga Positions.

Yoga Positions



repeat 22 to 24 on other side

Kabat-Zinn, J. *Full Catastrophe Living: Using the Wisdom of Your Body and Mind to Face Stress, Pain, and, and Illness*. Random House: New York. p.112-113.

Session 6 Handout 1
Homework for Session Six

Practice using the Breathing Space at times you find challenging

Listen to Track 4 of the CD to practice the Breathing Space

Session 6 Handout 2

Breathing Space Instructions

Place your attention in your breathing – noticing yourself breathing in and breathing out.

Allow your attention to expand to your whole body – especially to any sense of discomfort, tension.

If these sensations are there, then take your awareness there by “breathing into them”.

Then breathe out from those sensations.

Say to yourself on the out breath, “It’s okay, Whatever it is, it’s okay. Whatever it is, it’s ok, let me feel it”.

Session 6 Handout 3
Judgment observation exercise

Name _____

Judgment Object Label	Observation
Object Label	
Object Label	
Object Label	

Session 7 Handout 1
Homework practice for Week Seven

Practice the sitting breathing mediation every day

Session 7 Handout 2
Optical Illusion Worksheet

Optical Illusion Work Sheet

Name_____

Choose two pictures and answer the following questions.

Picture One

Describe what you can see:

What is true about this picture?

What thoughts are not facts about this picture?

Picture Two

Describe what you can see:

What is true about this picture?

What thoughts are not facts about this picture?

Session 7 Handout 3

Mindfulness Story

Page One

Journey into Mindfulness

Once upon a time, there was a boy who felt angry, sad and worried all the time.

He thought that he was a bad person and he thought he wasn't worth much.

He thought people didn't like him and they were against him.

He thought life was very unfair to him.

He worried about talking in front of the class in case people would laugh at him.

Page Two

The boy was asked to join the Mindfulness group. The boy found the group helpful.

Page Three

The boy learnt to meditate by noticing his breath. When the boy got distracted and started to think about other stuff, he would catch himself. He would notice the stuff he was thinking and then focus on his breath again.

Page Four

The boy learnt to notice what body sensations (e.g. pain, tingling, stomach rumbling) he was having at any given time in his body.

The boy learnt to notice his feelings.

The boy learnt that if he could notice his feelings and bodily sensations and accept them, they would start to get smaller.

Page Five

He was very happy about his uncomfortable feelings getting smaller, so, he started to notice and accept them more and more.

He learnt that when he got angry, sad, scared or worried, he could say "hello" to the feeling and it would get smaller.

The boy learnt to say "hello" to all feelings whether they be happy, sad, angry or worried.

Page Six

The boy then learnt to think about his thinking.

"What am I thinking right now?" He started to ask himself.

The boy learnt that he was not his thoughts.

The boy started to realise that his thinking about situations could upset him.

The boy learnt to pay attention to helpful thoughts that made him feel confident and happy rather than unhelpful thoughts that made him feel sad, worried or angry.

The boy paid attention to helpful thoughts.

Page Seven

The boy started to notice some unhelpful and negative thoughts called 'Negative Automatic thoughts'. The boy was having 'Negative Automatic thoughts' like: "No-body loves me" or "I'm bad".

The boy soon learnt that Negative Automatic thoughts happen to everyone and make everyone feel sad, angry, worried or upset.

The boy also realised that the 'Negative Automatic thoughts' are not true. He realised that he was the only one who thought that they were true.

When the boy realised that the 'Negative Automatic thoughts' were not true, he decided to let them go.

The boy pretended to put the Negative Automatic thoughts in some bubbles and watched them float away.

When he noticed them again and again and again, he would just notice them and watch them float away

The boy soon learned that judgements are opinions about things and are not fact. He learned that direct

observations are more factual and people agree more about them. He realised that some of his thinking were

judgments about things and not facts. When the boy got upset, he practised making some direct observations and also noticed his judgements.

Page Eight

The boy felt more peace he his life.

He was able to practice his meditation more.

He was able to pay attention to his breathing in the present moment.

He was able to live in The Now - the present moment.

He was able to concentrate without as many things distracting him.

He realised things did not bother him as much as they did before.

He realised that he was happier and less angry, sad and worried.

Page Nine

When his friend's became upset, he became the person they went to for help and advice.

He didn't forget to keep up his meditation practice, and when things went wrong, he found someone to talk to about it. The boy was using mindfulness