The Impact of Guided Meditation on Children's Behaviour, Mental Health and Well-being

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Abstract

Mental health problems amongst Australian children and adolescents are a significant public health problem. Prevention programs and interventions in primary and secondary schools using meditation may be an effective approach in helping to reduce mental health burdens. An increasing number of schools are using meditation to support the cognitive, social and emotional development of their students.

Limited research has been conducted on the use of meditation in primary schools, and even fewer studies have incorporated rigorous methodologies. The current study aimed to contribute to the limited body of knowledge on the use of guided meditation in primary schools using a randomised controlled trial. It investigated the effectiveness of guided meditation as a school-based program for improving mental health outcomes in a non-clinical population of children aged 10 to 12 years.

A total of 374 grade 5 and 6 children were recruited from three primary schools in metropolitan Melbourne. Classes were randomly assigned and received either 10 minutes of guided meditation or reading (the control activity) daily over 8 consecutive weeks. The children completed pre and post self-report surveys to assess their behaviour, mental health and well-being.

Initial results indicated that children in the guided meditation group did not experience greater reductions in emotional problems, conduct problems, hyperactivity-inattention, and peer problems, and greater improvements in prosocial behaviour and self-esteem than the children in the control group. However, when the sample was separated into severity groups and both the control and guided meditation groups were combined, the children with a clinical presentation experienced greater reductions in each of the outcome measures. The hypothesis that the effects of guided meditation would be stronger for children

with a clinical presentation than children with normal mental health ratings was partially supported. Finally, children who had practised regular meditation did not experience even greater improvements in behaviour, mental health and well-being than first time meditators.

Qualitative data suggested that guided meditation was beneficial and therapeutic. The teachers reported that the children were focused, calm, quiet, settled, rested, and listened after guided meditation, and the practice provided them with time for reflection, and an opportunity to learn the skills of relaxation, stillness, and switching off.

Unexpectedly, the results demonstrated that both guided meditation and reading were effective in improving the behaviour, mental health and well-being of children with a clinical presentation. This preliminary evaluation highlighted that both guided meditation and reading conducted in primary schools have the potential to be effective mental health promotion initiatives to create better mental health outcomes for children.

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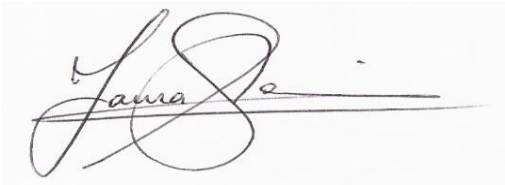
Declaration

I declare that this thesis contains no material which has been accepted for the award to the candidate of any other degree or diploma, except where due reference is made in the text of the thesis.

I declare to the best of my knowledge that this thesis contains no material previously published or written by another person except where due reference is made in the text of the thesis.

I declare that where the work is based on joint research or publications, this thesis discloses the relative contributions of the respective workers or authors.



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Chapter 1: Introduction

There has been widespread and growing use of meditative practices in clinical and research settings (Kristeller & Rikhye, 2008; Sedlmeier et al., 2012; Shapiro & Walsh, 2003). Meditation is also making its way into popular culture and has recently become a common topic of discussion often featured in cover articles of popular and scientific journals, and is now regularly discussed in newspaper articles on science, lifestyle, and health (Shear, 2006). In particular, there has been a rise in interest amongst consumers and health professionals in a particular type of meditation called mindfulness (Manocha, 2011), and this has helped to raise the profile of meditation.

Part of the reason for the interest in meditation is because it has been found to be effective in treating mental health problems such as anxiety and panic disorders (Kabat-Zinn et al., 1992), depressive symptoms (Steiner, Sidhu, Pop, Frenette, & Perrin, 2013), conduct problems (Barnes, Bauza, & Treiber, 2003), and Attention Deficit-Hyperactivity Disorder (Harrison, Manocha, & Rubia, 2004). In recent years, meditation has received significant attention as a potential approach in the treatment of mental health disorders because it is cost-effective and relatively free of side effects (Rubia, 2009). Psychologists, health professionals and consumers are therefore using meditation as a way to reduce mental health problems.

The mental health profession has effectively described what poor mental health represents in childhood (Bernard, Stephanou, & Urbach, 2007). This includes internalising problems such as anxiety and depression, externalising problems such as oppositional defiance, conduct disorders, and Attention Deficit-Hyperactivity Disorder (ADHD). Evidence continues to grow regarding the extent of mental health problems in Australian children and adolescents (Bernard et al., 2007).

In the first epidemiological study to outline the prevalence of child and adolescent mental health problems at a national level in Australia, it was reported that 14.1% of children and adolescents from 4 to 17 years of age had mental health problems (Sawyer et al., 2001). In this Australian survey, the most common disorder among 6 to 17 year olds was ADHD at 11.2%, while depression and conduct disorders were both found in 3% of this population.

In a recent Australian nationwide study with a cross-sectional sample of more than 10,000 students ranging from grade 2 to year 12, it was revealed that large percentages of students in Australian schools are experiencing social and emotional difficulties (Bernard et al., 2007). It was found that 40% of students reported worrying too much, 30% reported being very nervous and stressed, 20% reported feeling hopeless and depressed for a week and stopping regular activities, and 40% said that they had difficulty calming down. One third of all students reported that they lost their temper a lot and were sometimes quite mean to other people.

It is clear that mental health problems among children and adolescents pose an important public health problem in Australia. The financial, social and personal burdens of these mental health problems are considerable (Zubrick, Silburn, Burton, & Blair, 2000). Prevention programs have been recommended in Australia to address the high prevalence of mental health issues in children and adolescents (Zubrick et al., 2000). The World Health Organisation completed a systematic review of programs that promoted mental health in schools, and concluded that health promotion in schools can improve children's health and well-being (Stewart-Brown, 2006). There is growing evidence that supports the effectiveness of early intervention in reducing later mental health burdens (Zubrick et al., 2000). As suggested by Britton et al. (2014) broader interventions targeting large, non-clinical groups may assist in the prevention of mental health issues before they reach clinical severity. Developing prevention programs and

interventions in schools using meditation may be an effective approach in helping to reduce the mental health burdens.

Schools are increasingly interested in developing the whole child, and are starting to spend more time developing the emotional well-being of children instead of concentrating solely on academic achievement (Rempel, 2012). Schools can play a vital role in health promotion by offering mental health prevention programs to a wide audience. As suggested by Joyce, Etty-Leal, Zazryn, Hamilton, and Hassed (2010) mindfulness education can be an important addition to mental health promotion programs in schools. A number of primary and secondary schools are utilising meditation to support the cognitive, social and emotional development of their students (McLean, 2001). Children spend a great deal of time in school, therefore this is an opportune setting for children to learn meditation practices (Rempel, 2012). Meditation offers a safe practice that is easy to learn and basically costs nothing once students have been trained in the techniques of meditation (Schaub, 2011). Incorporating the use of meditation practices in schools may be a valuable way of improving the mental health and well-being of children.

Since the 1960s, meditation has been the focus of increasing scientific research (Kristeller & Rikhye, 2008; Sedlmeier et al., 2012; Shapiro & Walsh, 2003), however research into the clinical application of meditation effects is certainly in its infancy (Rubia, 2009). With the growing interest in meditation, there is an increasing number of studies investigating the impact of meditation, however much of the research that has been conducted has used university students and adult samples. As explained by Thompson and Gauntlett-Gilbert (2008), the majority of research that has demonstrated the effectiveness of mindfulness has been conducted in adult populations. Interest into the clinical applications of mindfulness-based approaches with adults has grown particularly in recent times, however research with children and adolescents is still in its early stages (Burke, 2010). There are few published studies on meditation with children and

adolescents (Campion & Rocco, 2009). Some of the meditation research with children has focused on the use of meditation with treatment populations, for example, children with ADHD or emotional and behavioural problems. Little research has been conducted in mainstream primary school settings with non-clinical populations.

In the meditation literature, much of the focus is on transcendental meditation and mindfulness meditation, despite the fact that there are a wide variety of different meditation techniques. The numerous types of meditation will be discussed in Chapter 2. In particular, interest in the use of mindfulness with children is emerging (Burke, 2010; Greenberg & Harris, 2012; Meiklejohn et al., 2012). Currently however, there appears to be no research conducted on guided meditation with children, and no clinical trials to date examining the use and impact of guided meditation on the mental health and well-being of children in primary schools.

Whilst the use of meditation with children is still in its infancy, there is emerging evidence that meditation is associated with improvements in a wide range of mental health outcomes. The benefits of meditation for children include decreased emotional problems (Harrison et al., 2004; Joyce et al., 2010; Steiner et al., 2013), conduct problems (Barnes et al., 2003), peer problems (Harrison et al., 2004), hyperactivity, inattention and impulsivity (Harrison et al., 2004), and greater prosocial behaviour (Steiner et al., 2013), and self-esteem (Harrison et al., 2004).

Campion and Rocco (2009) explain that while various studies point to the benefits of meditation for children, this literature remains limited, with few studies using rigorous scientific methodologies. For example, few randomised controlled trials have been completed on meditation (Manocha, 2011). The current body of literature on meditation with children, adolescents and adults is also inconsistent

in that studies vary in sample sizes, methodology, and the types of meditation used which makes direct comparison difficult.

As explained by Hartmann and Vlieger (2012) our knowledge of the possible benefits of meditation with children is compromised by methodological limitations. This area of research would definitely benefit from high-quality studies with larger sample sizes, standardised interventions and consistent outcome measures. In order to advance our knowledge and understanding of meditation and its potential use with children, larger trials with more rigorous study designs are necessary.

As most of the research on meditation has focused on adult samples or children from treatment populations and little research has been conducted with children from non-clinical populations in mainstream primary schools, this research project aimed to contribute to the limited body of knowledge on the use of guided meditation in primary schools with grade 5 and 6 children[1] using a randomised controlled trial. By utilising a randomised controlled trial and randomly assigning grade 5 and 6 classes to receive either a guided meditation intervention or act as a control group, this research study also aimed to investigate the effectiveness of guided meditation as a school-based program for improving mental health outcomes in a non-clinical population of children aged 10 to 12 years.

While other types of meditation in the literature have found positive effects on mental health measures for children (Barnes et al., 2003; Harrison et al., 2004; Joyce et al., 2010; Steiner et al., 2013), there is currently no research exploring the use of guided meditation for improving the mental health outcomes of children. Therefore, this research study aimed to examine the impact of guided meditation on primary school children's behaviour, mental health and well-being using

[1] Grade 5 is the sixth year of school in Australia and Grade 6 is the final year of school before children enter secondary school.

measures of emotional problems, conduct problems, hyperactivity-inattention, peer problems, prosocial behaviour, and self-esteem.

Given the lack of literature comparing the effects of meditation on children with normal mental health ratings and clinical mental health ratings, the current study also aimed to explore whether guided meditation was more effective for primary school children with a clinical presentation than children with normal mental health ratings.

And finally, as researchers have demonstrated the cumulative effects of meditation on attention with adult samples (Sabel, 1980; Valentine & Sweet, 1999), the current study aimed to investigate if children who have practised regular meditation experience an even greater reduction in emotional problems, conduct problems, hyperactivity-inattention, and peer problems, and greater improvements in prosocial behaviour and self-esteem than first time meditators.

To achieve these objectives a randomised controlled trial was conducted with a sample of 374 grade 5 and 6 children from 3 primary schools in metropolitan Melbourne. Classes were randomly assigned to a guided meditation group or a control group, and children completed 10 minutes of guided meditation or reading daily over 8 consecutive weeks. Data were collected at two time points, that is, the children completed self-report surveys before the guided meditation and control programs commenced, and after the completion of the eight-week programs.

Overview of the Thesis

This thesis is organised into eight chapters. Chapter 1 outlines the purpose of the current study and arrangement of the thesis. A review of the relevant literature into meditation is then presented over several chapters. Chapter 2 defines

meditation and describes the three major types of meditation which include concentrative meditation, mindfulness meditation and guided meditation. In Chapter 3 the benefits of meditation are discussed. Findings are presented from meditation research with adults, university samples, treatment populations of children and adolescents, and non-clinical populations of children from mainstream primary schools. Following this, Chapter 4 explains what happens during meditation to enable therapeutic effects. On the basis of the literature presented, Chapter 5 provides a rationale for the study and a review of the limitations of the existing research into meditation. This chapter also outlines the aims and specific hypotheses for the study. Chapter 6 presents the study method and outlines the sample, school recruitment, survey measures, and procedures for implementing the randomised controlled trial. The results of the study are then described in Chapter 7. Finally, Chapter 8 discusses the findings of the study, along with the limitations and strengths of the study, implications of the results and directions for future research into the area.

Chapter 2: Defining Meditation

Overview

In this chapter meditation is defined. Then the three major types of meditation are described, which include concentrative meditation, mindfulness meditation and guided meditation. The variety of techniques that fall under each of these major types of meditation are then explained. The chapter concludes with a discussion about the overlap that exists between the three major types of meditation.

What is Meditation?

The word “meditation” often invokes images of robed monks sitting cross-legged and chanting (McLean, 2001). However, meditation is a practice that is not confined to a specific religious or spiritual tradition. It is essentially a regular practice conducted for the purpose of inner peace (McLean, 2001).

Meditation comes from the Latin word “meditari” which means to think, contemplate or ponder (Hartmann & Vlieger, 2012). It refers to the different types of practices where people train their minds to realise some mental or physical benefit (Hartmann & Vlieger, 2012). Meditation is usually an inwardly focused, personal practice that individuals can perform by themselves.

Whilst meditation is not well understood or defined by western therapeutic models, the eastern definition of meditation is extremely clear (Harrison et al., 2004). As defined by Manocha (2011), meditation is the experience of mental silence. It is the term used to describe a diverse range of practices that have the common goal of creating desired mental states in the short term, and the promotion of personal growth and mental health (traditionally referred to as enlightenment) in the long-term (J. M. Davidson, 1976). The Western version of

meditation is more about simple relaxation, a break from the hectic pace of modern life without the necessary attachment to religious beliefs or a spiritual journey.

Meditation aims to assist the meditator to disconnect from the ceaseless activity of the mind for the duration of the meditation (McLean, 2001). The purpose is to reduce or eliminate irrelevant thought processes and stop or slow the internal dialogue of the mind by training attention (Rubia, 2009). Continuous background mental noise can be unnecessary and unproductive (Manocha, 2000). The aim of meditation is to reduce unnecessary thoughts by focusing on the present moment instead of dwelling on the unchangeable past or undetermined future (Manocha, 2000). It is this state of being that is said to be therapeutic and which fundamentally differentiates meditation from simple relaxation, physical rest or sleep (Manocha, 2000).

It has been debated whether meditation is actually different from simple relaxation (Rubia, 2009). Rubia (2009) explained that while meditation relaxes the body, it also provides additional cognitive relaxation which aims to reduce mental activity. While simple relaxation relaxes the body, meditation relaxes both the mind and body thereby leading to a deeper physical relaxation. At a neurophysiological level, there also seem to be differences in the neural networks that are related to relaxation and meditation (Rubia, 2009).

Meditation is an ancient technique that has traditionally been practised within a religious framework (Perez-De-Albeniz & Holmes, 2000). It is only in recent times that the techniques of meditation have been taken from their spiritual and religious context, and applied to the promotion of individual well-being (Perez-De-Albeniz & Holmes, 2000). There has been an explosive increase of interest in meditation in the Western world (J. M. Davidson, 1976). Part of the reason for the growth in meditation is because of the rise of mindfulness meditation and the acceptance that meditation does not need to be practised within a religious context. In the

past decade, the interest in mindfulness has grown considerably with an increasing number of clinicians indicating an enthusiasm to learn the techniques of mindfulness meditation and incorporate them into their therapeutic work (Melbourne Academic Mindfulness Interest Group, 2006).

One of the major problems of meditation, particularly in the field of research is the lack of definition of meditation (Manocha, 2000). Despite its popular use in health-related fields, meditation has been poorly defined which hinders its use in a standardised way (Cardoso, de Souza, Camano, & Leite, 2004). An operational definition of meditation that has been used in social and academic research was developed by Cardoso et al. (2004). It outlines that in order to be characterised as meditation, the practice needs to encompass the following five components: (1) the use of a specific technique; (2) muscle relaxation; (3) logic relaxation; (4) a self-induced state; and (5) a self-focus skill.

(1) The **specific technique** needs to be clearly defined and regularly practised. It is important that the instructor presents the technique to be used and explains it clearly, encouraging the meditator to adhere to it carefully. Essentially, the technique needs to be presented as if it were a recipe.
(2) **Muscle relaxation** needs to be present in some moment of the practice so as to induce psychophysical relaxation.
(3) **Logic relaxation** involves not intending to explain the psychophysical effects of the practice, or judging these effects as good, bad, right or wrong, or creating any form of expectation about the process.
(4) The **self-induced state** refers to the practice taught by the instructor, and then self-applied by the meditator. It is essential that the meditator can conduct the practice at home, without the direction of the instructor.
(5) The **self-focus skill** relates to the use of a focal point or anchor that helps to avoid undesirable thinking or sleep. During the practice the meditator improves his/her capacity to be focused on the anchor. Whenever the

meditator notices that he/she is involved in any kind of thoughts, he/she will quickly return to be focused on the anchor.

This thesis utilises the definition of meditation as described by Cardoso et al. (2004) because it clearly outlines the different components incorporated in meditation. Each of these elements may impact child outcomes. Meditation has also been defined by Dahl, Lutz, and Davidson (2015) and Walsh and Shapiro (2006).

Meditation may be considered a method for training attention (Linden, 1973). The main objective is to interrupt the flow of ordinary thought, and as a result bring the meditator more fully into the present moment. Meditation trains people to focus their attention on an object or process, and to resist any distraction from other sources of stimulation (Linden, 1973). Meditation involves focusing on the inner self and quietening the mind, body, and emotions. It is a process of paying attention, often to a specific object nominated as the focus of concentration (Campion & Rocco, 2009). Basic meditation is often practised by sitting quietly, and drawing the mind to a single focus (McLean, 2001). This focus may be the meditator's own breath, a candle, or an internally repeated word or phrase, commonly referred to as a mantra (McLean, 2001).

Different Types of Meditation

Whilst meditation techniques differ widely, a key feature of the techniques is the training of concentrative attention skills to either reduce or eliminate thoughts (Rubia, 2009). Most of the meditation techniques are essentially attention training by which thoughts are consciously manipulated. There are many different varieties of meditation and each differ in the way that they use the mental faculties. According to Shear (2006), different meditation practices vary with regard to the mental faculties they utilise (e.g. attention, feeling, reasoning, visualisation,

memory and body awareness), the manner in which these faculties are used (e.g. actively, passively, effortlessly or forcefully), and the objects they are targeted to (e.g. thoughts, images, concepts, internal energy, breath, aspects of the body, love or God).

There are three major types of meditation which include concentrative, mindfulness and guided meditation (Sedlmeier et al., 2012). Within each of these major types of meditation there are a variety of different techniques that use this approach. The primary difference between the major types of meditation is how attention is manipulated and awareness is applied by the meditator (Kristeller & Rikhye, 2008).

Concentrative Meditation

As described by Sedlmeier et al. (2012) concentrative meditation techniques use an object of focus or attention, which can be a mantra (an internally repeated word, sound or phrase), the breath, or a picture or physical experience. Meditators train themselves to draw their attention to the object of focus and thereby disengage their usual mental processes. For example, if breathing is the object of focus, the meditator attempts to concentrate on each breath and notices how the mind jumps around, and is drawn to other thoughts and experiences. This is often referred to as the “monkey mind” (Kristeller & Rikhye, 2008, p. 510). Meditation aims to tame the monkey mind. As explained by Sedlmeier et al. (2012), meditators learn to disengage from their responses to their thoughts, emotions, and actions. With practise, the meditator is able to effortlessly maintain awareness of the breath, thereby creating a calming effect. In mantra meditation, the meditator silently repeats a calming word, thought or phrase to prevent distracting thoughts. The mantra is used to narrow the conscious awareness and eliminate other thoughts from the mind. If the meditator notices that the mind has wandered, attention is redirected and brought back to the mantra.

There are different forms of concentrative meditation. These include transcendental meditation, Egyptian meditation, Christian Maranatha meditation, Sahaja Yoga meditation, yoga and tai chi.

Transcendental meditation is the most common form of mantra meditation (Manocha, 2000). It is a sitting meditation technique in which the meditator silently repeats and concentrates on a mantra, or special word or sound that only he/she knows. The meditator produces an auditory image of the mantra and continues listening to it (Tart, 1972). Transcendental meditation is usually practised for a period of 15 to 20 minutes twice a day (Benson, Beary, & Carol, 1974). The purpose of transcendental meditation is to prevent distracting thoughts by employing a mantra (Manocha, 2000). During the practice, the meditator assumes a completely uncritical and passive attitude to fleeting thoughts, and is instructed to notice any distracting thoughts and then return to the mantra, and try not to interpret the sensations experienced during the meditation (Delmonte & Kenny, 1985).

Another form of concentrative meditation is Egyptian meditation. In this practice, the meditator focuses on, and visualises an Egyptian symbol that corresponds to a specific quality or characteristic (Hall, 1999). The intention of concentrating on the Egyptian symbol is to achieve a specific goal, for example, to bring wealth or happiness, or to ward off enemies (Hall, 1999). Egyptian meditation also incorporates chanting words of power that correspond to a particular goal.

Christian Maranatha meditation is a mantra meditation whereby the focus of attention is on the repetition of a single word. The mantra that is repeated is the four-syllable Aramaic word “Maranatha” which can be translated as “Come Lord” (Main, 1980). The meditator chants Maranatha in his/her mind or out loud, and uses the inhalation and exhalation of the breath for each syllable of the mantra.

Sahaja Yoga meditation is a simple meditation technique that is easily taught to children and adults. It is based on the principles introduced by the founder, Shri Mataji Nirmala Devi Srivastava (Harrison et al., 2004). Sahaja Yoga meditation is typified by the experience of mental silence. It aims to promote the state of thoughtless awareness (Manocha, 2000) whereby the meditators become aware of this state within themselves by becoming silent and focusing their attention internally (Harrison et al., 2004).

Other types of concentrative meditation can be practised while doing exercises or various movements. These include yoga and tai chi which are considered types of meditation, and involve bodily movements while focusing on the breath (Wisner, Jones, & Gwin, 2010). These practices are usually conducted in a quiet location and involve the use of certain postures and breathing, and require an open, non-judgemental attitude.

Yoga is an ancient practice that incorporates physical postures, breath control, mental concentration and deep relaxation (Zipkin, 1985). There are a wide variety of yoga styles and traditions (Hartmann & Vlieger, 2012), but they all generally include controlled breathing, postures and meditation (Steiner et al., 2013). Yoga has been a significant part of Indian culture for thousands of years (Benson et al., 1974) and incorporates meditation practices and a series of physical techniques that are usually performed in a quiet environment (Benson et al., 1974) to promote a more flexible body and calm mind.

Tai chi is an ancient Chinese meditation (Sun, Buys, & Jayasinghe, 2014). It is a gentle form of martial arts and involves slow controlled movements, deep relaxed breathing and correct posture, and is performed with awareness and concentration (Sun et al., 2014). Tai chi involves performing a self-paced series of postures or movements in a slow, graceful manner while practicing deep breathing.

Mindfulness Meditation

Mindfulness meditation originated from Buddhist traditions (Speca, Carlson, Goodey, & Angen, 2000), however mindfulness is now used without reference to its religious roots. Mindfulness meditation was developed by Jon Kabat-Zinn (2003) and defined as "the awareness that emerges through paying attention on purpose, in the present moment, and non-judgementally to the unfolding of experience moment by moment" (p. 145). Mindfulness meditation involves being totally aware of what is taking place in the present moment, both in the external world, and in terms of the meditator's responses to it (Thompson & Gauntlett-Gilbert, 2008). It involves applying non-judgemental attention on the moment to moment private experiences, like the breath, thoughts and physical sensations, or focusing on other external aspects of the environment, such as sounds (Thompson & Gauntlett-Gilbert, 2008). Regular mindfulness practice allows the meditator to objectively observe his/her thoughts and consequently develop greater self-awareness (Manocha, 2000). Mindfulness meditators practice staying aware of the immediate experience and avoid allowing the mind to wander into the past or drift into the future or into chains of associations (Sedlmeier et al., 2012). The aim is to observe thoughts, feelings and sensations without reacting to them (Sedlmeier et al., 2012). Mindfulness meditation is having an increased awareness and acceptance of living in the present moment.

Zen meditation also falls under the heading of mindfulness meditation. Zen meditation is one of the key Buddhist meditations that was first introduced in China by the Buddhist monk Bodhidarma, and then later presented in Japan where it was named Zen (Chiesa, 2009). It is considered the traditional form of mindfulness meditation that develops insight. The meditator begins by counting his/her breaths in order to focus attention. As the meditator becomes more proficient, he/she then omits the counting and simply remains aware of his/her present experience. Any mental images or sensory perceptions are permitted to appear and leave passively (Benson et al., 1974).

Mindfulness-based approaches to psychotherapy have recently emerged over the past decade that incorporate mindfulness as a therapeutic technique (Burke, 2010). Fjorback, Arendt, Ørnbøl, Fink, and Walach (2011) recently reviewed these approaches which include Mindfulness-Based Cognitive Therapy (Segal, Williams, & Teasdale, 2002) and Mindfulness-Based Stress Reduction (Kabat-Zinn, 1990). Mindfulness-Based Cognitive Therapy combines elements of cognitive therapy with mindfulness meditation, and Mindfulness-Based Stress Reduction is a psycho-educational program that incorporates mindfulness techniques to alleviate pain and suffering. Both of these mindfulness-based approaches incorporate therapeutic techniques together with meditation. As this thesis focuses primarily on meditation, these approaches are only briefly mentioned.

Guided Meditation

The third major type of meditation is called guided meditation. In this practice the meditator's attention is on an intended object of focus and aims to engage a particular aspect of experience (Kristeller & Rikhye, 2008). In guided meditation the content is attended to in a mindful manner, rather than in an analytical or judgemental way (Sedlmeier et al., 2012). In traditional Tibetan practices, the guided meditation may focus on a chant or on complex universal experiences such as feelings of love and compassion (Kristeller & Rikhye, 2008).

Guided meditation is a popular type of meditation used with children in schools (McLean, 2001) because it is easy for teachers to administer in a group setting, and does not require highly trained instructors. In this technique, the meditator sits quietly, typically with his/her eyes closed. The teacher or instructor then prompts the meditator to visualise an imaginative journey where he/she visits a place of peace and beauty. The meditator forms mental images of places or situations that are relaxing, for example, sitting on a beach and watching the sun

set. The purpose of the guided meditation is for the mind to focus and avoid the distractions of daydreams and worries, and therefore create alert calmness (McLean, 2001). Whenever the meditator observes that his/her mind has drifted from the point of focus, he/she needs to gently bring it back and return to the guided meditation (McLean, 2001).

Throughout this thesis the term guided meditation refers to meditation that is delivered using visualisation. The meditators are guided to visualise different scenes or images. As mentioned, this type of meditation is particularly popular with children (McLean, 2001).

Summary

Meditation is a method of training attention (Linden, 1973). It involves focusing on the inner self and quietening the mind, body, and emotions. There are many different meditation techniques, which include transcendental meditation, Egyptian meditation, Christian Maranatha meditation, Sahaja Yoga meditation, yoga, tai chi, mindfulness meditation, Zen meditation, and guided meditation.
Most meditative practices can be grouped into three primary approaches: concentrative meditation, mindfulness meditation and guided meditation. As explained by Sedlmeier et al. (2012), concentrative, mindfulness and guided meditation may appear to be distinct, but it is hard to categorise meditation as being solely of one type. While a technique may have an emphasis on either concentrative, mindfulness or guided meditation, all practices overlap and involve a combination of approaches. For example, during Zen meditation meditators focus their attention and concentrate on counting their breaths which is typical of concentrative meditation. As they become more skilful in the practice, Zen meditators omit the counting and simply remain aware of their present experience, which is characteristic of mindfulness meditation.

As explained by Valentine and Sweet (1999), there is a wide variety of different meditation techniques, although many of them share common ingredients. There is general agreement that all meditation practices involve alterations in attention, however there are clearly different ways of paying attention, and this is what differentiates the different techniques. In some types of meditation, attention is restricted to a single focus, like in mantra meditation where the meditator silently repeats a special word or mantra. In other forms of meditation, attention is extended to a much wider field, like in mindfulness meditation where the meditator is totally aware of what it taking place internally with his/her thoughts and bodily sensations, as well as being mindful of what is happening in the external world by observing all the sounds and smells around him/her.

Chapter 3: The Benefits of Meditation

Overview

In this chapter, the benefits of meditation are presented. Findings are described from research conducted on meditation with adults, university samples, treatment populations of children and adolescents, and non-clinical populations of children from mainstream primary schools. The chapter concludes with a review of the limitations of the existing meditation research.

Meditation Research with Adults

Interest in meditation has grown considerably in the past quarter of a century (Murphy & Donovan, 1999). It has turned from a mystic spiritual quest to a complementary and effective treatment option useful in a variety of different health settings (Cardoso et al., 2004). As a result, meditation is now receiving more attention from empirical researchers, and the benefits of meditation are being studied. Meditation has been linked to a wide range of outcomes including lowered heart rate (Barnes, Davis, Murzynowski, & Treiber, 2004), improved academic performance (Hall, 1999), improvements for cancer patients (Speca et al., 2000), greater immune function (R. J. Davidson et al., 2003) and better psychological health (Kabat-Zinn et al., 1992).

In particular, the literature on mindfulness is constantly expanding (Fjorback et al., 2011) as interventions incorporating the use of mindfulness techniques are becoming more popular (Baer, 2003). Speca et al. (2000) examined the effects of Mindfulness-based Stress Reduction with a sample of ninety cancer patients. A randomised, wait-list controlled design was used. The findings highlighted that this mindfulness program was effective in reducing mood disturbance and stress levels in male and female patients with varied cancer diagnoses, stages of illness

and ages. The study also revealed that patients who attended the weekly sessions and practiced more meditation at home had better outcomes than those who did not.

A recent review of mindfulness interventions conducted by Baer (2003) highlighted that patients with chronic pain who participated in Mindfulness-based Stress Reduction demonstrated statistically significant improvements in their ratings of pain, other medical symptoms, and general psychological symptoms. The studies described in this review also showed that many of these changes were maintained at follow-up evaluations.

In her review of the current mindfulness literature Baer (2003) concluded that mindfulness-based interventions were effective in alleviating various mental health problems and improving psychological functioning. A systematic review of the existing evidence for Mindfulness-Based Stress Reduction and Mindfulness-Based Cognitive Therapy conducted by Fjorback et al. (2011) also yielded similar results. This review highlighted that Mindfulness-Based Stress Reduction was a useful program for improving mental health and decreasing symptoms of stress, anxiety and depression, or assisting individuals to better manage these symptoms. Mindfulness-Based Cognitive Therapy was found to be effective in reducing the risk of depressive relapse.

Whilst much of the research focuses on the health-related effects of meditation, over the past few decades researchers have also been investigating the effect of meditation on academic performance, attention and concentration. One particular randomised controlled trial was conducted by Hall (1999) and randomly assigned 56 university undergraduate students to a meditation or no meditation comparison group. Each group met twice a week for an hour to study their academic coursework. The meditation group began and ended each study session with a 10 minute meditation that included simple breathing, relaxation and attention-focussing techniques, while the comparison group spent the entire time studying.

Further, the meditation group was instructed to meditate before exams, and before and after studying their coursework. Students in the meditation group demonstrated significantly higher grades than students in the comparison group. Despite the small sample size, this study made an important step in identifying the potential of meditation to improve academic performance.

The effect of meditation on attention and concentration has also been investigated. Valentine and Sweet (1999) studied 19 short-term and long-term adult Buddhist meditators using two techniques of concentrative meditation (focusing attention on a single point e.g. mental image, breath, sound or thought) and mindfulness meditation (expanding attention to as many events as possible). A control group was also used and consisted of 24 college students. All participants completed the Wilkins' Counting Test (Wilkins, Shallice, & McCarthy, 1987) and the findings demonstrated that the meditators' attention and accuracy was greater than the control group. Despite the fact that the sample sizes for each of the groups in this study were relatively small, the findings highlighted that the meditators showed better sustained attention than the control group. The results also showed that the long-term meditators demonstrated further increments in attention than the short-term meditators. This study emphasised the cumulative effects of meditation, in that the more meditation practised, the greater the effects experienced. The authors highlighted that extended periods of meditation practice appear to lead to additional improvements in attentional processes.

Contrary to these findings, a study conducted by Sabel (1980) with an adult population of 60 transcendental meditators showed that meditation had no measurable short-term effects on concentration. These meditators were randomly assigned to two treatment groups, either the meditation group or control group, and had their concentration ability measured before and immediately after a single treatment. One group practised transcendental meditation for 20 minutes while the other group read a text quietly. The author concluded that the lack of a

significant effect might have been because all the participants were meditators, and that meditation may have cumulative effects rather than short-term effects on concentration. As all the participants were meditators, it is possible that their concentration was already at elevated levels through regular transcendental meditation, and therefore one single session of either meditation or reading did not alter their existing elevated concentration levels. This research was therefore suggestive of the cumulative effects of meditation.

Meditation Research with Children

Much of the research that has been conducted on meditation has used university students and adult samples. There are few published studies on meditation with children and adolescents (Campion & Rocco, 2009), even though research conducted with children has suggested that meditation may be an effective technique for improving the health of children (Archer, 2005). The benefits of meditation for children include increased restful alertness, a greater capacity for self-control, self-reflection and flexibility, and improved academic performance (Rosaen & Benn, 2006). Using meditation, children have also shown improvements in emotional health (Harrison et al., 2004; Joyce et al., 2010; Steiner et al., 2013), and reductions in anxiety (Linden, 1973), conduct problems (Barnes et al., 2003), and hyperactivity, inattention and impulsivity (Harrison et al., 2004). The effects of meditation on children also include greater prosocial behaviour (Steiner et al., 2013), and improvements in self-esteem, social abilities and the quality of relationships (Harrison et al., 2004).

A randomised controlled trial conducted by Barnes et al. (2004) involved the recruitment of 73 middle-school students (aged 11 and 12 years) who were randomly assigned by classroom into 2 groups. The meditation group was assigned to participate in two 10-minute breathing meditation sessions each day for 3 months. A simple concentrative meditation technique was used where the

breath was the object of the focus. The control group or health education group was asked to attend a weekly 20-minute session on the prevention of heart disease and high blood pressure, and to participate in a 20-minute walk each day after school. The study demonstrated that the meditation group had significant decreases in blood pressure and heart rate, compared to no change or slight increases in the health education group. The authors highlighted that the meditation sessions were successfully implemented by classroom teachers and easily learned by the students, and also practiced at no cost to the school. As a result, the authors concluded that such meditation practices are not only feasible in the school setting, but may also be desirable because of the improvements shown to student's health.

Research conducted at the Maharishi School of the Age of Enlightenment (Nidich, Nidich, & Rainforth, 1986) demonstrated improvements in academic achievement using transcendental meditation. Test scores for 75 incoming and continuing students from grade 3 to grade 8 significantly increased over the course of the academic year. The authors suggested that the continual practice of transcendental meditation every day for a few minutes in the morning and afternoon was the main factor contributing to the effectiveness of the Maharishi School. As student learning usually improves over the course of the academic year and no control group was used in this study, it is difficult to establish that the increase in student grades was attributable to the transcendental meditation.

Meditation with Treatment Populations of Children and Adolescents

Most of the meditation research with children has focused on the use of meditation with treatment populations, for example, children with ADHD or emotional and behavioural problems. Using alternative and complementary medicine in treating children diagnosed with ADHD is common, as noted by Harrison et al. (2004). These researchers investigated the use of Sahaja Yoga meditation as a family

treatment approach for 48 children with ADHD. Over a six week period, both parents and children engaged in twice weekly clinic sessions of Sahaja Yoga meditation and regular meditation at home. During the meditation practice, participants were assisted to achieve a state of thoughtless awareness. Facilitators instructed the participants to become silent and focus their attention internally. Results demonstrated significant improvements in the children's ADHD behaviour (attention, hyperactivity and impulsivity), self-esteem and quality of relationship with their parent. The children noted improved sleep patterns and less anxiety at home, and better concentration and less conflict at school. Parents reported significant improvements in their children's confidence, social abilities and involvement. Parents also described benefits of the meditation program, and reported feeling happier, less stressed, and better able to manage their child's behaviour. Despite these promising results, this research project had several limitations, in that it had a small sample of only 48 children, and also was not scientifically rigorous as it did not use a control group.

Barnes et al. (2003) investigated the impact of transcendental meditation on negative school behaviour in adolescents. Forty-five African American adolescents (aged 15 to 18 years) were randomly assigned to either a 15 minute transcendental meditation practice twice a day, or acted as the control group and attended 15 minute health education sessions at school over 4 months. The study demonstrated that in comparison to the control group, the meditation group showed a significant decrease in conduct problems and school absences. The adolescents in the meditation group exhibited a significant decrease in school rule infractions (e.g. dress violations, disruptive classroom behaviour and fighting), while adolescents in the control group showed an increase in school rule infractions. For the meditation group, there was also a significant decrease in absentee periods and suspension days due to behaviour-related problems compared to an increase in these measures for the control group. The authors noted that this was the first clinical trial investigating the impact of transcendental meditation on school behaviour, and urged future researchers to explore the

mechanisms responsible for this effect. The authors were advocates of using school-based stress reduction programs to improve the behavioural and physical risk factors in adolescents.

Steiner et al. (2013) examined the effects of yoga on children with emotional and behavioural disorders including anxiety, depression, aggression, conduct disorder, hyperactivity and attention difficulties. A total of 37 children completed a yoga intervention in small groups of 7 to 10 students in a disadvantaged urban school. The fourth and fifth grade children completed yoga twice a week over three and a half months and were taught by a certified yoga instructor. The yoga sessions included relaxation training, breathing techniques, yoga exercises and postures appropriate for children, a social game or activity, and a guided meditation. Teachers reported improved attention in class and adaptive skills, and reduced depressive symptoms, behavioural symptoms and internalising symptoms. The students reported some increased state anxiety, however the authors mentioned that this may have been a result of the state-wide mandatory testing that the children completed during the post-intervention assessment, and a school health scare where the school was shut down for a week before the post-intervention assessment was conducted. The authors explained that it was possible that the results were confounded by events occurring in the school as both of these situations could have led to higher state anxiety. The results also highlighted that 13% of parents reported an increase in helping or positive behaviours performed by their child. The authors concluded that yoga delivered in schools is a feasible school intervention for children with emotional and behavioural disorders as it may be helpful in reducing mental health symptoms.

Meditation in Primary Schools with Non-Clinical Populations

While meditation has shown some promising results with children who have emotional and behavioural problems, little research has been conducted on the

use of meditation in mainstream primary school settings. One exception however, is the qualitative research conducted by Campion and Rocco (2009) in Queensland, Australia investigating the impact of school-based meditation on Catholic students aged between 7 and 12 years. This study used Christian Maranatha meditation that is taught in Catholic schools. A total of 54 students, 19 teachers and 7 parents were interviewed regarding their experiences with the meditation. The qualitative findings demonstrated that the Christian Maranatha meditation had positive effects as reported by the parents, students and teachers. Specifically, there was an increase in student calmness and relaxation, improved concentration, better interaction with others, and better stress management and emotional/behavioural control following the meditation. Whilst this study was qualitative and did not have a control group or systematic reliability assessment between the two interviewers conducting the interviews, the authors suggested that this preliminary evaluation highlighted that meditation conducted in schools has the potential to be an effective mental health intervention strategy. The authors advocated for additional research into school-based meditation, considering that it is low cost and easily implemented, and may have broad health, mental health, behavioural and academic benefits for students.

With the growing interest in mindfulness, researchers are now investigating the impact of mindfulness-based approaches in children and adolescents (Burke, 2010). While this is a relatively new field, reviews of the current evidence suggest that these approaches are also effective and practical with young people (Burke, 2010; Meiklejohn et al., 2012). Over the past decade, exploratory initiatives have been developed in the USA, UK, Canada, Israel, and other countries to incorporate mindfulness into primary and secondary education to improve the physical, emotional, and mental well-being of students (Meiklejohn et al., 2012).

An Australian study piloted a mindfulness-based meditation program to determine whether future mental health promotion programs with children and adolescents should incorporate instruction in mindfulness (Joyce et al., 2010). This project

investigated whether a 10 week mindfulness curriculum using 45 minute sessions and optional mindfulness exercises delivered by teachers would be related to improvements in mental health status in 175 grade 5 and 6 students (ages 10 to 12 years). The study used the self-report version of the Strengths and Difficulties Questionnaire (SDQ: R. Goodman, 1997) to assess the prosocial behaviour and total difficulties (emotional symptoms, conduct problems, hyperactivity/inattention and peer relationship problems) of the children. To measure depression a modified version of the Children's Depression Inventory (Kovacs, 2003) was used. Both measures were administered before the program commenced, and at its completion. The results suggested that mindfulness meditation can affect levels of anxiety and depression among children in grades 5 and 6. The findings demonstrated improvements in emotional health, particularly for those students who scored in the "borderline" and "abnormal" categories as classified by the SDQ prior to commencing the program. While this study suggested that mindfulness education could be an important addition to mental health promotion programs in schools, it is not without its limitations as there was no control group in this research project. Therefore, it cannot be established that the change was attributable to the mindfulness intervention.

A recent American study conducted by Flook et al. (2010) investigated the effects of a mindful awareness program on children's executive function using a randomised controlled trial. A sample of 64 children from second and third grade were assigned to either the eight-week school-based curriculum of mindfulness activities or to the control group consisting of silent reading. Although there was not an overall group effect, the findings indicated that children in the mindfulness group with lower executive function at baseline showed greater improvement in executive function compared with the control group. While this study highlighted a stronger effect of the mindful awareness program on children with executive function difficulties, no objective tests of the children's executive function were used, but rather parent and teacher reports were implemented.

Limitations of the Current Meditation Research

Although research has demonstrated that meditation improves a wide range of outcomes, there is still uncertainty within the literature about whether different types of meditation affect outcomes in the same way. In addition, further investigation is warranted to examine the effect of meditation on different populations, for example, children in general school samples or disadvantaged schools in comparison to children from clinical groups. A great deal of research is still required in order to fully understand the phenomena of meditation.

While various studies point to the benefits of meditation for children, this research remains limited as few studies use rigorous methodologies to establish causality (Campion & Rocco, 2009). In a review on meditation conducted by Manocha (2011), it was reported that there were over 3,000 scientific studies published on meditation in English-speaking peer-reviewed journals, however only approximately 4% of these studies were randomised controlled trials. This review highlighted the need for rigorous scientific methodology and the importance of utilising randomised controlled trials as the only way to reliably exclude a placebo effect. This ensures that any measurable effects can be directly attributed to the meditation practice. It is crucial to expand the knowledge in this area, and encourage further empirical studies investigating the benefits of meditation as a school-based intervention (Wisner et al., 2010).

There is not a consistent body of literature on meditation. The studies vary in sample sizes, methodology, and the types of meditation used which makes comparison of the studies difficult. High quality randomised controlled trials are few, and many studies suffer from small sample sizes. As outlined by Wisner et al. (2010), some studies fail to separate meditation from other elements of the intervention, while other research projects fail to use a control or comparison group. Often there is also poor description of the intervention used in the study and the methodology implemented. Due to the methodological limitations in

meditation research our understanding of the possible benefits of meditation is compromised (Hartmann & Vlieger, 2012). Hartmann and Vlieger (2012) advocate for high-quality studies with larger sample sizes, standardised interventions and consistent outcome measures.

There are a number of different types of meditation, however much of the emphasis in the research is on transcendental meditation and mindfulness meditation. There appears to be no research conducted on guided meditation with children. These three forms of meditation are different as they each come from one of the three major types of meditation, namely concentrative, mindfulness and guided meditation. Each of these major approaches to meditation are different in how attention is manipulated and awareness is applied by the meditator. Transcendental meditation is a concentrative meditation and specific form of mantra meditation. In this practice, the meditator silently repeats and concentrates on a mantra, or special word or sound that only he/she knows. In mindfulness meditation however, the meditator doesn't focus on a mantra, and instead the meditator purposefully pays attention to the present moment as it unfolds and without judgement. The aim of mindfulness meditation is to stay aware of the immediate experience and observe thoughts, feelings and sensations as they occur without reacting to them. And finally, in guided meditation there is no focus on a mantra like in transcendental meditation, and less attention is directed to the present moment as is the case with mindfulness. Guided meditation transports the meditator to an imaginary place of peace and beauty, and the purpose is to train the mind to focus on the imaginative journey, and avoid distractions and worries.

Much of the research that has been conducted on meditation has used university students and adult samples. There are serious limitations to the body of meditation research with children. While some of the meditation research with children has focused on the use of meditation with treatment populations, for example, children with ADHD or emotional and behavioural problems, there has

been limited research on meditation that has been conducted in mainstream primary schools with non-clinical populations. While studies have investigated the impact of mindfulness-based meditation programs in schools with grade 5 and 6 children, there appears to be no research using guided meditation with this age group. There are no clinical trials to date examining the use and impact of guided meditation on the mental health and well-being of children in primary schools using non-clinical populations.

Summary

Whilst the use of meditation with children is still in its infancy, it yields promising results in bringing about positive mental health outcomes for young people. Some of the benefits of meditation sited in the literature include improvements in academic performance (Rosaen & Benn, 2006), emotional health (Joyce et al., 2010), prosocial behaviour (Steiner et al., 2013), self-esteem, social abilities and the quality of relationships (Harrison et al., 2004). Meditation has also been associated with reductions in anxiety (Harrison et al., 2004), conflict at school (Harrison et al., 2004), conduct problems (Barnes et al., 2003), hyperactivity, inattention and impulsivity (Harrison et al., 2004), and depressive symptoms, behavioural symptoms and internalising symptoms (Steiner et al., 2013). These effects are important in the context of current prevalence rates of child and adolescent mental health problems in Australia (Bernard et al., 2007; Sawyer et al., 2001).

Chapter 4: What Happens During Meditation?

Overview

Chapter 4 explains what may happen during meditation to enable therapeutic effects. With the use of medical technology, scientists are now able to map the brain and compare the changes that occur while practising meditation. Research into this field is presented in this chapter. Following this, the theory of relaxation that involves the parasympathetic response is discussed, along with information about how this might influence mental health outcomes.

What Happens During Meditation?

Biological Mechanisms

With the widespread and increasing use of various meditation practices, empirical researchers are examining the mechanisms of how meditation works. It is important to understand the possible biological mechanisms by which meditation may influence somatic, cognitive and emotional processes (R. J. Davidson et al., 2003). Unfortunately research in this area is sparse. Much of the meditation research has focused on the benefits of meditation or the changes that occur as a result of meditation, for example, improvements in emotional health (Joyce et al., 2010) or academic performance (Rosaen & Benn, 2006). In the literature there is a lack of detailed psychological theories that make thorough predictions about what actually happens when people meditate (Sedlmeier et al., 2012). In a meta-analysis conducted by Sedlmeier et al. (2012), the authors discovered that out of the 595 studies reviewed on meditation, a considerable amount of the studies reported little or nothing about why and how meditation should work. These authors highlighted that much of the meditation research has in fact been conducted in an atheoretical manner.

In the research that is discussed in this chapter the different types of meditation have been identified where possible, however many of the authors do not specify the type of meditation used which is a common problem in meditation research. This makes interpreting the results difficult as various types of meditation may affect the body differently.

Scientific interest in meditation has grown significantly over the past quarter of a century because science may now be able to show how meditation affects the body, and particularly areas of the brain (Murphy & Donovan, 1999), providing some insight into the mechanisms associated with meditation. With the use of medical technology, scientists have been able to map the brain and compare the changes that occur while practising meditation. For example, using Single Photon Emission Computed Tomography (SPECT) imaging scientists are able to photograph the brain in various states of experience (Newberg, D'Aquili, & Rause, 2001). As explained by Schaub (2011), SPECT imaging can highlight the distinct differences between the brain in a state of fear, in comparison to the state achieved during meditation. If a person is worrying and becoming anxious, certain regions of the brain become activated, while other areas grow dim. However, if the person starts meditating, the regions of the brain that were stimulated by the worry or anxiety start to quieten down, and new regions of the brain are activated.

Neuroimaging studies have also investigated changes in brain activity using Electroencephalogram (EEG) while practising various types of meditation (Khare & Nigam, 2000). R. J. Davidson et al. (2003) measured brain activity in adults before and after an eight-week training program in mindfulness meditation using EEG. The findings suggested that meditation can produce increases in left-sided anterior activation that are associated with decreases in anxiety and negative affect, and increases in positive affect. Left-sided anterior activation is related to more positive emotional expression while right-sided activation is usually associated with the arousal of negative emotions (R. J. Davidson, 1992). This

research highlighted that meditation changes the activity of the left side of the brain.

Hasenkamp, Wilson-Mendenhall, Duncan, and Barsalou (2012) used Functional Magnetic Resonance Imaging (fMRI) to assess the brain networks activated during meditation. Fourteen adult meditators performed meditation focused on the breath while undergoing fMRI scanning. The researchers highlighted that there were four intervals in the cognitive cycle which included mind wandering, the awareness of mind wandering, the shifting of attention, and sustained attention, and described the brain activity during each of these states. This study provided a method whereby a detailed picture of cognitive states was identified as they fluctuated in real time.

Benson (1975) was responsible for much of the pioneering work in understanding the mechanisms involved in meditation, and he coined the term “relaxation response”. He explained that the relaxation response is responsible for a number of physiological changes including a decrease below resting levels in oxygen consumption, heart rate, breathing rate and muscle tension (Benson, 1993).

Research conducted by Benson (1993) in the 1960’s also demonstrated that during meditation, brain wave patterns were slower than those found in everyday thinking. Meditation created a shift from normal waking brain wave patterns to a pattern where slower brain waves predominate. During the meditative period, there were more low-frequency alpha, theta, and delta waves which are associated with rest and relaxation, and less of the high-frequency beta waves that are associated with normal waking activity.

Most of the theories of how meditation works are based on the assumption that meditation is a sophisticated type of relaxation that involves the parasympathetic response (Manocha, 2000). One explanation is that meditation elicits a relaxation response, which decreases sympathetic nervous system activity and increases

parasympathetic nervous system activity (Benson et al., 1974). As explained by Manocha (2000), psychological stress is linked to the activation of the sympathetic component of the autonomic nervous system which initiates the fight or flight response. Meditation and any form of relaxation serves to reduce the sympathetic activation by decreasing the release of catecholamines and other stress hormones, such as cortisol. Catecholamines are hormones that are secreted into the blood stream (Lundberg, 2005) from the adrenal glands in response to stress (Morrison, Bennett, Butow, Mullan, & White, 2008). As described by Morrison et al. (2008), the main catecholamines are norepinephrine (noradrenaline) and epinephrine (adrenaline). Cortisol is another stress hormone (Morrison et al., 2008) that is also released by the adrenal glands in response to stressors (Neupert, Soederberg Miller, & Lachman, 2006). When these stress hormones are constantly released, the body continues to be in a physical state of overdrive, which may result in a depleted immune system and a cycle of exacerbated stress (Napoli, Krech, & Holley, 2005).

During meditation the stress hormones are reduced which promotes increased parasympathetic activity which then slows the heart rate and improves the flow of blood to the internal organs and away from the periphery (Manocha, 2000). When the stress reactions are disengaged, relaxation in the body follows (Kristeller & Rikhye, 2008). The physiological changes that include a decrease in below resting levels of oxygen consumption, heart rate, breathing rate and muscle tension as described by Benson (1993) are responses to the decreased sympathetic nervous system and are markedly different from the changes noticed during quiet sitting or sleep (Benson et al., 1974).

Rubia (2009) highlighted that meditation also elicits changes in neurotransmitters that are released by limbic brain regions and modulate mood and affect. Researchers have found that meditation corresponded to a 65% increase in the release of dopamine in the limbic brain regions (Kjaer et al., 2002). Dopamine is a neurotransmitter that affects brain processes that control movement, emotional

response, and the ability to experience pleasure and pain. Studies have also reported increases in blood plasma levels of melatonin, a neurotransmitter that helps to create restful sleep (Harinath et al., 2004), and serotonin, a chemical neurotransmitter that helps transmit messages along the nervous system (Solberg et al., 2004). Both neurotransmitters are closely related and play a vital role in mood stabilisation, positive affect, stress-prevention and aging. Rubia (2009) concluded that it is highly likely that the subjective feelings of well-being and positive affect experienced during meditation are at least in part mediated by the release of mood stabilising neurotransmitters (dopamine, serotonin and melatonin) in the limbic brain regions.

The biological mechanisms of meditation are intertwined with the psychological mechanisms. As explained by Delmonte and Kenny (1985) there is evidence that during meditation a reasonable amount of physiological relaxation occurs, and this relaxation may then become conditioned to a mantra or the focus of the meditation. The authors explained that in effect, the mantra or focus becomes a conditioned stimulus that elicits a conditioned relaxation response.

This thesis therefore proposes that regular practise of meditation increases the conditioning of the relaxation response. Subsequently, the stress hormones in the body continue to be reduced, and increased parasympathetic activity is promoted. In addition, the release of the mood stabilising neuro-hormones and neurotransmitters dopamine, serotonin and melatonin in the limbic brain regions increase feelings of well-being and positive affect. Regular practise of meditation may produce cumulative effects, in that the more an individual meditates, the greater the experience of relaxation, and the greater the feelings of well-being and positive affect. With the regular practise of meditation, an individual learns how to relax the body to initiate the relaxation response and to direct the mind to focus in a particular way on the present moment. The more an individual meditates, the better he/she becomes at initiating the conditioned relaxation response and directing the attention in a considered way, and the effects become cumulative.

Over time, this response then becomes automatic and can be directed to other situations which may explain why there is a prolonged effect after meditation is complete.

Meditation trains people to relax by teaching them to be in the present moment and be free from distractions (Linden, 1973). With the regular practise of meditation, meditators are able to create this heightened state of relaxation. Anxiety and relaxation are incompatible feeling states (Linden, 1973) so if meditators are relaxed they are unable to be anxious. This explains why meditation may be responsible for reducing emotional problems, particularly anxiety. Reduced anxiety may also allow the meditators to sleep better, which in turn may have other additional benefits (Delmonte & Kenny, 1985). Similarly, when meditators regularly engage in meditation practices, they may experience increased feelings of well-being and positive affect, thereby reducing depressive symptoms.

This thesis proposes that if meditators feel calmer and more relaxed, and experience greater feelings of well-being and positive affect, and less symptoms of anxiety and depression, meditators may be better equipped to cope with any difficulties or challenges they encounter. It has been noted that children's evaluations of their own competencies affect their emotional experiences (Berk, 1997). Therefore, if children feel they are coping better with life's challenges, their emotional state will be healthier. If they feel better about themselves, then this may improve their overall sense of self or self-esteem. This could then have additional flow on effects, as the better you feel about yourself, the more inclined you are to help others and demonstrate prosocial behaviours. Research has demonstrated that helping behaviours are associated with better mental health (Schwartz, Meisenhelder, Ma, & Reed, 2003).

As previously mentioned meditation enables meditators to create a calm, more relaxed state of being within themselves. Consequently regular meditators may

experience less agitation and hyperactivity as this relaxed state may enable meditators to have more control over their impulses. As a result, meditators may become less reactive to problems they face and feel better able to cope with any difficulties they encounter. This may result in better relations with others and less problems with peers, and reduced anger and conduct problems.

As previously discussed, meditation is essentially training in attention and the systematic narrowing of attention. It helps meditators learn to focus and eliminate distractions. It serves to reason that regular meditation will therefore increase meditators' ability to remain focused and attentive, and thereby reduce inattention.

In summary, the purpose of meditation is to relax the mind and body. Relaxation is created by decreases in activity in the sympathetic nervous system and increases in parasympathetic nervous system activity. This feeling of relaxation then becomes conditioned to the meditation. Regular practise of meditation may produce cumulative effects. The more a person meditates, the greater the experience of relaxation, and the greater the feelings of well-being and positive affect, and the greater the ability to direct the mind to focus in a particular way on the present moment and engage the conditioned relaxation response at a later time when the meditation has ended.

Chapter 5: Rationale and Hypotheses

Overview

This chapter provides a rationale for the study. Research aims are outlined, and specific hypotheses are presented.

Research Aims

Although there is limited research in the area of guided meditation, studies have shown that other types of meditation have found positive effects on mental health measures for children. As guided meditation is a popular type of meditation used with children in schools (McLean, 2001), and there is no known research exploring the use of guided meditation for improving the mental health outcomes of children, guided meditation was selected in the current study. As previously mentioned, there are currently no randomised controlled trials exploring the use and impact of guided meditation on the mental health and well-being of children in primary schools.

Guided meditation was also selected for practical reasons as it is simple for children to learn, and easy for teachers to administer in a group environment as it does not require highly trained instructors. Teachers can implement guided meditation in a classroom setting without extensive training. Training and experience are necessary to properly teach meditation practices like transcendental meditation and advanced mindfulness meditation (Wisner et al., 2010). Guided meditation, however, can be facilitated by teachers with little training and can easily be applied in school-based settings. Therefore, if guided meditation is found to be effective it may be more likely to be adopted by schools.

Most of the research on meditation has focused on adult samples or children from treatment populations, and little research has been conducted with children from non-clinical populations in mainstream primary schools. Therefore, one of the primary aims of this research project was as follows:

> Aim 1: To contribute to the limited body of knowledge on the use of guided meditation in primary schools with grade 5 and 6 children using a randomised controlled trial.

As previously discussed, it has been suggested that larger trials with more rigorous study designs are necessary.

> Aim 2: By using a randomised controlled trial and randomly assigning grade 5 and 6 classes to receive either a guided meditation intervention or act as a control group, this research study aimed to investigate the effectiveness of guided meditation as a school-based program for improving mental health outcomes in a non-clinical population of children aged 10 to 12 years.

Research has demonstrated positive improvements in children's behaviour and mental health using a variety of different meditation techniques. Using Sahaja Yoga meditation, Harrison et al. (2004) showed significant improvements in children's ADHD behaviour (attention, hyperactivity and impulsivity), self-esteem and the quality of relationship with their parent. The children in this study reported less anxiety at home, and better concentration and less conflict at school, while their parents reported significant improvements in their children's social abilities and confidence. Using mindfulness-based meditation, an Australian pilot demonstrated improvements in emotional health, and suggested that mindfulness can affect levels of anxiety and depression among grade 5 and 6 children (Joyce et al., 2010). Using yoga with fourth and fifth grade children with emotional and behavioural disorders, Steiner et al. (2013) found that teachers reported improved attention in class and adaptive skills, and reduced depressive symptoms,

behavioural symptoms and internalising symptoms. The authors also noted that 13% of parents reported an increase in helping or positive behaviours performed by their child. Using Christian Maranatha meditation, the qualitative research conducted by Campion and Rocco (2009) with students aged between 7 and 12 years in Australia reported that there was an increase in student calmness and relaxation, improved concentration, better interaction with others, and better stress management and emotional/behavioural control following the meditation. Finally, using transcendental meditation, a study by Barnes et al. (2003) showed a significant decrease in conduct problems for adolescents in the meditation group, in comparison to the control group.

While other types of meditation have found positive effects on mental health measures for children, there is no known research exploring the use of guided meditation for improving the mental health outcomes of children.

> Aim 3: To examine the impact of guided meditation on primary school children's behaviour, mental health and well-being using measures of emotional problems, conduct problems, hyperactivity-inattention, peer problems, prosocial behaviour, and self-esteem.

Meditation has been found to be more effective for children with a clinical presentation in primary schools (Joyce et al., 2010). The Australian pilot conducted by Joyce et al. (2010) highlighted that improvements in emotional health occurred particularly for those grade 5 and 6 students who scored in the borderline and abnormal categories as classified by the SDQ prior to commencing the program. This finding indicated that the effect of mindfulness was stronger for children with a clinical presentation.

Given the lack of literature comparing the effects of meditation on children with normal mental health ratings and clinical mental health ratings, one of the aims of the current study was as follows:

Aim 4: To explore whether guided meditation was more effective for primary school children with a clinical presentation than children with normal mental health ratings.

Researchers have also discussed the cumulative effects of meditation (Sabel, 1980; Valentine & Sweet, 1999). Valentine and Sweet (1999) studied 19 short-term and long-term adult Buddhist meditators using two techniques of concentrative meditation (focusing attention on a single point e.g. mental image, breath, sound or thought), mindfulness meditation (expanding attention to as many events as possible) and a control group of 24 college students. The results showed that the long-term meditators demonstrated further increments in attention than the short-term meditators. This study highlighted the cumulative effects of meditation, in that the more meditation was practised, the greater the effects experienced. Extended periods of meditation practice appeared to lead to additional improvements in attentional processes.

Similarly, a study conducted by Sabel (1980) with an adult population of 60 transcendental meditators was suggestive of the cumulative effects of meditation. These regular meditators were randomly assigned to two treatment groups, either the mantra meditation group or reading control group, and had their concentration ability measured before and immediately after a single treatment. While the results showed that meditation had no measurable short-term effects on concentration, the authors concluded that the lack of a significant effect might have been because all the participants were regular meditators, and that meditation may have cumulative effects rather than short-term effects on concentration. As all the participants were meditators, it is possible that their concentration was already at elevated levels through regular transcendental meditation, and therefore one single session of either meditation or reading did not alter their existing elevated concentration levels.

Researchers have demonstrated the cumulative effects of meditation on attention, however these cumulative effects have not been investigated with other child outcomes.

Aim 5: To investigate if children who have practised regular meditation experience an even greater reduction in emotional problems, conduct problems, hyperactivity-inattention, and peer problems, and greater improvements in prosocial behaviour and self-esteem than first time meditators.

Hypotheses

Hypothesis 1 (Outcome Hypothesis): Children in the guided meditation group would experience greater reductions in emotional problems, conduct problems, hyperactivity-inattention, and peer problems, and greater improvements in prosocial behaviour and self-esteem than the children in the control group.

Hypothesis 2 (Severity Group Hypothesis): The effects of guided meditation would be stronger for children with a clinical presentation than children with normal mental health ratings.

Hypothesis 3 (Cumulative Hypothesis): Children who have practised regular meditation experience even greater reduction in emotional problems, conduct problems, hyperactivity-inattention, and peer problems, and greater improvements in prosocial behaviour and self-esteem than first time meditators.

Chapter 6: Method

Overview

This chapter outlines the method used in the randomised controlled trial conducted for this thesis. Classes were randomly assigned to receive either 10 minutes of guided meditation or reading (the control activity) daily over 8 consecutive weeks. The children completed pre and post self-report surveys to assess their behavior, mental health and well-being. In this chapter, the sample is described, along with information about school recruitment. The measures are then presented. Following this, the procedures used to conduct the study are described, including the approval processes required to work with children in primary schools, and the procedures for the guided meditation group, control group, Teacher Information Session, survey consent process, and survey administration. Finally, the chapter concludes with information pertaining to the time of year the trial was conducted.

Sample

School Recruitment

Thirty-six Government and Catholic primary schools in metropolitan Melbourne were approached and invited to participate in the study investigating the effectiveness of guided meditation in classrooms. Using data on student numbers in schools obtained from the Department of Education and Early Childhood Development (DEECD), only schools with over 100 grade 5 and 6 students were approached.

Schools were initially selected from a similar area to eradicate school differences. Government primary schools in the DEECD North-Western Victoria Region in the

City of Banyule were originally approached. However, with the high number of schools declining participation in the study, other regions were also selected. Government schools in the DEECD North-Western Victoria Region in the City of Darebin, Whittlesea, Yarra and Hume were then contacted, along with Government schools in the DEECD North-Eastern Victoria Region in the City of Whitehorse, Manningham and Boroondara. Government schools in the DEECD South-Western Victoria Region in the City of Hobsons Bay, Brimbank and Moonee Valley were also approached, along with Catholic schools in the City of Banyule.

Of the 36 primary schools approached, 2 Government primary schools and 1 Catholic primary school agreed to participate in the study indicating an 8.33% participation rate. One Government primary school (School 1) and one Catholic primary school (School 3) were recruited from the DEECD North-Western Victoria Region in the City of Banyule, and one Government primary school (School 2) was recruited from the DEECD South-Western Victoria Region in the City of Moonee Valley. Using data obtained from the 2011 census compiled by the Australian Bureau of Statistics (2016), Table 1 provides descriptive information on the demographic characteristics for each of the suburbs where the three schools were located, and also shows the national statistics for Australia.

Table 1

Descriptive Information on the Demographic Characteristics of the Suburb of Each School and National Statistics Obtained from the 2011 Census Data from the Australian Bureau of Statistics

Demographic	Suburb of School 1	Suburb of School 2	Suburb of School 3	National Statistics
People living in the suburb	6,841	9,039	7,902	21,507,717
Median age	38	40	41	37
Number of families	1,905	2,437	2,184	5,684,062
Average children per family	2.0	2.0	1.7	1.9
Median weekly household income	$2,098	$1,775	$1,449	$1,234
Aboriginal and Torres Strait Islanders[a]	0.3%	0.3%	0.3%	2.5%
Born in Australia[a]	83.0%	79.4%	72.1%	69.8%
English only spoken at home[a]	89.1%	80.1%	76.2%	76.8%
Households where 2 or more languages spoken[b]	14.2%	21.6%	23.5%	20.4%
Top religion[a]	Catholic 31.4%	Catholic 43.3%	Catholic 33.3%	Catholic 25.3%
No religious affiliation[a]	28.0%	17.6%	24.4%	22.3%
Professionals in work force[c]	25.6%	26.5%	33.8%	21.3%
Work 40 hours or more per week[c]	45.0%	46.4%	46.6%	45.3%

Note. [a]Percentages are obtained from the total amount of people in each suburb. [b]Percentages are obtained from the total number of households in each suburb. [c]Percentages are obtained from the total number of people in the work force in each suburb.

As illustrated in Table 1, the three schools were fairly similar in relation to some demographics. The median age for the people in each suburb was comparable, as was the average number of children found in each family. Catholicism was the top religion amongst the three suburbs with more people from the School 2 suburb registered as Catholics and less people with no religious affiliation than the other two suburbs. Across the three suburbs there was the same percentage of Aboriginal and Torres Strait Islanders, and a similar number of people worked 40

hours or more per week. The only major differences between the suburbs was that the School 2 suburb had a greater population than the other two suburbs, and consequently more families lived in that area.

The median weekly household income for all three suburbs was well above the national average, along with the percentage of the suburb working as professionals. These statistics indicated that the three schools in the sample were from higher socio-economic backgrounds than the national average. There were also more people in each of the three suburbs who were born in Australia in comparison to the national average, with particularly high numbers reported in the suburbs of Schools 1 and 2. In addition, the School 1 suburb had considerably more people who spoke only English at home, and had considerably less households where two or more languages were spoken. This would indicate that there were less migrants and refugees living in the School 1 suburb than the suburbs of Schools 2 and 3.

The School 3 suburb showed some demographic differences to the suburbs of Schools 1 and 2. The people from the School 3 suburb earned less than those living in the suburbs of Schools 1 and 2, had the lowest percentage of people born in Australia and only English spoken at home, and had the highest percentage of households where two or more languages were spoken at home. These statistics suggested that there were more migrants and refugees living in the suburb of School 3 than in those of Schools 1 and 2.

It was hoped that one of the schools recruited for the study was already participating in regular meditation, as meditation is currently offered in some school settings (Wisner et al., 2010). School 3, the Catholic primary school was already conducting regular Christian Maranatha meditation with the children so only guided meditation groups were used in this school, and there was no control group. As previously described in Chapter 2, Christian Maranatha meditation is a mantra meditation whereby the focus of attention is on the repetition of the four-

syllable Aramaic word “Maranatha” which can be translated as “Come Lord” (Main, 1980). The meditator chants Maranatha in his/her mind or out loud, and uses the inhalation and exhalation of the breath for each syllable of the mantra. In the Teacher Survey completed at the Teacher Information Session at the start of the trial (explained in the Procedure section), the teachers conducting Christian Maranatha meditation in School 3 reported that they frequently practised meditation with their classes three or four times a week.

Participants

A total of 458 parents/guardians from 19 grade 5 and 6 classes in 3 primary schools in metropolitan Melbourne were approached to allow their child to participate in the research project. Four hundred and twenty-four consent forms were returned, indicating a return rate of 92.58%. Of these, 388 children were given permission to complete the surveys, demonstrating a 91.51% participation rate. Taking into account the total number of children invited to participate in the study, the overall participation rate for the study was 84.72%.

The data from 14 children was eliminated as 12 children withdrew from the study during survey administration, one child left the school while the study was being conducted, and another child was absent for the complete duration of the study. The remaining 374 grade 5 and 6 children who completed both the time 1 and time 2 surveys were included in the sample. The sample consisted of 187 grade 5 children (50%) and 187 grade 6 children (50%) ranging from 10 to 12 years of age. There were 203 male participants (54.28%) and 171 females (45.72%). From the 3 schools, there were 236 children in the guided meditation group (63.10%), and 138 children in the control group who completed reading (36.90%).

Table 2 provides demographic information for each of the three schools in the study, and includes the gender, age and grade level for the children in the sample,

including whether they were English-speaking or ESL (English as a second language). Table 2 also highlights the number of classes in each school.

Table 2

Descriptive Statistics for the Children in Each School

Demographic	School 1	School 2	School 3
Number of children	121	139	114
Males	63	77	63
Females	58	62	51
10 years	34	47	33
11 years	68	73	62
12 years	19	19	19
Grade 5	61	73	53
Grade 6	60	66	61
English-speaking	119	129	106
ESL[a]	2	10	8
Number of classes	6	7	6

Note. $N = 374$.

[a]ESL = English as a second language.

As can be seen from Table 2, the three schools were fairly similar in demographics, except that Schools 1 and 3 contained six grade 5 and 6 classes while School 2 contained seven classes. Each of the schools had more males than females in the grade 5 and 6 cohort, and the majority of children across the sample were from English-speaking backgrounds, with School 1 reporting only two ESL children. Each of the schools contained the same number of 12-year-old children, and the majority of children in each of the schools were 11 years of age. School 1 had similar numbers of grade 5 and 6 children, while School 2 contained more grade 5 children, and School 3 had more grade 6 children.

In the sample, there were a total of 19 grade 5 and 6 classes with 12 classes allocated to the guided meditation group and 7 classes assigned to the control group. In 15 classes, the same teacher conducted the meditation or reading with

the class, however in four classes there was a job-share arrangement and two teachers shared the teaching responsibilities for the class. School 1 contained two classes with two teachers while Schools 2 and 3 each had one class with two teachers. All of the job-share classes were guided meditation groups.

Measures

Student Survey

A four page self-report student survey was administered to measure children's behaviour, emotional problems and self-esteem. The psychopathology and prosocial behaviour of children was measured using the Strengths and Difficulties Questionnaire (SDQ: R. Goodman, 1997), and children's self-esteem was assessed via the School Short Form of the Coopersmith Self-Esteem Inventory (Coopersmith, 1981). Demographic information concerning the children's age, gender, grade level and language spoken at home was also included in the survey. A copy of the Survey is attached as Appendix A.

The children completed time 1 surveys before the guided meditation and reading programs commenced, and completed time 2 surveys immediately after the programs finished. All the children completed the same time 1 and time 2 surveys (see Appendix A). However, the guided meditation group were asked some additional questions in the time 2 survey. To gain an understanding of the children's experiences of the guided meditation, the children were asked to comment on the guided meditation by answering the following questions: "Did you enjoy the meditation?", "How did you feel after the meditation?", "Do you think the meditation was beneficial?", and "Would you like to continue with the meditation?" For the complete set of questions, a copy of the Time 2 Meditation Survey is attached as Appendix B.

Strengths and Difficulties Questionnaire (SDQ)

In order to assess the emotional problems, conduct problems, hyperactivity-inattention, peer problems, and prosocial behaviour of the children in the study, the SDQ was selected because it is one of the most widely used brief mental health questionnaires for measuring psychological adjustment (positive mental health) in children and adolescents (A. Goodman, Lamping, & Ploubidis, 2010). The SDQ provides a balanced coverage of the behaviours, emotions and relationships of children and adolescents (R. Goodman, 1997). It is an extensively used instrument that has been translated into over 40 languages (Hawes & Dadds, 2004) and can be downloaded free of charge from the internet (R. Goodman, 2001).

The SDQ is a screening measure of behavioural, emotional and relationship problems in children and adolescents (R. Goodman, 1997). It is used to measure four main domains of difficulties that trouble children e.g. emotional problems, conduct problems, hyperactivity-inattention, and peer problems, as well as personal strengths such as prosocial behaviour (Muris, Meesters, Eijkelenboom, & Vincken, 2004). A total difficulties score is also generated which is the sum of the child's emotional problems, conduct problems, hyperactivity-inattention, and peer problems scales (A. Goodman et al., 2010).

The 25 items on the questionnaire are divided into 5 scales, each with 5 items. Each item on the SDQ is answered on a 3-point Likert scale including "Not True" = 0, "Somewhat True" = 1 and "Certainly True" = 2 (R. Goodman, 1997), except for reverse-scored items which are scored in the opposite direction i.e. "Not True" = 2, "Somewhat True" = 1 and "Certainly True" = 0. Scale scores ranging from 0 to 10 are provided for emotional problems, conduct problems, hyperactivity-inattention, peer problems and prosocial behaviour, and a total difficulties score ranging from 0 to 40 is generated by summing all the scale scores except prosocial behaviour (R. Goodman, Meltzer, & Bailey, 1998). High scores on the

prosocial behaviour scale indicate strengths, whereas high scores on the other four scales reflect behavioural and emotional difficulties. Detailed scoring for each of the SDQ scales is outlined in Appendix C.

As indicated by R. Goodman (2001) the items selected for the SDQ were based on the main childhood disorders as specified in the DSM-IV (American Psychiatric Association, 1994). For example, the five items on the hyperactivity scale were purposely selected to tap inattention (two items), hyperactivity (two items), and impulsivity (one item) as these are the major symptom domains for the DSM-IV diagnosis of attention-deficit/hyperactivity disorder (ADHD). Similarly, the emotional problems scale of the SDQ taps into any depressive, phobic or anxiety diagnosis, including obsessive-compulsive disorder. In the same way, the conduct problems scale taps into the diagnosis of oppositional defiant disorder, conduct disorder, or other disruptive behavioural disorders. Typical items found in each of the five scales include “I worry a lot” (emotional problems scale), “I get very angry and often lose my temper” (conduct problems scale), “I am restless, I cannot stay still for long” (hyperactivity-inattention scale), “I have one good friend or more” (peer problems scale), and “I am helpful if someone is hurt, upset or feeling ill” (prosocial scale).

The SDQ can be classified according to the degree of difficulties experienced by children using a three-band categorisation of the scores into “normal”, “borderline” and “abnormal” as recommended by the author (R. Goodman et al., 1998). A normal score denotes scores falling below the 80th percentile, the borderline range includes scores between the 80th and 90th percentile, and the abnormal or clinical range represents the scores from the 90th to 100th percentile i.e. the top 10% (Hayes, 2007). In the current study, two severity groups were used and children with scores in the borderline and abnormal ranges were classified as children with a clinical presentation, while children with scores in the normal range were considered children with normal mental health ratings. Appendix D displays the

detailed scoring for the three-band categorisation into normal, borderline and abnormal.

The SDQ can be completed by parents, teachers, children and adolescents (R. Goodman et al., 1998). It was deemed too time consuming for teachers and parents to complete the SDQ for each child, so for the ease of administration, the current study utilised the self-report version of the SDQ which was completed by the children in classroom settings. The 25-item self-report version of the SDQ was selected for its brevity, use of positive and negative self-descriptions, and ability to capture emotional and behavioural problems. The inclusion of both strength and difficulty items, and the balance of positive and negative behaviours makes the SDQ particularly suitable for research conducted in general populations where most of the children are healthy (Van Roy, Veenstra, & Clench-Aas, 2008). The self-report version of the SDQ was originally developed for use with children and adolescents aged between 11 and 16 years, although more recent studies have suggested that the SDQ may also provide valuable information about the psychopathology of children as young as 8 years of age (Muris et al., 2004). Van Roy et al. (2008) found support for the five factor structure of the SDQ across a wide age range of children and adolescents, including 10 to 19 year olds.

The SDQ was originally designed to meet the needs of researchers, clinicians, and educationalists (R. Goodman, 1997). It is routinely used in Child and Adolescent Mental Health Services (CAMHS) in Australia as a pre-treatment, post-treatment and follow-up measure (Hayes, 2007). An Australian study has shown the usefulness of the SDQ as an outcome measure for children and adolescents referred to CAMHS, demonstrating that it identifies behavioural and emotional changes in children and adolescents following clinical intervention (Mathai, Anderson, & Bourne, 2003).

Despite being a relatively new diagnostic instrument that has only been in use since 1997, there are studies from several different countries that have reported the psychometric properties of the self-report version of the SDQ (Becker, Hagenberg, Roessner, Woerner, & Rothenberger, 2004). It has been shown to be a reliable and valid method for assessing behavioural problems in children and adolescents in both clinical and research settings (Becker et al., 2004).

The internal reliability of the different self-report scales have been assessed using Cronbach's alpha coefficients (α) and demonstrated to be adequate. R. Goodman, Meltzer, and Bailey (2003) reported Cronbach's alpha coefficients of .82 for the total difficulties scale, .75 for the emotional problems scale, .72 for the conduct problems scale, .69 for the hyperactivity scale, .61 for the peer problems scale, and .65 for the prosocial behaviour scale. Results on the internal consistency in other research highlighted the homogeneous scale structure, with Cronbach's alpha coefficients for the total difficulties score ranging between .80 (R. Goodman, 2001) and .82 (R. Goodman et al., 1998) in England, .78 in Netherlands (Muris, Meesters, & van den Berg, 2003), .78 in Germany (Becker et al., 2004), and .71 in Finland (Koskelainen, Sourander, & Kaljonen, 2000). Table 3 highlights the internal reliability for each of the SDQ self-report scales as recorded in the current study.

Table 3

Cronbach's Alpha Coefficients for the SDQ Scales at Time 1 and 2

Scale	Number of items	α
Emotional problems time 1	5	.68
Emotional problems time 2	5	.72
Conduct problems time 1	5	.62
Conduct problems time 2	5	.62
Hyperactivity-inattention time 1	5	.69
Hyperactivity-inattention time 2	5	.72
Peer problems time 1	5	.52
Peer problems time 2	5	.66
Prosocial behaviour time 1	5	.62
Prosocial behaviour time 2	5	.57
Total difficulties time 1	25	.74
Total difficulties time 2	25	.77

Note. $N = 374$.

As highlighted in Table 3, adequate internal consistency was demonstrated for each of the SDQ scales in the current study, although the reliability for peer problems at time 1 and prosocial behaviour at time 2 was slightly lower than desirable. Both of these scales did however exhibit better reliability at the other time points.

Becker et al. (2004) demonstrated that the self-report version of the SDQ had good validity in differentiating between clinically defined cases and non-cases in a sample aged from 11 to 17 years, and in detecting different categories of psychiatric disorders within a clinical sample, particularly those with oppositional/conduct disorders (Becker et al., 2004). Interestingly, the self-report version of the SDQ was actually marginally better at predicting the presence of any psychiatric disorders than the parent version of the SDQ. R. Goodman (2001) also reported that in his nationwide epidemiological sample of 10,438 British young people aged between 5 and 15 years, the SDQ discriminated well between

children with and those without psychopathological symptoms. Furthermore, Muris et al. (2004) highlighted that the self-report scores of the SDQ differentiated well between children aged from 8 to 13 years who exhibited behavioural problems at school and those that did not.

Concurrent validity of the self-report version of the SDQ was also reported to be good. Using a sample of 562 children and adolescents, Muris et al. (2003) found that the scores on the SDQ correlated in a theoretically meaningful way with instruments that also measured the psychopathology of children and adolescents, for example, the Youth Self-Report (Achenbach, 1991). Substantial correlations were reported between the SDQ total difficulties score and Youth Self-Report total score (r = .74), SDQ emotional problems scale and Youth Self-Report internalising scale (r = .74) and SDQ conduct problems scale and Youth Self-Report externalising scale (r = .56).

Muris et al. (2004) established convergent validity for the self-report version of the SDQ using a non-clinical sample of children aged between 8 and 13 years. Positive correlations were found between the SDQ total difficulties scale and the Youth Self-Report externalising scale (r = .57), aggressive behaviour scale (r = .56) and delinquent behaviour scale (r = .45). In addition, negative correlations ranging from -.27 to -.32 were identified between the SDQ prosocial behaviour scale and the Youth Self-Report scales. The SDQ conduct problems and hyperactivity scales were most strongly related to the Youth Self-Report scales.

Using a sample of children between 5 and 16 years of age, Goodman, Lamping and Ploubidis (2010) reported that the five scales of the SDQ demonstrated good discriminant validity when predicting clinical disorders. Research has demonstrated largely consistent support for the five factor structure in the self-report, parent and teacher versions of the SDQ with samples in the United Kingdom (R. Goodman, 2001), Holland (Muris et al., 2003) and Sweden (Smedje, Broman, Hetta, & von Knorring, 1999).

In summary, the SDQ has been shown to be a reliable and valid method for assessing behavioural, emotional and relationship problems in children in both clinical and research settings (Becker et al., 2004). It is used to measure the four main domains of difficulties that trouble children e.g. emotional problems, conduct problems, hyperactivity-inattention, and peer problems, as well as personal strengths e.g. prosocial behaviour (Muris et al., 2004).

School Short Form of the Coopersmith Self-Esteem Inventory

To assess the self-esteem of the children in the sample, the School Short Form of the Coopersmith Self-Esteem Inventory (Coopersmith, 1981) was used because it measures global self-esteem in children aged 8 to 15 years. This instrument is used extensively in the assessment of children's global self-esteem or overall sense of worth (Hills, Francis, & Jennings, 2011). It is derived from the Coopersmith Self-Esteem Inventory (Coopersmith, 1967) that consists of 50 items and an additional 8 items that measure social desirability (Wylie, 1974). This instrument is specifically designed for children and the original sample used by Coopersmith (1967) consisted of grade 5 and 6 students. The scale was originally designed to measure global self-esteem using four specific domains, and assesses children's evaluative attitudes towards the self with regard to peers, parents, school and personal interests. In a review of eight different measures of self-esteem for school age children, Chiu (1988) recommended that the Coopersmith Self-Esteem Inventory was useful for classroom screening of self-esteem.

The School Short Form of the Coopersmith Self-Esteem Inventory was developed to provide a shorter alternative to the full-length scale when survey administration time is limited (Hills et al., 2011). The total score correlation of the full-length scale with the School Short-Form of the Coopersmith Self-Esteem Inventory is .86 (Coopersmith, 1967). The shorter version of the scale consists of the 25 items

that demonstrated the best item-total score correlations in the full-length scale (Hills et al., 2011). This shortened 25-item version of the scale is also available in an Adult Form.

Coopersmith (1981) defined self-esteem as “the evaluation a person makes, and customarily maintains, of him or herself; that is, overall self-esteem (or global self-esteem) is an expression of approval or disapproval, indicating the extent to which a person believes him or herself competent, successful, significant, and worthy” (p. 1-2). He described that children are not born with a self-concept and ideas about whether they are good or bad, smart or unintelligent, lovable or unlovable. Instead they develop these beliefs. Over time, children create pictures of themselves or self-images largely based on the way in which they are treated by the significant people in their lives, such as parents, extended family, teachers and peers. The self-image is the content of children’s perceptions and beliefs about themselves. The positive or negative attitudes by which children view their self-image and the evaluations they make about it forms children’s self-esteem.

The items of the School Short Form of the Coopersmith Self-Esteem Inventory relate to three main areas including: global self-esteem or overall evaluation of the self e.g. “I give in very easily”; relations with parents e.g. “My parents usually consider my feelings”; and relations with peers e.g. “I am popular with kids my own age”. Children are instructed to respond to each question by stating whether the statement is “Like Me” or “Unlike Me”, with one point being assigned for each item denoting high self-esteem. The score is the sum of responses that represent high self-esteem. This score is then multiplied by four which results in a maximum possible total score of 100 that can then be easily compared to the other versions of the instrument, namely the full-length scale of the Coopersmith Self-Esteem Inventory and the Adult Form of the Coopersmith Self-Esteem Inventory (Coopersmith, 1981). The total score ranges from 0 to 100 with higher scores indicating greater self-esteem (Hills et al., 2011). Detailed scoring procedures for

the School Short Form of the Coopersmith Self-Esteem Inventory are shown in Appendix E.

Much of the research that has investigated the psychometric properties of the Coopersmith Self-Esteem Inventory has been conducted on the full-length scale or adult version of the scale. Hughes (1984) conducted a review of the 19 most frequently used scales for measuring the self-esteem of children and concluded that there was sufficient evidence to suggest that the Coopersmith Self-Esteem Inventory demonstrated reasonably good internal consistency. Cronbach's alpha coefficients (α) for the Adult Form of the Coopersmith Self-Esteem Inventory have been reported at .83 (Van Tuinen & Ramanaiah, 1979) and .75 (Ahmed, Valliant, & Swindle, 1985).

The School Short Form of the Coopersmith Self-Esteem Inventory has also demonstrated internal consistency. In two separate studies, Hills et al. (2011) reported internal consistency for the School Short Form of the Coopersmith Self-Esteem Inventory with a Cronbach's alpha coefficient of .83 and Hills, Francis, and Thomas (2007) described a Cronbach's alpha coefficient of .65. Francis, James, and Jones (1998) also reported adequate Cronbach's alpha coefficients of .77 for both the males and females in their sample, and Chapman and Mullis (2002) described Cronbach's alpha coefficients of .76 for males and .81 for females. In the current study, high internal consistency was demonstrated for the School Short Form of the Coopersmith Self-Esteem Inventory with Cronbach's alpha reported at .84 at time 1 and .87 at time 2.

Coopersmith (1967) reported test-retest reliability coefficients for the full-length scale of .88 for a sample of 30 grade 5 children after a 5-week interval, and .70 with a different sample of 56 grade 5 children after a 3 year interval. Using a French version of the School Short Form of the Coopersmith Self-Esteem Inventory, Potard et al. (2015) demonstrated test-retest reliability coefficients of

.79 for the personal self-esteem subscale, .68 for the social subscale and .53 for the family-derived self-esteem subscale after a 5-week interval, and test-retest reliability coefficients of .65 (personal), .53 (social) and .61 (family) for each of the subscales after a 1 year interval.

Convergent validity has been reported for different versions of the Coopersmith Self-Esteem Inventory. Byrne (1983) demonstrated correlations ranging from .58 to .60 for the full-length scale with the Rosenberg Self-Esteem Scale (Byrne, 1983). Convergent validity has also been reported for the adult version of the scale with correlations of .75 with the Tennessee Self-Concept Scale and .72 with the Janis-Field Feelings of Inadequacy Scale (Van Tuinen & Ramanaiah, 1979). In addition, Potard et al. (2015) demonstrated convergent validity for the 25-item French version of the scale with correlations between .32 and .73 for the personal, social and family-derived self-esteem subscales with the Rosenberg Self-Esteem Scale.

Discriminant validity has also been found for the Coopersmith Self-Esteem Inventory. The adult version of the scale was reported to be unrelated to the Lie Scale of the Eysenck Personality Inventory (Ahmed et al., 1985), and unrelated to different scales measuring the need for order and routine with correlations ranging from .09 to .17 (Van Tuinen & Ramanaiah, 1979).

The School Short Form of the Coopersmith Self-Esteem Inventory has been widely used in English, although more recently has been translated into French (Potard et al., 2015) and Welsh (Hills et al., 2007). While these studies proposed even shorter versions of the scale, they both demonstrated evidence for the three factor structure that included personal, social and family-derived self-esteem. These studies both highlighted the cross-culturally stable factorial structure of the School Short Form of the Coopersmith Self-Esteem Inventory, thereby confirming its construct validity.

In summary, the School Short Form of the Coopersmith Self-Esteem Inventory is a frequently used measure that assesses children's global self-esteem (Hills et al., 2011). It has been shown to be a reliable and valid measure in the assessment of global self-esteem, and useful in the classroom screening of children's self-esteem.

Teacher Surveys

All of the teachers completed two short surveys. The first survey, the Teacher Survey (see Appendix F) was completed before the trial began to establish which teachers had already conducted meditation with their class. The second survey, the Teacher Post-Survey (see Appendix G) was completed by the teachers at the end of the trial and contained questions regarding the teachers' experiences with the guided meditation or reading with their class.

Teacher Survey

During the Teacher Information Session conducted in each school, the teachers completed the Teacher Survey (see Appendix F) which outlined if any meditation was being conducted with the class. The teachers answered the following questions: "How often have you used meditation with your class this year?" (Responses included: "Never"; "Rarely e.g. a few times this year"; "Sometimes e.g. once a week"; "Frequently e.g. a few times a week"; and "Every day"); and "If you use meditation, what type of meditation do you utilise in your classroom?"

The Teacher Survey was used as a manipulation check to establish which teachers had already conducted meditation with their class before the trial began. It was important to ascertain whether meditation was being conducted in the non-meditating schools (Schools 1 and 2), and how frequently meditation was being practised in the meditation school (School 3).

Teacher Post-Survey

The Teacher Post-Survey (see Appendix G) provided qualitative information about the teachers' experiences with the guided meditation or reading with their class. It was emailed individually to each teacher by the researcher after the completion of the guided meditation and reading programs, and the time 2 survey administration. The Teacher Post-Survey contained the following questions: "Did your class enjoy the meditation/reading? Why/Why not?"; "Did you notice any changes in your students after completing the meditation/reading? If so, what?"; "Do you think the meditation/reading was beneficial for your students? Why/Why not?"; and "Will you continue with the meditation/reading? Why/Why not?" Teachers in the guided meditation group reported on the guided meditation completed with their class, and the teachers in the control group described the reading conducted with their class. In some classes where there was a job-share arrangement and two teachers shared the teaching responsibilities for the class, the two teachers completed the Teacher Post-Survey together.

The purpose of the Teacher Post-Survey was to gather information about how the study was conducted by the teachers, and how it was received by the children in each class. It was administered to assess if there were any differences across the teachers in how the meditation/reading was administered and received by the children, and to ensure that the teachers were not having an effect on the results of the study. It was anticipated that the Teacher Post-Survey may highlight differences between the classes in their enjoyment of the guided meditation/reading, the changes experienced by the children as a result of the guided meditation/reading, the benefits of the guided meditation/reading, and whether or not the teachers would continue with the guided meditation/reading after the trial.

Procedure

Ethics Approval and School Recruitment

Initial approval for this research project was obtained from the Swinburne University Human Research Ethics Committee (see Appendix H). Permission to conduct the study in Government primary schools was then granted from the Department of Education and Early Childhood Development (see Appendix I). Permission to conduct the study in Catholic primary schools was obtained from the Catholic Education Office (see Appendix J). Permission was also granted from Amy Hamilton, the author of "Indigo Dreaming: Meditations for Children" CD (Hamilton, 2006) to use her guided meditations in the study (see Appendix K).

Government and Catholic primary schools were invited to participate in the study and School Principals received a School Recruitment Pack, which included a Principal Letter (see Appendix L for Government Schools and Appendix M for Catholic Schools), School Agreement (see Appendix N), Time 2 Meditation Survey (see Appendix B), Parent Information Sheet (see Appendix O), Parent Consent Form (see Appendix P), and Permission from the Department of Education and Early Childhood Development (see Appendix I) or Catholic Education Office (see Appendix J). School Principals were then contacted by the researcher in order to provide information about the study and gain approval to conduct the research project in the school. Once permission was granted, School Principals signed the School Agreement (see Appendix N) which outlined the requirements of the school in participating in the study.

After the School Principal agreed to participate in the study, the researcher received information regarding the number of grade 5 and 6 classes in each school. Schools 1 and 3 contained 3 grade 5 classes and 3 grade 6 classes while School 2 had 7 composite grade 5/6 classes. As the guided meditation and

control groups were to be conducted in established grade 5 and 6 classes, the 13 classes from the non-meditating schools (Schools 1 and 2) were then randomly assigned to the guided meditation group or control group using the computer generated program, MS Excel. Due to the nature of established class groups in schools, and the fact that classes were to complete the program as a class group, it was not feasible to randomly assign children to the guided meditation or control groups. Instead, classes were randomly allocated to the guided meditation or control groups. It would have been ideal to randomly select schools in Melbourne and then assign them to either the guided meditation or control groups, however this was impractical due to the constraints of the research project and the large number of schools declining participation in the study. The generalisability of the results are therefore jeopardised because the schools chosen for the study may be different to the general population of schools.

The study conducted on Schools 1 and 2 investigating the outcome hypothesis and comparing the health outcomes for children in the meditation and control groups was a randomised controlled trial. However, no randomisation occurred for School 3 as the children in this school were already participating in regular meditation before the study began. This study therefore was not entirely a randomised controlled trial. During school recruitment, early discussions revealed that the children in School 3 were completing regular meditation. As the school was very keen to be involved in the research project, investigation on the difference between first time meditators and regular meditators was then explored. School 3 therefore consisted only of guided meditation groups and contained no control group. Of the 19 grade 5 and 6 classes in the study, there were a total of 12 classes allocated to the guided meditation group, and 7 classes assigned to the control group.

Teacher Information Session

A twenty minute Teacher Information Session was then conducted by the researcher with the grade 5 and 6 teachers at each school. The researcher explained the study, survey administration, and the random allocation of classes to the guided meditation or control groups. The researcher also answered questions about the study, and the teachers were encouraged to contact the researcher in the event that they wished to discuss the research project further, or if any concerns arose during the course of the study.

During the Teacher Information Session, the teachers completed the Teacher Survey (see Appendix F) to establish which classes had already completed meditation. The teachers regularly conducting Christian Maranatha meditation in School 3 reported that they frequently practised meditation with their classes three or four times a week. The teachers from the non-meditating schools (i.e. Schools 1 and 2) reported that they did not use meditation on a regular basis. All these teachers stated that they had never used meditation with their class, except for one teacher in each school who reported conducting meditation with their class a few times during the year.

At the Teacher Information Session, the teachers were also issued with a Teacher Information Pack, which included a Teacher Information Sheet (see Appendix Q for the Guided Meditation Group, Appendix R for the Control Group, and Appendix S for School 3), Survey (see Appendix A), Meditation Log Book (see Appendix T) or Reading Log Book (see Appendix U), Meditation Sign (see Appendix V) or Reading Sign (Appendix W), Survey Class List (see Appendix X), and a collection of Parent Information Sheets (see Appendix O), Parent Consent Forms (see Appendix P), and stress balls to distribute to the children in their class as a thank-you gift for returning their Parent Consent Form.

Guided Meditation Group

Teachers in the guided meditation group were given additional training by the researcher on the delivery of the guided meditation to ensure that the intervention was presented by all the teachers in a standardised way. To ensure the uniformity of presentation among all the guided meditation groups, the instructions for the guided meditations were recorded onto a CD. The teachers were issued with a Guided Meditation CD (see Appendix Y) which contained guided meditations that were selected from the "Indigo Dreaming: Meditations for Children" CD (Hamilton, 2006). These guided meditations were selected for the study because they incorporated each of the five components necessary to be characterised as meditation. As previously discussed in Chapter 2, the practice needs to encompass the use of a specific technique, muscle relaxation, logic relaxation, a self-induced state, and a self-focus skill (Cardoso, de Souza, Camano & Leite, 2004). Also, these guided meditations were appropriate for the sample as they were developed specifically for use with children.

The Guided Meditation CD included five 10 minute guided meditations. Each of the guided meditations started in exactly the same way with muscle relaxation, breathing exercises, the magic worry hat, the crystal pendant and then continued with the individual imagery focus for the day, and finished with a grounding exercise. During the muscle relaxation, the children became aware of their body and released tension in a fun way by imagining they were an elastic band and stretched their individual body parts. The breathing exercises encouraged the children to imagine their stomach was a big balloon and they used long slow deep breaths in and then let all the air out of their balloon. In the magic worry hat exercise the children imagined putting a magic worry hat on their head that took away anything that was worrying them or the busy feeling that was in their mind. The crystal pendant exercise asked the children to imagine themselves wearing a special pendant around their neck that would protect them on their journey while they travelled to the imagery focus for the day. Finally, the grounding exercise

completed the guided meditation and the children wiggled their fingers and toes and stretched out as far as they could, and slowly opened their eyes.

The guided imagery and fantasy used on the Guided Meditation CD was designed to appeal to the children's imagination. There were five guided meditations with a different focus for each day of the week to provide the children with variety. The imagery focus included: Monday: Circle of Light; Tuesday: Wishing Tree; Wednesday: Sunrise; Thursday: Sunset; and Friday: Magic Garden.

On Monday with the Circle of Light, the children imagined drawing or painting a big circle around themselves and filling the circle with pure white light that covered their whole body and made them feel warm, safe and protected, as only loving feelings and positive thoughts could enter the circle. The children were encouraged to put a circle of white light around someone they loved (a family member, friend or pet, or even around their house), and to surround themselves in a circle of white light whenever they felt it necessary.

On Tuesday with the Wishing Tree, the children imagined standing in a beautiful forest, listening to the sounds of the forest. The children then imagined walking and stopping to stand in awe at a golden tree which glowed and radiated light. The tree told the children that it was a wishing tree and invited the children to make a wish from their heart for themselves or for the Earth. The children spent time thinking about their wish and said it twice in their mind, followed by thank-you.

On Wednesday with the Sunrise, the children imagined sitting in a beautiful meadow, high up on a mountain and enjoyed the quiet and stillness as all the animals, birds and insects were still asleep. Then the children felt the warmth of the sun on their face and saw the first rays of sunrise trickle across the meadow. A ladybird landed on the children's shoulder and whispered that the sunrise begins a new day and if you start the day with lots of positive thoughts, then you

can make them happen and you will have a great day. The children relaxed in the meadow and bathed in the morning sun, thinking lots of positive thoughts.

On Thursday with the Sunset, the children imagined sitting on a white, sandy beach and breathing in the fresh salty air. The children watched the horizon and the sun as it set over the water and slowly sank in the distance. The children felt the colours of the sunset wash over them, making them feel warm and filling them with feelings of peace and love. The children spread these feelings of peace and love across everyone on the Earth. The children thought about how magnificent the Earth was, and enjoyed their connection to the Earth and all the people on it.

On Friday with the Magic Garden, the children imagined being in their own magic garden, that only they entered. As the children entered their garden, they felt calm, relaxed and very safe, and all the stress and tension left their body. The children noticed a basket of magic seeds and created whatever they wished in their garden. The children explored their garden and saw all the wonderful things they created. The children then found a special place to relax to enjoy some time on their own to solve a problem or just think quietly. While the children were relaxing in their special place a little bird landed on their shoulder and whispered a special message in their ear. This message was something they needed to know to help them in their life. The children listened carefully to the message, and then thanked the little bird. The children were encouraged to visit their magic garden whenever they wished.

Meditation models designed for and used with adults usually consist of 15 to 20 minutes of meditation twice a day (Wisner et al., 2010). However, when working with children and adolescents, studies have demonstrated that briefer meditation periods can be effective without compromising the benefits to students (Barnes et al., 2004; Rosaen & Benn, 2006). As there is no research outlining the use of guided meditation with children in schools, the timing of the guided meditations selected in this study were based on the premise outlined by Wisner et al. (2010)

that an investment of 10 to 12 minutes of mindfulness or transcendental meditation practised once per day or several times a week provided benefits to students. While the review on meditation research conducted by Wisner et al. (2010) focused on students from the age of 12 years, it was deemed appropriate to use this timing in the current study with the sample of children ranging from 10 to 12 years of age. The daily 10 minute guided meditations were delivered over 8 weeks in the current study. The number of weeks selected for the study was based on the evidence provided by Wisner et al. (2010) that meditation was effective for use in groups and for somewhat short periods of time, for example, four to eight weeks.

The teachers in the guided meditation group introduced the study to the class and explained that meditation is a way of relaxing the body and calming the mind. The teacher advised the children that they would listen to a guided meditation CD for 10 minutes every day for 8 weeks. Teachers explained that meditation is an opportunity for the children to keep their full attention within themselves and that the children do not need to be concerned with what others are doing. If others move or cough, or there are outside noises, the children were instructed to pay no attention to them. The teachers explained to the children that their job was to keep their mind focused within themselves and if their mind wandered, they were to gently let go of what they were seeing, hearing or thinking, and bring their attention back to the guided meditation.

The teachers in the guided meditation group conducted the daily 10 minute guided meditation sessions at times that were convenient to their class. To avoid interruptions, the teachers began the guided meditation sessions in the classroom by dimming the lights and placing the Meditation Sign outside the door that read “Come back in 10 minutes. We are meditating.” (see Appendix V). The teachers then asked the children to sit in a comfortable position on a chair or cross-legged, or lie on the floor with their eyes closed. Before every meditation session began, the teachers reminded the children that if they were distracted during the guided

meditation and their mind wandered off, they were to acknowledge the thoughts they were having without making any judgment about them, and then shift their attention back to the guided meditation.

The teachers used the Guided Meditation CD and conducted uninterrupted guided meditation daily with their class for 10 minutes over 8 consecutive weeks. After completing the guided meditation, the teachers provided an opportunity for the children to discuss their experiences of the guided meditation, and address any questions or concerns from the children. The teachers were encouraged to emphasise that there were no right or wrong experiences with guided meditation, and it was very much a personal experience.

At the end of every guided meditation session, teachers completed the Meditation Log Book (see Appendix T) outlining the date and time the guided meditation was conducted, the meditation track used, and whether any children were absent. The teachers were also encouraged to add optional comments on the Meditation Log Book about their experiences conducting the guided meditation with their class, for example, how the children responded to the guided meditation, how the children felt after the guided meditation, any questions that were asked by the children, or any barriers the teachers experienced to the guided meditation. The Meditation Log Book also advised the teachers which CD track was to be used for each day e.g. Track 1 for Monday, Track 2 for Tuesday etc. Teachers were advised of the importance of conducting daily guided meditation, however in the event that they were unable to conduct guided meditation on a particular day, this was recorded on the Meditation Log Book.

All the teachers in the guided meditation group completed their Meditation Log Book. The total number of guided meditation sessions possible over the course of the study was 40 sessions. As the teachers recorded child absences on the Meditation Log Book, records showed that the number of guided meditation sessions completed by the children ranged from 6 to 39 sessions. The average

number of guided meditation sessions completed by the children in the guided meditation group was 29.53 sessions. For an individual breakdown of the average number of guided meditation sessions completed by the children in each of the classes see Tables 21 to 23 in Chapter 7.

Control Group

The teachers in the control group explained to the class that they would have the opportunity to read quietly to themselves for 10 minutes every day over 8 consecutive weeks. The teachers conducted the daily reading sessions at times that were convenient to their class. Reading was selected as a control procedure because aspects of reading are similar to that of meditation, namely the seated or lying body position, the quiet environment, and the opportunity to carry out the treatment as a group (Sabel, 1980). However, reading was not expected to have an impact on the outcome measures, because the reading did not incorporate the meditative journey of the guided meditation which included muscle relaxation, breathing exercises, releasing worries, protection exercises and grounding exercises.

To avoid interruptions, the teachers began the reading sessions in the classroom by placing the Reading Sign outside the door that read “Come back in 10 minutes. We are reading.” (see Appendix W). The teachers then asked the children to sit in a comfortable position on a chair or cross-legged, or lie on the floor. The children read a book of their own choice to themselves uninterrupted for 10 minutes every day over 8 consecutive weeks. At the end of every reading session the teachers completed the Reading Log Book (see Appendix U) outlining the date and time the reading session was conducted, whether any children were absent, and optional comments about the reading session. Teachers were advised of the importance of conducting daily reading. However, in the event that they were unable to conduct reading on a particular day, this was recorded on the Reading Log Book.

All the teachers in the control group completed their Reading Log Book. The total number of reading sessions possible over the course of the study was 40 sessions. From the Reading Log Books, records showed that the number of reading sessions completed by the children ranged from 11 to 38 sessions. The average number of reading sessions completed by the children in the control group was 32.57 sessions. For an individual breakdown of the average number of reading sessions completed by the children in each of the classes see Tables 21 to 23 in Chapter 7.

Survey Consent and Administration

In agreeing to participate in the study, schools automatically included the guided meditation and reading in their existing curriculum. Permission for the children to participate in the surveys was sought from parents/guardians via the Parent Consent Form (see Appendix P). Teachers distributed the Parent Consent Forms and Parent Information Sheets (see Appendix O) to the grade 5 and 6 children to be sent home to parents/guardians. The Parent Information Sheet provided information about the research project and survey. The children returned the signed Parent Consent Form within a week, on or before the day of survey administration. The teachers collected the signed Parent Consent Forms from the children and recorded on the Survey Class List (see Appendix X) if the children had returned their signed Parent Consent Forms and if they had permission to complete the surveys.

A thank-you gift (stress ball) was given to each child by the teacher upon returning a signed Parent Consent Form, irrespective of whether or not the child was given permission to participate in the surveys. The teachers were advised not to inform their class about the thank-you gift prior to the distribution of the Parent Consent Forms to ensure that the stress ball was not perceived as an incentive. When the first child in each class returned a signed Parent Consent Form, the teachers gave

him/her a stress ball and explained that all the children would receive a thank-you gift for returning their signed Parent Consent Form, even if their parents/guardians indicated that they would not complete the surveys.

Surveys were conducted at times convenient to the three schools. Time 1 surveys were completed before the guided meditation and reading commenced, and the time 2 surveys were administered after the completion of the eight-week programs. Both the time 1 and time 2 surveys were administered in the grade 5 and 6 classrooms by the researcher to ensure standardised survey administration was conducted amongst all the classes. Only those students with parental permission were allowed to take part in the surveys.

The duration of the survey administration was approximately 30 minutes. Before completing the survey, verbal instructions were given to the children (see Survey Administration Instructions as Appendix Z) and Surveys (see Appendix A or Appendix B for the Time 2 Meditation Survey) and Student Information Sheets (see Appendix AA) were distributed. The researcher introduced herself, explained the nature of the research being conducted, and answered any questions from the children. The researcher then read the Student Information Sheet to the children.

The children were assigned a student ID number and a school ID number that incorporated the child's class group so that the data from each child could be tracked over the two different time points. The researcher asked the children to look at their survey and the small white piece of paper stapled to the front highlighting their name, school, grade, and student ID number. The student ID number on the small white piece of paper corresponded to the student ID number written on the front of the survey. The children checked that this information was correct, tore off the white piece of paper from the survey, left it on their desk and the researcher collected it. If any information on this paper was incorrect, the children wrote down the correct information and left it on their desk for collection

by the researcher. This procedure was conducted to ensure that each child completed the correct survey because each child's data were being tracked from time 1 to time 2. The researcher explained to the children that it was important that they did not write their name on the survey. They were also instructed to ask questions at any time if they were unsure of a question.

The researcher explained the procedure for completing the survey and the two different scoring systems (e.g. "Not True", "Somewhat True", and "Certainly True" for the SDQ, and "Like Me" and "Unlike Me" for the School Short-Form of the Coopersmith Self-Esteem Inventory). To clarify the scoring system, examples were written on the whiteboard and discussed with the children. For example, the researcher said, "I play sport outside school" and the children responded by raising their hand to the response that best described themselves e.g. "Not True", "Somewhat True" or "Certainly True". The researcher then said, "I smile a lot", and the children answered by raising their hand to the response "Like Me" or "Unlike Me". The researcher stressed the importance of providing only one response to every item in the survey. The children were informed that the survey was not a test, and that there were no right or wrong answers, and that the information they provided in the survey was strictly confidential.

Before commencing the survey, the children were given the opportunity to withdraw from the study. The researcher explained that whilst the children's parents/guardians and the School Principal had given permission for them to participate in the survey, they were under no obligation to do so, and could withdraw at any time without explanation.

Each item in the survey was read aloud by the researcher and the children completed their responses immediately. The children placed a tick next to the statements that best described themselves. Assistance was given to those children who required it. At the completion of the survey, the children checked over their responses to ensure they answered every question. The researcher

thanked the children for their participation, and explained that if any concerns arose regarding the survey, they could speak with the researcher, their class teacher or the Grade 5/6 Co-ordinator at their school.

Some children were absent from school on the day of the survey administration so the researcher returned to the school at a later date and conducted the survey administration with a small group of children. If any child was absent at this survey administration, an Absent Survey Pack containing the Absent Survey Instructions (see Appendix AB), Student Information Sheet (see Appendix AA), Survey (see Appendix A or Appendix B for the Time 2 Meditation Survey) and self-addressed envelope was left for the child with his/her teacher. The teacher was also issued with a Teacher Absent Letter (see Appendix AC for the Time 1 Survey Teacher Absent Letter and Appendix AD for the Time 2 Survey Teacher Absent Letter) with instructions explaining the administration of the survey for the absent child. To maintain the integrity of the study, the teachers were encouraged to adhere to the instructions provided. It was particularly important that the time 1 surveys were completed prior to the commencement of the guided meditation and reading, and the time 2 surveys were done immediately after the completion of the guided meditation and reading.

Children were issued with the Absent Survey Pack upon returning to school. The children completed the survey in a supervised setting during school hours. The children read the Absent Survey Instructions and Student Information Letter, checked the details on the small white piece of paper were correct, and completed the survey. The children placed the completed survey in the envelope provided, sealed it and then returned the envelope to their teacher. The envelope was pre-stamped and self-addressed to the researcher and was mailed by the teacher.

The researcher liaised with the Grade 5/6 Co-ordinator to ensure that feedback on the survey administration was provided, all absent surveys were returned, and all student concerns were addressed throughout the course of the study. After

the completion of the guided meditation and reading programs, and the time 2 survey administration, the teachers in each school completed the Teacher Post-Survey (see Appendix G) and commented on the children's experiences of the guided meditation or reading. The Teacher Post-Survey was emailed individually to each teacher by the researcher.

Timing of the Study

The study was conducted in 2013. Schools were approached in Term 1, 2013 for participation in the study and the consent process was conducted over Term 2, 2013. The time 1 surveys were then administered at the end of Term 2, 2013. The trial was carried out over the first eight weeks of Term 3, 2013. As School 2 had a School Curriculum Day in week 7 and the school was closed for a day, this session was completed at the end of the program in week 9 of Term 3, 2013. The time 2 surveys were then completed immediately after the completion of the guided meditation and reading programs at the end of Term 3, 2013. Eleven children were away during the time 2 survey administration at the end of Term 3, 2013 so these surveys were completed in Term 4, 2013.

Chapter 7: Results

Overview

This chapter presents the analyses of the data. Firstly, preliminary data analysis is discussed including data entry, handling missing data, and testing for outliers and assumptions. As three schools from different suburbs in metropolitan Melbourne were used in the study, the children's scores from time 1 and time 2 for each of the outcome measures are then compared across the three schools to determine if the children from each school are different. Scores from the SDQ and self-esteem severity groups are then presented. This includes the methodology used for establishing the severity groups and the results of the analyses conducted to identify the types of children found in the severity groups using gender, grade, language spoken at home, school, and the number of sessions children completed during the course of the study.

A series of analyses are then discussed to test the three hypotheses: 1) children in the guided meditation group would experience greater reductions in emotional problems, conduct problems, hyperactivity-inattention, and peer problems, and greater improvements in prosocial behaviour and self-esteem than the children in the control group; 2) the effects of guided meditation would be stronger for children with a clinical presentation than children with normal mental health ratings; and 3) children who have practised regular meditation experience even greater reduction in emotional problems, conduct problems, hyperactivity-inattention, and peer problems, and greater improvements in prosocial behaviour and self-esteem than first time meditators. Following this, qualitative data is presented outlining the responses reported by the teachers in the Teacher Post-Survey. Teacher effects are then addressed in order to investigate if teachers had an effect on the scores for the children in their class. After that, the results are presented for the children's responses to whether they enjoyed the guided

meditation, thought the guided meditation was beneficial and wanted to continue with the guided meditation. Finally, the chapter concludes with an overall summary of the results from the study.

Preliminary Data Analysis

Data Entry

All data entry, screening and analyses were performed using SPSS Version 22. During the data entry phase, rules were established for incongruent responses made by children on the survey. If a child ticked in the middle of two responses, for example in between “Not True = 0” and “Somewhat True = 1”, the child was given a score of 0.5 because it was assumed that the child intended for the response to be in between the two given values (*n* = 1). Similarly, if a child ticked in the middle of “Somewhat True = 1” and “Certainly True = 2” the child was assigned a score of 1.5 (*n* = 4). Missing values were coded as 999. In the event that two responses were ticked for a particular question, the item was coded as a missing value (i.e., 999) as it was uncertain which response the child preferred.

Handling Missing Data

Of the 388 children given permission to participate in the surveys, 14 children did not complete both time 1 and time 2 surveys as 12 children withdrew from the study during survey administration, one child left the school while the study was being completed, and another child was absent for the complete duration of the study. The data from these 14 children was eliminated which resulted in a sample of 374 children on which the data analyses were performed.

Before computing scale scores the raw data were screened for out of range or implausible values using frequency tables. Missing data were identified and a

total of 38 missing responses from the time 1 and time 2 surveys were recorded. There was one case of missing data from the time 1 and time 2 surveys for 11 SDQ items and 13 self-esteem items. Two cases of missing data were identified for two SDQ items and two meditation questions, and three cases of missing data were found for one self-esteem item and one meditation question.

Little's MCAR test (Little, 1988) was conducted for each of the SDQ and self-esteem variables to determine if the missing data were random. For all of the SDQ variables, Little's MCAR test was found to be not significant at $p < .05$, but significant for self-esteem ($\chi^2 = 354.64$, df = 261, $p < .001$). Upon inspection of the patterns of missing values, there were 11 patterns, 10 of which only had 1 child, and 1 pattern which was recorded for 3 children. Given that there was no systematic pattern of missing data, it was decided that the missing values were estimated using the Expectation Maximisation Method (EM Method). The EM Method is known to be the simplest and most effective approach for estimation when preliminary analysis provides evidence that the scores are missing at random (Tabachnick & Fidell, 2007). Missing value analysis for each of the SDQ and self-esteem variables was conducted using the EM Method.

As the self-esteem items were categorical responses i.e. "Like Me = 1" and "Unlike Me = 2", the estimated scores were rounded up or down according to the following rules: estimated values from 1.1 to 1.3 were recoded as 1, estimated values from 1.4 to 1.6 were recoded as 1.5, and estimated scores from 1.7 to 1.9 were recoded as 2.

Testing for Outliers

Preliminary investigation of the data involved testing for univariate outliers. Z-scores were calculated for each of the dependent values (emotional problems, conduct problems, hyperactivity-inattention, peer problems, prosocial behaviour,

total difficulties and self-esteem) across the guided meditation group, control group and severity groups at time 1 and time 2. The total difficulties scale of the SDQ was used as a dependent variable in each of the analyses in this thesis as it provided a total sum of the children's emotional problems, conduct problems, hyperactivity-inattention, and peer problems (A. Goodman et al., 2010).

Outliers were identified using z-scores, and scores less than -3.29 and greater than 3.29 were considered significant at $p < .001$. A total of 11 outliers were found to be significant at $p < .001$ with one outlier being identified for each of the following variables: conduct problems at time 1, prosocial behaviour at time 2, total difficulties at time 2, and self-esteem at time 2. There were two outliers identified for emotional problems at time 2 and conduct problems at time 2, and three outliers were identified for peer problems at time 2. These outliers were all indicative of the high levels of difficulties experienced by some children. While the sample used in this study was a non-clinical population, it was expected that some children may report a clinical presentation. As the outliers were all indicative of the range of difficulties experienced by children, the outliers were retained. In addition, as it was important to maintain sufficient power to conduct the analyses required to test the hypotheses, these cases were included in all subsequent data analyses.

Testing for Assumptions

A series of analyses were conducted to test the assumptions for normality and homogeneity of variance. As mentioned by Tabachnick and Fidell (2007), sphericity is not considered an issue when a study involves only two treatment groups, as is the case with the present study that includes only a guided meditation group and control group.

A test for normality was conducted for each of the SDQ scales and self-esteem scale. Table 4 displays the standardised values calculated for skewness and kurtosis, along with other descriptive statistics for each of the scales at time 1 and 2.

Table 4

Descriptive Statistics for the Scales at Time 1 and 2

Scale	Minimum	Maximum	Mean	*SD*	Z Skewness	Z Kurtosis
Emotional problems time 1	0	9	3.15	2.23	3.74*	-1.79
Emotional problems time 2	0	10	3.08	2.34	5.99*	0.74
Conduct problems time 1	0	9	1.64	1.64	9.97*	7.11*
Conduct problems time 2	0	8	1.60	1.61	9.50*	6.08*
Hyperactivity-inattention time 1	0	9	3.61	2.17	2.57	-1.49
Hyperactivity-inattention time 2	0	10	3.57	2.24	2.37	-2.05
Peer problems time 1	0	8	1.87	1.66	6.44*	0.82
Peer problems time 2	0	9	1.66	1.73	12.04*	11.32*
Prosocial behaviour time 1	1	10	8.04	1.58	-7.34*	3.72*
Prosocial behaviour time 2	1	10	8.02	1.57	-6.12*	3.03
Total difficulties time 1	0	28	10.28	5.71	5.20*	0.16
Total difficulties time 2	0	34	9.91	5.92	6.81*	2.98
Self-esteem time 1	16	100	72.91	19.46	-5.83*	-0.83
Self-esteem time 2	12	100	72.49	21.43	-6.60*	-0.38

Note. $N = 374$.
*Significant at $p < .001$.

As presented in Table 4 many of the Z-scores for skewness and kurtosis scores were significant at $p < .001$, indicating that for many of the dependent variables the normality assumption was violated. Many of the analyses conducted for the study were analysis of variance (ANOVA), and ANOVA has been shown to be robust to violations of skewness and kurtosis if sample sizes are relatively similar and the sample is not too small (Tabachnick & Fidell, 2007). The patterns of skewness and kurtosis found in the data are what one would expect in a normal population. The sample sizes for the severity groups were unequal as each of

the SDQ severity groups contained only a small group of children as highlighted in Table 7. This is to be expected as the sample was drawn from a non-clinical population. Given that the sample was a non-clinical sample of school aged children, it was anticipated that the distributions on the outcome measures would reflect population norms for levels of children's difficulties. It is therefore advised that the results involving the severity groups should be treated with caution.

The homogeneity of variance was also tested for each of the dependent variables at time 1 and time 2. Levene's Test was used to assess the homogeneity of variance from each of the ANOVAs conducted for testing the hypotheses. Schools 1 and 2 were combined and School 3 was treated independently. The results indicated that most of the dependent variables were not significant at $p < .001$. Levene's Test was found to be significant at $p < .001$ for emotional problems, hyperactivity-inattention and self-esteem at time 1, and peer problems and self-esteem at time 2 for Schools 1 and 2, and for self-esteem at time 1 and 2 for School 3. The homogeneity of variance assumption was violated for many of the dependent variables indicating that the variance was not the same across the guided meditation group, control group and severity groups at time 1 and time 2. As previously mentioned, caution should be exercised when interpreting the results involving the severity groups.

Comparison of Schools

As the three schools used in the study were from different suburbs in metropolitan Melbourne, a series of analyses were conducted to compare the baseline scores and post-test data for the children in each of the schools in order to ascertain if the schools were different in any way. It was expected that School 3 would be different to Schools 1 and 2 as the children in School 3 were already practicing regular meditation prior to the commencement of the study.

To compare the schools, a series of one-way ANOVAs were conducted for each of the SDQ variables and self-esteem comparing the children's scores in each of the three schools at time 1 and time 2. The between group variable was type of school and the dependent variables included emotional problems, conduct problems, hyperactivity-inattention, peer problems, prosocial behaviour, total difficulties, and self-esteem at each time. Only significant effects are reported below as all other effects were shown to be not significant at $p < .05$.

Table 5 displays the mean scores and standard deviations for each of the SDQ variables and self-esteem for the three schools. Contrasts were conducted to compare each of the schools against all others, and the significant effects are reported in Table 5.

Table 5

Means and Standard Deviations for the SDQ Variables and Self-esteem for all Schools

Scale	School 1	School 2	School 3
Emotional problems time 1	3.07 (2.16)	2.91 (2.15)[a]	3.54 (2.38)[b]
Emotional problems time 2	3.10 (2.41)	2.81 (2.15)	3.39 (2.45)
Conduct problems time 1	1.65 (1.63)[a, b]	1.23 (1.36)[a, c]	2.11 (1.83)[b, c]
Conduct problems time 2	1.68 (1.62)	1.42 (1.59)	1.75 (1.63)
Hyperactivity-inattention time 1	3.59 (2.20)	3.31 (2.02)[a]	4.01 (2.26)[b]
Hyperactivity-inattention time 2	3.73 (2.21)[b]	3.18 (2.18)[a, c]	3.87 (2.28)[b]
Peer problems time 1	1.72 (1.66)	1.89 (1.58)	2.00 (1.74)
Peer problems time 2	1.61 (1.74)	1.64 (1.70)	1.73 (1.77)
Prosocial behaviour time 1	7.93 (1.60)	8.11 (1.32)	8.07 (1.85)
Prosocial behaviour time 2	8.00 (1.51)	7.97 (1.43)	8.09 (1.79)
Total difficulties time 1	10.04 (5.69)[a]	9.34 (5.16)[a]	11.67 (6.14)[b, c]
Total difficulties time 2	10.12 (5.90)	9.05 (5.61)[a]	10.73 (6.21)[b]
Self-esteem time 1	74.81 (18.98)	71.55 (19.72)	72.56 (19.65)
Self-esteem time 2	75.31 (20.99)	70.22 (21.77)	72.28 (21.31)

Note. School 1: n = 121, School 2: n = 139, School 3: n = 114. Values in parentheses are standard deviations.
[a]Significantly different at $p < .05$ to School 3. [b]Significantly different at $p < .05$ to School 2. [c]Significantly different at $p < .05$ to School 1. Although contrasts were significantly different for emotional problems at time 1 and total difficulties at time 2, the F-statistics were not significant at $p < .05$.

The results of the one-way ANOVAs revealed significant effects across schools at time 1 for conduct problems (F[2, 371] = 9.49, $p < .001$, $\eta^2 = .05$), hyperactivity-inattention (F[2, 371] = 3.32, $p = .037$, $\eta^2 = .02$), and total difficulties (F[2, 371] = 5.48, $p = .005$, $\eta^2 = .03$), and hyperactivity-inattention at time 2 (F[2, 371] = 3.47, $p = .032$, $\eta^2 = .02$). This indicated that the mean scores for conduct problems, hyperactivity-inattention, and total difficulties at time 1, and hyperactivity-inattention at time 2 were significantly different across the schools.

As highlighted in Table 5, individual contrasts revealed that School 3 and School 2 reported significantly different scores for conduct problems at time 1 ($p < .001$), hyperactivity-inattention at time 1 ($p = .010$), total difficulties at time 1 ($p = .001$)

and hyperactivity-inattention at time 2 (p = .015). As demonstrated by the means in Table 5, School 3 scored significantly higher on conduct problems, hyperactivity-inattention, and total difficulties at time 1 than School 2. School 3 also scored significantly higher on hyperactivity-inattention at time 2 than School 2.

As indicated by the means in Table 5, contrasts also revealed that School 3 and School 1 reported significantly different scores for conduct problems at time 1 (p = .028) and total difficulties at time 1 (p = .027). School 3 scored significantly higher on conduct problems and total difficulties at time 1 than School 1.

While the F-values approached significance but were not found to be significant for emotional problems at time 1 (F[2, 371] = 2.70, p = .069, η^2 = .01) and total difficulties at time 2 (F[2, 371] = 2.65, p = .072, η^2 = .01), the individual contrasts were significant. This was possibly due to the increase in statistical power in the contrasts as only two groups were compared. As illustrated in Table 5, School 3 and School 2 reported significantly different scores for emotional problems at time 1 (p = .024) and total difficulties at time 2 (p = .025). School 3 scored significantly higher on emotional problems at time 1 and total difficulties at time 2 than School 2.

As expected, most of the significant contrasts were found between School 3 and the other two schools, indicating that School 3 was different to Schools 1 and 2. The children in School 3 had been practicing regular meditation prior to the commencement of the study, therefore it was expected that these children would have lower scores on emotional problems, conduct problems, hyperactivity-inattention, peer problems, and total difficulties, and higher scores on prosocial behaviour and self-esteem. Results indicated that many of the SDQ scores for the children in School 3 were actually found to be significantly higher than the SDQ scores for the children from Schools 1 and 2 instead of lower. Surprisingly, the children in School 3 reported significantly higher scores on conduct problems

and total difficulties at time 1 than the children in Schools 1 and 2. The children in School 3 also recorded significantly higher scores on emotional problems and hyperactivity-inattention at time 1, and significantly higher scores on hyperactivity-inattention and total difficulties at time 2 than the children in School 2.

The children in Schools 1 and 2 were fairly similar in their SDQ and self-esteem scores. There were only two weak significant effects found between School 1 and School 2 for conduct problems at time 1 (p = .036) and hyperactivity-inattention at time 2 (p = .048). As can be seen in Table 5, School 1 scored significantly higher on conduct problems at time 1 and hyperactivity-inattention at time 2 than School 2. As there were multiple comparisons completed for each of the one-way ANOVAs, the chance of finding significant effects increased, therefore these two weak effects could have been found by chance. As the children in Schools 1 and 2 were fairly similar in their SDQ and self-esteem scores, this provides justification for combining these two schools in the data analyses and hypothesis testing.

Comparison of the SDQ and Self-esteem Severity Groups

In order to determine the SDQ and self-esteem severity groups, children's baseline scores from the survey completed at time 1 were used. Each of the scores for the six SDQ scales (emotional problems, conduct problems, hyperactivity-inattention, peer problems, prosocial behaviour and total difficulties) were recoded into the three-band categorisation outlined by the author (R. Goodman et al., 1998). These bandings included "normal", "borderline" and "abnormal". A normal score denotes scores falling below the 80th percentile, the borderline range includes scores between the 80th and 90th percentile, and the abnormal or clinical range represents the scores from the 90th to 100th percentile i.e. the top 10% (Hayes, 2007). A copy of the SDQ scoring for the three-band categorisation into normal, borderline and abnormal is presented in Appendix D.

After assigning the children to the three banding SDQ categorisation, the number of cases in the borderline ($n < 22$) and abnormal ($n < 20$) categories for each of the SDQ scales in each school were quite low which was to be expected as the sample was drawn from a non-clinical population. Therefore, the abnormal and borderline categories were combined and the two severity groups of normal and borderline/abnormal were used. Children with scores in the borderline and abnormal ranges were classified as children with a clinical presentation, while children with scores in the normal range were considered children with normal mental health ratings.

To establish the self-esteem severity groups, the children's baseline self-esteem scores from the time 1 survey were used. The median was calculated (Median = 76) and the self-esteem scores were recoded using a median split. Two self-esteem severity groups were created and the children who scored 76 and below were categorised into the low self-esteem group and the children who scored above 76 were considered in the high self-esteem group.

Frequency tables were tabulated to identify the number of children in each of the SDQ and self-esteem severity groups. Table 6 presents the number of children from the total sample in the normal and borderline/abnormal groups for each of the SDQ variables and self-esteem.

Table 6

Number of Children in the SDQ and Self-esteem Severity Groups

	Normal		Borderline/abnormal	
Scale	Frequency	Percent	Frequency	Percent
Emotional problems	315	84.22	59	15.78
Conduct problems	326	87.17	48	12.83
Hyperactivity-inattention	306	81.82	68	18.18
Peer problems	308	82.35	66	17.65
Prosocial behaviour	347	92.78	27	7.22
Total difficulties	306	81.82	68	18.18
	High Self-esteem		Low Self-esteem	
	Frequency	Percent	Frequency	Percent
Self-esteem	180	48.13	194	51.87

Note. N = 374.

In order to describe the types of children in each of the SDQ and self-esteem severity groups, a series of chi-square tests and t-tests were computed to compare the SDQ and self-esteem severity groups across gender, grade, language spoken at home, school, and the number of sessions children completed during the course of the study. Only significant effects are reported below as all other effects were shown to be not significant at $p < .05$.

A series of chi-square tests were conducted to assess the gender breakdown in the SDQ and self-esteem severity groups. Comparisons between the SDQ severity groups were significantly different for males and females on emotional problems ($\chi^2 = 5.22$, df = 1, $p = .022$) and prosocial behaviour ($\chi^2 = 14.05$, df = 1, $p < .001$). Figure 1 highlights the percentage of males and females in the normal group and borderline/abnormal group for emotional problems.

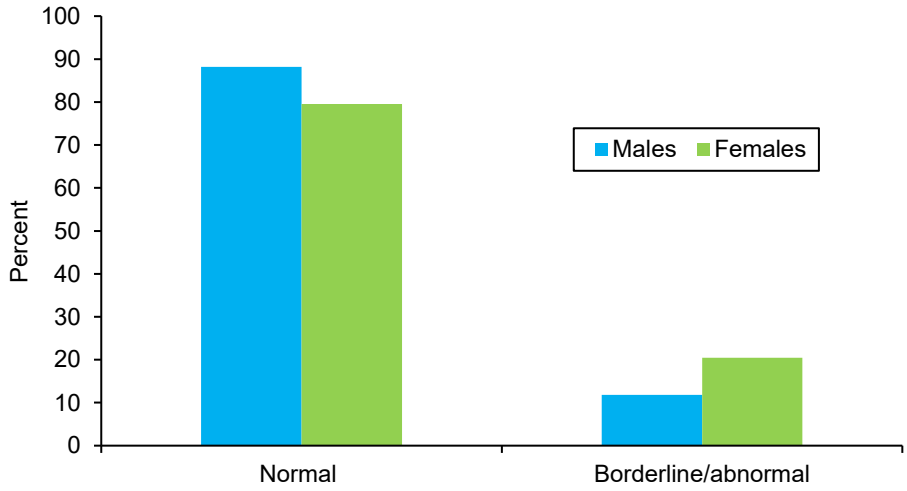

Figure 1. The percentage of males and females in the normal group and borderline/abnormal group for emotional problems. Males: *n* = 203. Females: *n* = 171.

As illustrated in Figure 1, there were significantly more females in the borderline/abnormal group for emotional problems (adjusted residual = 2.3) and less females in the normal group (adjusted residual = -2.3) than males.

Figure 2 displays the percentage of males and females in the normal group and borderline/abnormal group for prosocial behaviour.

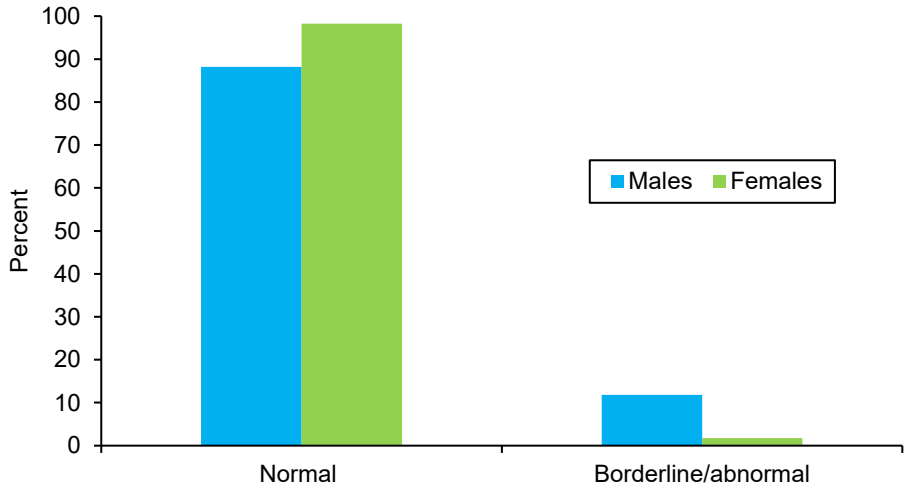

Figure 2. The percentage of males and females in the normal group and borderline/abnormal group for prosocial behaviour. Males: *n* = 203. Females: *n* = 171.

As can be seen from Figure 2, there were significantly more males in the borderline/abnormal group for prosocial behaviour (adjusted residual = 3.7) and less males in the normal group (adjusted residual = -3.7) than females.

Chi-square tests were also computed to explore the grade level of the children in each of the SDQ and self-esteem severity groups. The results revealed that there were no significant grade differences in the SDQ and self-esteem severity groups across each of the dependent variables (emotional problems, conduct problems, hyperactivity-inattention, peer problems, prosocial behaviour, total difficulties and self-esteem).

A series of chi-square tests were also performed to compare the SDQ and self-esteem severity groups across the English-speaking and ESL children. The findings highlighted that comparisons between the SDQ severity groups were significantly different for English-speaking children and ESL children on peer problems (χ^2 = 4.38, df = 1, *p* = .036). Figure 3 depicts the percentage of English-

speaking and ESL children in the normal group and borderline/abnormal group for peer problems.

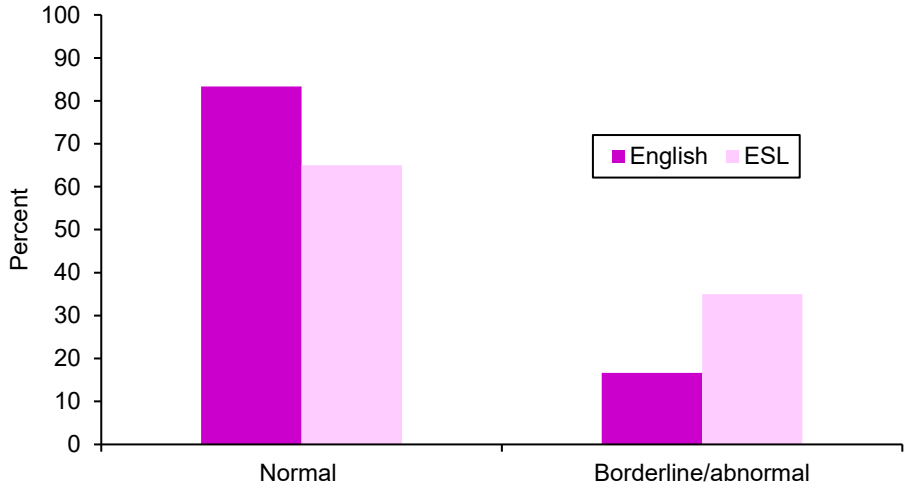

Figure 3. The percentage of English-speaking and ESL children in the normal group and borderline/abnormal group for peer problems. English-speaking children: *n* = 354. ESL children: *n* = 20.

As demonstrated in Figure 3, there were significantly more ESL children in the borderline/abnormal group for peer problems (adjusted residual = 2.1) and less ESL children in the normal group (adjusted residual = -2.1) than English-speaking children.

To compare the SDQ and self-esteem severity groups across schools, a number of chi-square tests were conducted. Table 7 provides a breakdown of the number of children in the SDQ and self-esteem severity groups for each school.

Table 7

Number of Children in the SDQ and Self-esteem Severity Groups for each School

	School 1				School 2				School 3			
	Normal		Borderline/abnormal		Normal		Borderline/abnormal		Normal		Borderline/abnormal	
Scale	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Emotional problems	104	85.95	17	14.05	125	89.93	14	10.07	86	75.44	28	24.56
Conduct problems	106	87.60	15	12.40	126	90.65	13	9.35	94	82.46	20	17.54
Hyperactivity-inattention	100	82.64	21	17.36	119	85.61	20	14.39	87	76.32	27	23.68
Peer problems	104	85.95	17	14.05	115	82.73	24	17.27	89	78.07	25	21.93
Prosocial behaviour	111	91.74	10	8.26	133	95.68	6	4.32	103	90.35	11	9.65
Total difficulties	103	85.12	18	14.88	119	85.61	20	14.39	84	73.68	30	26.32
	High Self-esteem		Low Self-esteem		High Self-esteem		Low Self-esteem		High Self-esteem		Low Self-esteem	
Scale	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Self-esteem	65	53.72	56	46.28	63	45.32	76	54.68	52	45.61	62	54.39

Note. School 1: *n* = 121, School 2: *n* = 139, School 3: *n* = 114.

The results of the chi-square tests revealed that comparisons between the SDQ severity groups were significantly different for schools on emotional problems (χ^2 = 10.30, df = 2, *p* = .006) and total difficulties (χ^2 = 7.30, df = 2, *p* = .026). Figure 4 shows the percentage of children from Schools 1, 2 and 3 in the normal group and borderline/abnormal group for emotional problems.

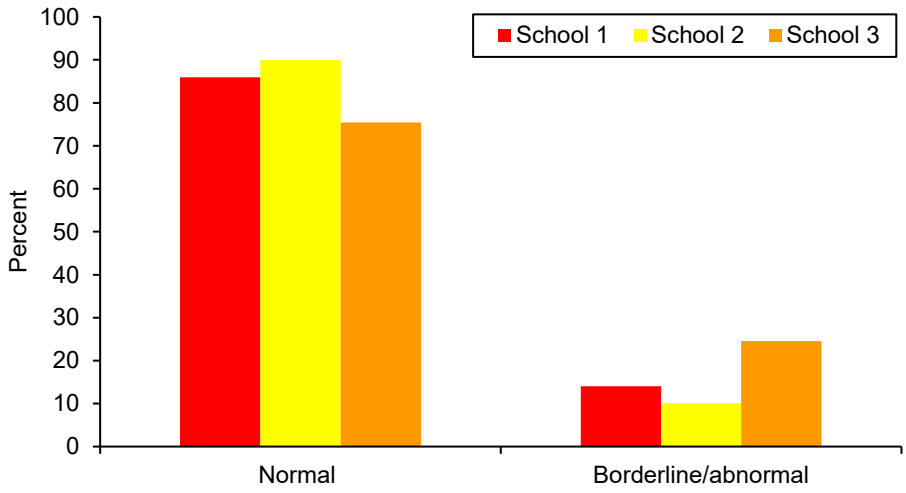

Figure 4. The percentage of children from Schools 1, 2 and 3 in the normal group and borderline/abnormal group for emotional problems. School 1: *n* = 121. School 2: *n* = 139. School 3: *n* = 114.

As revealed in Figure 4 and Table 7, there were significantly more children from School 3 in the borderline/abnormal group for emotional problems (adjusted residual = 3.1) and less children from School 3 in the normal group (adjusted residual = -3.1) than Schools 1 and 2. There were also significantly less children from School 2 in the borderline/abnormal group for emotional problems (adjusted residual = -2.3) and more children from School 2 in the normal group (adjusted residual = 2.3) than Schools 1 and 3.

Figure 5 describes the percentage of children from Schools 1, 2 and 3 in the normal group and borderline/abnormal group for total difficulties.

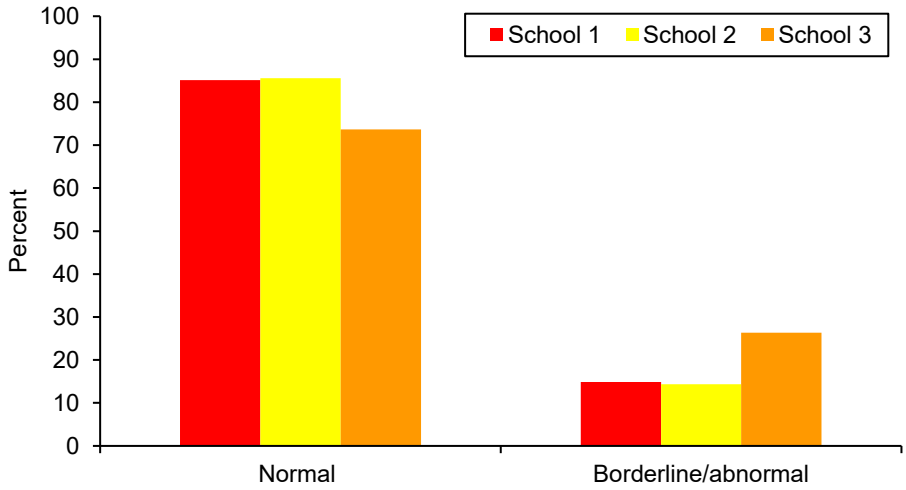

Figure 5. The percentage of children from Schools 1, 2 and 3 in the normal group and borderline/abnormal group for total difficulties. School 1: *n* = 121. School 2: *n* = 139. School 3: *n* = 114.

As highlighted in Figure 5 and Table 7, there were significantly more children from School 3 in the borderline/abnormal group for total difficulties (adjusted residual = 2.7) and less children from School 3 in the normal group (adjusted residual = -2.7) than Schools 1 and 2.

A series of independent t-tests were also performed to compare the SDQ and self-esteem severity groups across the number of sessions children completed during the course of the study. No significant differences were found between the number of sessions children completed for the SDQ and self-esteem severity groups across each of the dependent variables (emotional problems, conduct problems, hyperactivity-inattention, peer problems, prosocial behaviour, total difficulties and self-esteem).

Summary

In summary, comparisons of the SDQ and self-esteem severity groups across the total sample highlighted that there were no significant grade differences or differences across the number of sessions completed by the children for the two severity groups across each of the dependent variables (emotional

problems, conduct problems, hyperactivity-inattention, peer problems, prosocial behaviour, total difficulties and self-esteem). There were, however, some significant gender differences that were found across the severity groups for emotional problems and prosocial behaviours. There were more females in the borderline/abnormal group for emotional problems and less females in the normal group than males, and more males in the borderline/abnormal group for prosocial behaviour and less males in the normal group than females. There were also significant differences demonstrated across the severity groups for peer problems for the language spoken at home with significantly more ESL children reported in the borderline/abnormal group for peer problems and less ESL children in the normal group than English-speaking children.

The results indicated that there were also some significant school differences in the SDQ and self-esteem severity groups. It was found that significantly more children from School 3 were in the borderline/abnormal group for emotional problems and less children from School 3 were in the normal group than Schools 1 and 2. There were also significantly less children from School 2 in the borderline/abnormal group for emotional problems and more children from School 2 in the normal group than Schools 1 and 3. Finally, there were significantly more children from School 3 in the borderline/abnormal group for total difficulties and less children from School 3 in the normal group than Schools 1 and 2.

Hypothesis Testing

Outcome and Severity Group Hypotheses

ANOVAs were computed to test the first two hypotheses: 1) children in the guided meditation group would experience greater reductions in emotional problems, conduct problems, hyperactivity-inattention, and peer problems, and greater improvements in prosocial behaviour and self-esteem than the children in the control group; and 2) the effects of guided meditation would be

stronger for children with a clinical presentation than children with normal mental health ratings. A series of 2 (time) x 2 (group) x 2 (severity group) mixed design ANOVAs were computed for Schools 1 and 2, and a series of 2 (time) x 2 (severity group) mixed design ANOVAs were calculated for School 3 as there was no control group in this school. The within group independent variable of time indicated the scores at time 1 and time 2. The between group variables were type of group (i.e. guided meditation or control group) and type of severity group (i.e. normal or borderline/abnormal SDQ group and high or low self-esteem group). The ANOVAs also controlled for the number of sessions completed by the children as an increased effect of guided meditation may be associated with a greater number of sessions. During the course of the study the total number of sessions completed by the children ranged from 6 to 39 sessions.

A total of seven ANOVAs were conducted using the data from each school to determine if there was a significant change in each of the seven dependent variables (i.e. SDQ variables and self-esteem) from time 1 to time 2. To support the outcome hypothesis that children in the guided meditation group would experience greater reductions in emotional problems, conduct problems, hyperactivity-inattention, and peer problems, and greater improvements in prosocial behaviour and self-esteem than the children in the control group, a significant interaction across time and group was expected for Schools 1 and 2.

For Schools 1 and 2, it was expected that the scores for the children in the guided meditation group would decrease from time 1 to time 2 for emotional problems, conduct problems, hyperactivity-inattention, and peer problems but not for the children in the control group, and the scores for the children in the guided meditation group would increase from time 1 to time 2 for prosocial behaviour and self-esteem but not for the children in the control group. In School 3 the children were regularly practicing meditation prior to the commencement of the study so there was no control group in this school. The outcome hypothesis therefore only incorporated Schools 1 and 2. It was

however anticipated that in School 3 the scores for the guided meditation group would decrease from time 1 to time 2 for emotional problems, conduct problems, hyperactivity-inattention, and peer problems, and the scores for the guided meditation group would increase from time 1 to time 2 for prosocial behaviour and self-esteem.

To support the severity group hypothesis that the effects of guided meditation would be stronger for children with a clinical presentation than children with normal mental health ratings, a significant interaction across time, group and severity group was expected for Schools 1 and 2, and a significant interaction across time and severity group was expected for School 3. For Schools 1 and 2, it was anticipated that the scores for the borderline/abnormal guided meditation group would show a greater decrease from time 1 to time 2 for emotional problems, conduct problems, hyperactivity-inattention, and peer problems than the normal guided meditation group and the control group. It was also expected that the scores for the borderline/abnormal guided meditation group would demonstrate a greater increase from time 1 to time 2 for prosocial behaviour and self-esteem than the normal guided meditation group and the control group in Schools 1 and 2.

As there was no control group in School 3, it was anticipated that the scores for the borderline/abnormal guided meditation group would show a greater decrease from time 1 to time 2 for emotional problems, conduct problems, hyperactivity-inattention, and peer problems than the normal guided meditation group. It was also expected that the scores for the borderline/abnormal guided meditation group would demonstrate a greater increase from time 1 to time 2 for prosocial behaviour and self-esteem than the normal guided meditation group in School 3.

In the first series of seven ANOVAs, Schools 1 and 2 were combined as they both used a guided meditation group and control group. As there would be less power if the schools were separated, it was thought to be beneficial to have larger sample sizes so the data from these two schools was combined in

the analyses. As previously discussed, the baseline and post-test data from Schools 1 and 2 suggested that these two schools were fairly similar in their SDQ and self-esteem scores, therefore providing further rationale for combining the two schools in the data analyses. School 3 on the other hand had no control group and consisted only of a guided meditation group as the children were regularly participating in daily meditation before the study began. As a result, School 3 was treated separately and the analyses for this school was conducted individually.

The series of 7 ANOVAs were 2 (time) x 2 (group) x 2 (severity group) mixed design ANOVAs where all the SDQ variables and self-esteem were compared individually across the guided meditation and control groups, controlling for the number of sessions completed by each child. Only significant interactions and main effects are reported below. All other effects were shown to be not significant at $p < .05$.

As each of the dependent variables (emotional problems, conduct problems, hyperactivity-inattention, peer problems, prosocial behaviour and self-esteem) were measuring different constructs and were possibly affected differently by guided meditation, it was thought to be beneficial to consider each dependent variable individually using separate ANOVAs rather than use MANOVA.

Schools 1 and 2

The first series of seven ANOVAs were computed for Schools 1 and 2 combined using a 2 (time) x 2 (group) x 2 (severity group) mixed design ANOVA where all the dependent variables (i.e. SDQ variables and self-esteem) were compared individually across the guided meditation and control groups, controlling for the number of sessions completed by each child. Table 8 displays the raw mean scores for each of the SDQ variables and self-esteem at time 1 and time 2 for the control and guided meditation groups in Schools 1 and 2 combined.

Table 8

Means for the SDQ Variables and Self-esteem for the Control and Guided Meditation Groups in Schools 1 and 2 Combined

	Control[a]		Meditation[b]	
Scale	Time 1	Time 2	Time 1	Time 2
Emotional problems	3.16 (2.27)	3.08 (2.32)	2.79 (2.00)	2.80 (2.23)
Conduct problems	1.66* (1.69)	1.66 (1.67)	1.17 (1.21)	1.40 (1.52)
Hyperactivity-inattention	3.59 (2.22)	3.57 (2.33)	3.26 (1.95)	3.29 (2.06)
Peer problems	1.99 (1.65)	1.81 (1.82)	1.62 (1.57)	1.42 (1.57)
Prosocial behaviour	7.99 (1.52)	7.92 (1.51)	8.07 (1.39)	8.06 (1.41)
Total difficulties	10.39* (5.73)	10.10 (6.03)	8.84 (4.91)	8.92 (5.40)
Self-esteem	71.38 (19.30)	70.96 (21.48)	74.98 (19.44)	74.43 (21.50)

Note. Values in parentheses are standard deviations.
[a]n = 138, [b]n = 122.
*Significantly different at $p < .05$ to the meditation group.

When comparing the baseline data for the guided meditation and control groups, t-tests revealed that both groups were similar across all SDQ variables and self-esteem except for conduct problems and total difficulties. The control group had significantly higher means for conduct problems and total difficulties than the guided meditation group before the commencement of the study.

The results of the ANOVAs revealed that for each of the dependent variables there were no significant interactions across time and group for Schools 1 and 2. These findings indicated that for each of the SDQ variables and self-esteem, there was no significant difference between the scores for the guided meditation and control groups from time 1 to time 2. These results suggested that the outcome hypothesis that children in the guided meditation group would experience greater reductions in emotional problems, conduct problems, hyperactivity-inattention, and peer problems, and greater improvements in prosocial behaviour and self-esteem than the children in the control group was not supported for Schools 1 and 2 when comparing the total sample of children in the guided meditation and control groups.

The ANOVAs for Schools 1 and 2 also showed that there were no significant three-way interactions (time x group x severity group). This highlighted that

for each of the SDQ variables and self-esteem there was no significant difference between the scores from time 1 to time 2 for each of the severity groups in the guided meditation and control groups. In addition, all of the effects for Schools 1 and 2 that included the variable of the number of sessions were found to be not significant at $p < .05$, indicating that the number of sessions completed by each child did not impact on the children's scores[2]. Table 9 presents the raw mean scores and standard deviations for each of the SDQ variables and self-esteem at time 1 and time 2 for the normal and borderline/abnormal groups in Schools 1 and 2.

[2] In the simple slope tests however, there were some significant interactions found between the number of sessions and time for the borderline/abnormal group when both the guided meditation and control groups were combined which was possibly due to increased power because of the larger sample size.

Table 9

Means and Standard Deviations for the SDQ Variables and Self-esteem for the Normal and Borderline/abnormal Groups in Schools 1 and 2 Combined

	Normal						Borderline/abnormal									
	Control			Meditation			Control			Meditation			Normal Total[a]		Borderline/abnormal Total[a]	
Scale	*n*	Time 1	Time 2	*n*	Time 1	Time 2	*n*	Time 1	Time 2	*n*	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Emotional problems	118	2.48 (1.63)	2.53 (1.86)	111	2.42 (1.69)	2.52 (1.98)	20	7.15 (1.09)	6.30 (2.20)	11	6.45 (0.69)	5.64 (2.69)	2.45 (1.65)	2.53 (1.91)	6.90 (1.01)	6.06 (2.37)
Conduct problems	118	1.14 (1.09)	1.31 (1.31)	114	0.96 (0.95)	1.23 (1.32)	20	4.75 (1.21)	3.70 (2.11)	8	4.13 (0.35)	3.88 (2.10)	1.05 (1.03)	1.27 (1.31)	4.57 (1.07)	3.75 (2.07)
Hyperactivity-inattention	112	2.79 (1.57)	3.03 (2.04)	107	2.79 (1.55)	3.00 (1.92)	26	7.04 (1.00)	5.88 (2.10)	15	6.67 (0.72)	5.33 (1.88)	2.79 (1.56)	3.02 (1.98)	6.90 (0.92)	5.68 (2.02)
Peer problems	114	1.40 (1.05)	1.39 (1.41)	105	1.14 (1.05)	1.10 (1.11)	24	4.75 (1.03)	3.75 (2.27)	17	4.59 (0.80)	3.46 (2.38)	1.28 (1.06)	1.25 (1.28)	4.68 (0.93)	3.63 (2.29)
Prosocial behaviour	128	8.25 (1.22)	8.13 (1.33)	116	8.25 (1.71)	8.17 (1.34)	10	4.60 (0.70)	5.30 (1.25)	6	4.67 (0.52)	5.83 (0.75)	8.25 (1.19)	8.15 (1.33)	4.63 (0.62)	5.50 (1.10)
Total difficulties	111	8.14 (3.46)	8.26 (4.37)	111	7.89 (3.95)	8.17 (4.83)	27	19.69 (3.34)	17.67 (6.06)	11	18.45 (2.94)	16.54 (5.10)	8.01 (3.71)	8.22 (4.59)	19.33 (3.24)	17.34 (5.76)

	High Self-esteem						Low Self-esteem									
	Control			Meditation			Control			Meditation			High Self-esteem Total[a]		Low Self-esteem Total[a]	
	n	Time 1	Time 2	*n*	Time 1	Time 2	*n*	Time 1	Time 2	*n*	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Self-esteem	63	88.19 (6.44)	82.48 (14.75)	65	89.17 (6.27)	87.14 (10.21)	75	57.25 (14.56)	61.28 (21.55)	57	58.81 (16.47)	59.93 (21.86)	88.69 (6.35)	84.84 (12.81)	57.92 (15.37)	60.70 (21.61)

Note. Values in parentheses are standard deviations.

[a]Total mean for the guided meditation group and control group combined.

As there were no significant interactions across time, group and severity group, this highlighted that the severity group hypothesis that the effects of guided meditation would be stronger for children with a clinical presentation than children with normal mental health ratings was not supported for Schools 1 and 2 when comparing the total sample of children in the guided meditation and control groups. Whilst the ANOVAs revealed no significant three-way interactions (time x group x severity group), there were however significant time by severity group interactions for each of the dependent variables: emotional problems (F[1, 255] = 6.63, p = .011, η^2 = .03), conduct problems (F[1, 255] = 9.78, p = .002, η^2 = .04), hyperactivity-inattention (F[1, 255] = 20.48, p < .001, η^2 = .07), peer problems (F[1, 255] = 16.25, p < .001, η^2 = .06), prosocial behaviour (F[1, 255] = 7.70, p = .006, η^2 = .03), total difficulties (F[1, 255] = 7.91, p = .005, η^2 = .03) and self-esteem (F[1, 255] = 10.61, p = .001, η^2 = .04). This indicated that the change over time for emotional problems, conduct problems, hyperactivity-inattention, peer problems, prosocial behaviour, total difficulties and self-esteem differed across the normal and borderline/abnormal groups when the guided meditation and control groups were combined. This can be seen in the final four columns in Table 9 where the “Normal Total” at time 1 and time 2 includes the mean scores for the normal group with both the control and guided meditation groups combined. Similarly, the “Borderline/abnormal Total” incorporates the mean scores for the borderline/abnormal group at time 1 and time 2 with both the control and guided meditation groups combined.

The patterns of the significant time by severity group interactions for each of the dependent variables are presented in Figures 6 to 12. They highlight the average scores for each of the dependent variables at time 1 and time 2 for the normal and borderline/abnormal groups when the guided meditation and control groups were combined. The mean scores displayed in Figures 6 to 12 have been adjusted for the number of sessions completed by each child.

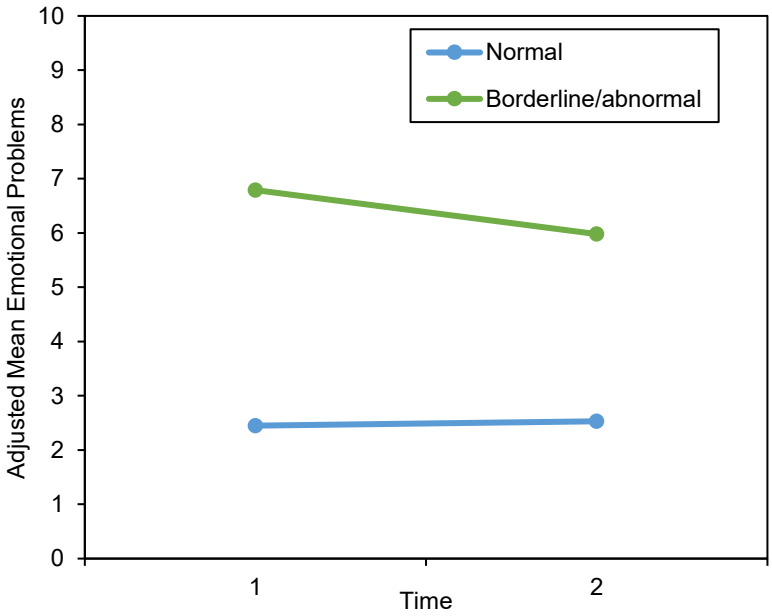

Figure 6. Adjusted (for the number of sessions) mean emotional problems scores for the normal and borderline/abnormal groups at time 1 and time 2 in Schools 1 and 2 combined.

As can be seen from Figure 6, emotional problems increased slightly from time 1 to time 2 for the normal group but decreased for the borderline/abnormal group. In order to test if the differences between the time 1 and time 2 scores for emotional problems were significant for the normal group and borderline/abnormal group, 2 (time) x 2 (severity group) mixed design ANOVAs were computed separately for the two severity groups and controlled for the number of sessions completed by each child. Despite the significant time by severity group interaction and possibly due to the reduced power, simple slope tests revealed that the differences between the time 1 and time 2 scores for emotional problems were not significant at $p < .05$ for both the normal group and borderline/abnormal group. Simple slope tests highlighted that there was a significant interaction between the number of sessions and time for the borderline/abnormal group ($F[1, 29] = 4.92$, $p = .035$, $\eta^2 = .15$). On inspection of the correlations between the number of sessions and emotional problems at time 1 and time 2, there was a significant negative correlation between emotional problems at time 2 and the number of sessions completed by each child ($r = -.46$, $n = 31$, $p = .009$). The more guided meditation or

reading sessions the children in the borderline/abnormal group attended, the less emotional problems experienced at time 2.

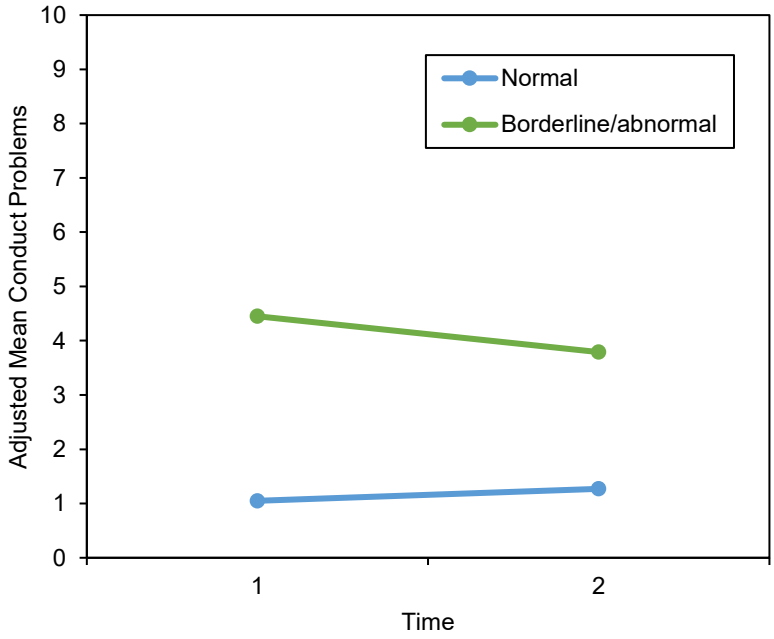

Figure 7. Adjusted (for the number of sessions) mean conduct problems scores for the normal and borderline/abnormal groups at time 1 and time 2 in Schools 1 and 2 combined.

As demonstrated in Figure 7, conduct problems increased from time 1 to time 2 for the normal group but decreased for the borderline/abnormal group. Simple slope tests highlighted however, that the difference between the time 1 and time 2 scores for conduct problems were not significant at $p < .05$ for both severity groups.

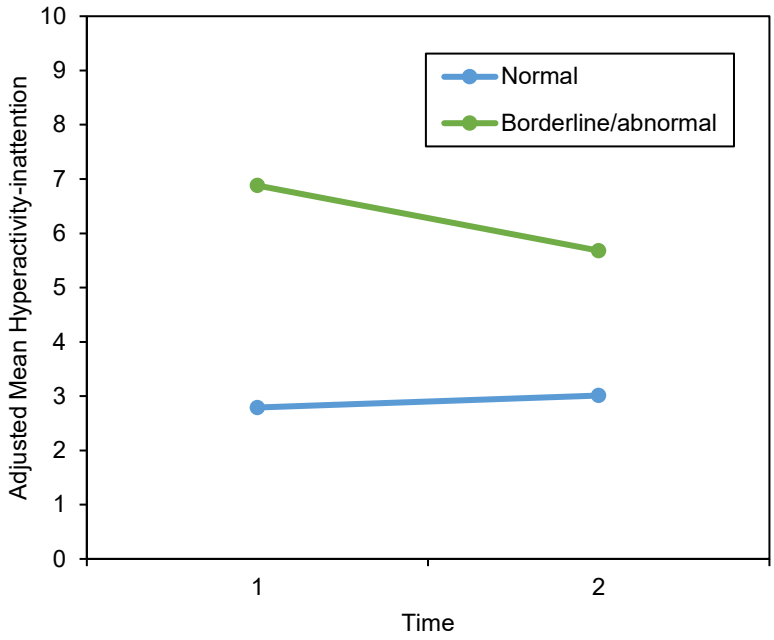

Figure 8. Adjusted (for the number of sessions) mean hyperactivity-inattention scores for the normal and borderline/abnormal groups at time 1 and time 2 in Schools 1 and 2 combined.

As highlighted in Figure 8, hyperactivity-inattention increased from time 1 to time 2 for the normal group but decreased for the borderline/abnormal group. The differences between the time 1 and time 2 scores for hyperactivity-inattention however, were not shown to be significant at $p < .05$ for both severity groups.

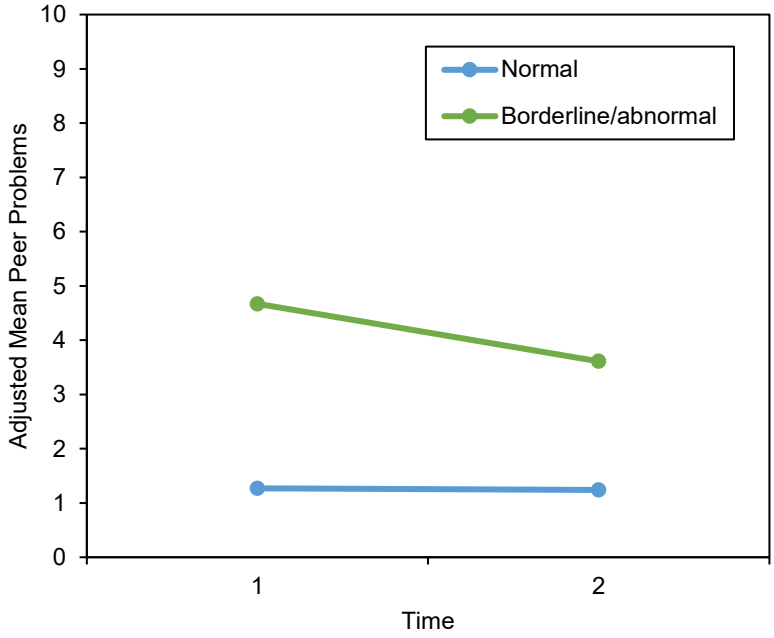

Figure 9. Adjusted (for the number of sessions) mean peer problems scores for the normal and borderline/abnormal groups at time 1 and time 2 in Schools 1 and 2 combined.

As illustrated in Figure 9, peer problems decreased slightly from time 1 to time 2 for the normal group but decreased considerably for the borderline/abnormal group. Simple slope tests confirmed that the scores for peer problems for the borderline/abnormal group significantly decreased from time 1 to time 2 (F[1, 39] = 7.73, p = .008, η^2 = .17), but not for the normal group. Simple slope tests also revealed that there was a significant interaction between the number of sessions and time for the borderline/abnormal group (F[1, 39] = 10.19, p = .003, η^2 = .21). On inspection of the correlations between the number of sessions and peer problems at time 1 and time 2, there was a significant negative correlation between peer problems at time 2 and the number of sessions completed by each child (r = -.41, n = 41, p = .007). The more guided meditation or reading sessions the children in the borderline/abnormal group attended, the less peer problems experienced at time 2.

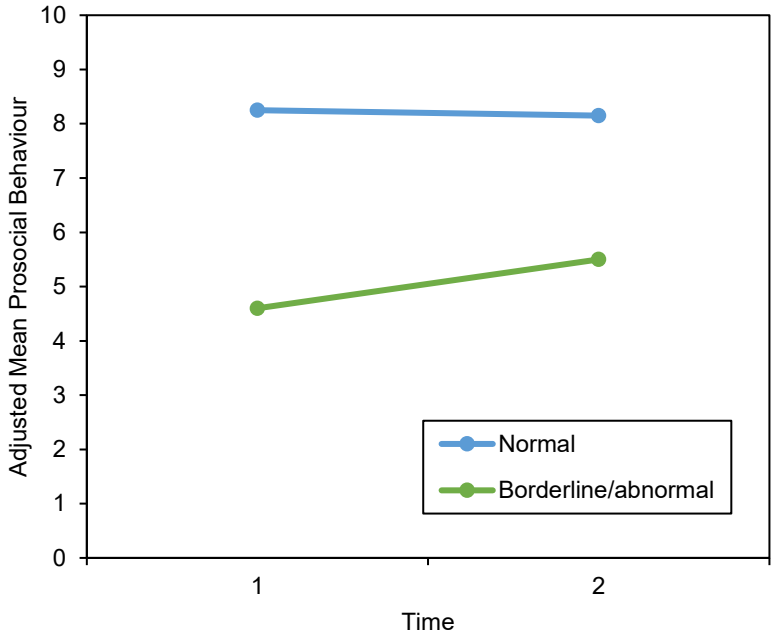

Figure 10. Adjusted (for the number of sessions) mean prosocial behaviour scores for the normal and borderline/abnormal groups at time 1 and time 2 in Schools 1 and 2 combined.

As demonstrated in Figure 10, prosocial behaviour decreased slightly from time 1 to time 2 for the normal group but increased for the borderline/abnormal group. The differences between the time 1 and time 2 scores for prosocial behaviour were however, not significant at $p < .05$ for both severity groups.

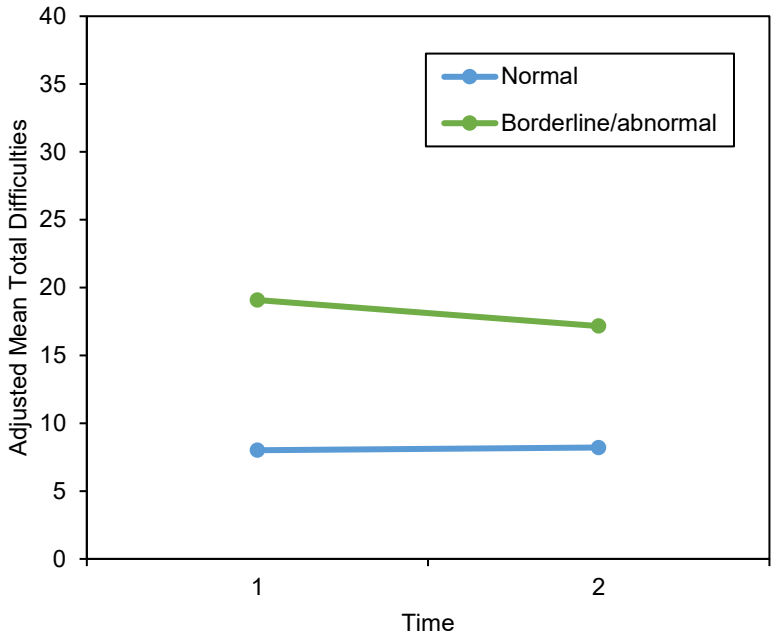

Figure 11. Adjusted (for the number of sessions) mean total difficulties scores for the normal and borderline/abnormal groups at time 1 and time 2 in Schools 1 and 2 combined.

As illustrated in Figure 11, total difficulties increased slightly from time 1 to time 2 for the normal group but decreased for the borderline/abnormal group. Simple slope tests revealed however, that the difference between the time 1 and time 2 scores for total difficulties were not significant at $p < .05$ for both severity groups. Simple slope tests also highlighted that there was a significant interaction between the number of sessions and time for the borderline/abnormal group ($F[1, 36] = 5.06$, $p = .031$, $\eta^2 = .12$). On inspection of the correlations between the number of sessions and total difficulties at time 1 and time 2, there was a significant negative correlation between total difficulties at time 2 and the number of sessions completed by each child ($r = -.38$, $n = 38$, $p = .019$). The more guided meditation or reading sessions the children in the borderline/abnormal group attended, the less total difficulties experienced at time 2.

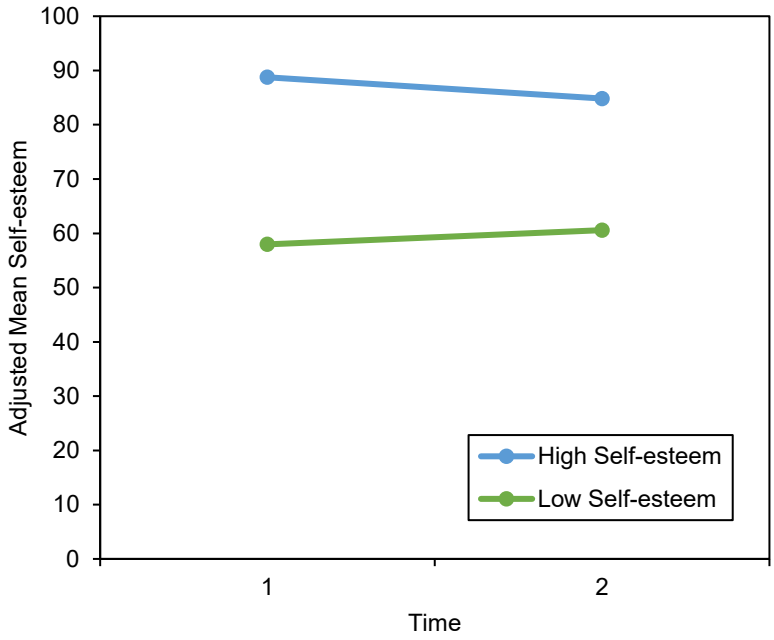

Figure 12. Adjusted (for the number of sessions) mean self-esteem scores for the high self-esteem and low self-esteem groups at time 1 and time 2 in Schools 1 and 2 combined.

As can be seen from Figure 12, self-esteem decreased from time 1 to time 2 for the high self-esteem group but increased for the low self-esteem group. Simple slope tests demonstrated however, that the differences between the time 1 and time 2 scores for self-esteem were not significant at $p < .05$ for both severity groups.

The power for the effect of time was shown to be low in each of the simple slope tests and ranged from 0.05 to 0.77. This was possibly due to the low sample sizes in each of the severity groups in Schools 1 and 2.

The results of the ANOVAs also highlighted significant main effects for severity groups on each of the dependent variables: emotional problems, conduct problems, hyperactivity-inattention, peer problems, prosocial behaviour, total difficulties and self-esteem. These main effects were all significant at $p < .001$. As would be expected, the normal and borderline/abnormal groups were significantly different for each of the SDQ variables. The borderline/abnormal group reported significantly higher scores on emotional problems, conduct

problems, hyperactivity-inattention, peer problems, and total difficulties than the normal group. The borderline/abnormal group also reported significantly lower scores on prosocial behaviour than the normal group. As expected, the high self-esteem and low self-esteem groups were also significantly different with the high self-esteem group reporting higher scores on self-esteem than the low self-esteem group.

Summary

Overall, the results of the ANOVAs for Schools 1 and 2 revealed that for each of the dependent variables there were no significant interactions across time and group. This indicated that when comparing the total sample of children in the guided meditation and control groups, the outcome hypothesis that children in the guided meditation group would experience greater reductions in emotional problems, conduct problems, hyperactivity-inattention, and peer problems, and greater improvements in prosocial behaviour and self-esteem than the children in the control group was not supported for Schools 1 and 2. However, when the sample was separated into severity groups and both the control and guided meditation groups were combined, the children in the borderline/abnormal group and low self-esteem group experienced greater reductions in each of the outcome measures, however this was not the case for the children in the normal group.

The results of the ANOVAs also revealed that for each of the dependent variables there were no significant interactions across time, group and severity group. This suggested that the severity group hypothesis that the effects of guided meditation would be stronger for children with a clinical presentation than children with normal mental health ratings was not supported for Schools 1 and 2 when comparing the total sample of children in the guided meditation and control groups. However, when the guided meditation and control groups were combined, the effects of guided meditation and reading were stronger for each of the outcome measures for children with a clinical presentation than children with normal mental health ratings.

As mentioned, there were effects reported when the sample was separated into severity groups, and the guided meditation and control groups were combined. Significant time by severity group interactions were found for each of the dependent variables indicating that the children in the borderline/abnormal groups from both the guided meditation and control groups combined demonstrated stronger effects for each of the outcome measures than the normal group with both the guided meditation and control groups combined. This finding highlighted that both the reading and guided meditation were effective for the children in the borderline/abnormal group and low self-esteem group, but not for the children in the normal group and high self-esteem group. In addition, when the guided meditation and control groups were combined, the number of sessions completed by each child had an impact on the emotional problems, peer problems and total difficulties for the borderline/abnormal group, but not for the normal group. The more guided meditation or reading sessions the children in the borderline/abnormal group attended, the less emotional problems, peer problems and total difficulties experienced at time 2.

School 3

As there was no control group in School 3, a series of 2 (time) x 2 (severity group) mixed design ANOVAs were computed for each dependent variable (i.e. SDQ variables and self-esteem), controlling for the number of sessions completed by each child. Table 10 displays the raw mean scores for each of the SDQ variables and self-esteem at time 1 and time 2 for the guided meditation group in School 3.

Table 10

Means for the SDQ Variables and Self-esteem for the Guided Meditation Group in School 3

Scale	Time 1	Time 2
Emotional problems	3.54 (2.38)	3.39 (2.45)
Conduct problems	2.11 (1.83)	1.75 (1.63)
Hyperactivity-inattention	4.01 (2.26)	3.87 (2.28)
Peer problems	2.00 (1.74)	1.73 (1.77)
Prosocial behaviour	8.07 (1.85)	8.09 (1.79)
Total difficulties	11.67 (6.14)	10.73 (6.21)
Self-esteem	72.56 (19.65)	72.28 (21.31)

Note. n = 114.

The results of the ANOVAs for School 3 showed that there were no significant differences between the scores from time 1 to time 2 for each of the dependent variables (emotional problems, conduct problems, hyperactivity-inattention, peer problems, prosocial behaviour, total difficulties and self-esteem) when comparing the total sample of children. However, the ANOVAs revealed significant time by severity group interactions for conduct problems (F[1, 111] = 15.50, p < .001, η^2 = .12), hyperactivity-inattention (F[1, 111] = 9.62, p = .002, η^2 = .08), peer problems (F[1, 111] = 13.21, p < .001, η^2 = .11), and prosocial behaviour (F[1, 111] = 13.85, p < .001, η^2 = .11). This indicated that the change over time for conduct problems, hyperactivity-inattention, peer problems, and prosocial behaviour differed across the normal and borderline/abnormal groups. Table 11 presents the raw mean scores and standard deviations for each of the SDQ variables and self-esteem at time 1 and time 2 for the normal and borderline/abnormal groups in School 3.

Table 11

Means and Standard Deviations for the SDQ Variables and Self-esteem for the Normal and Borderline/abnormal Groups in School 3

		Normal			Borderline/abnormal	
Scale	*n*	Time 1	Time 2	*n*	Time 1	Time 2
Emotional problems	86	2.48 (1.58)	2.49 (1.88)	28	6.82 (1.02)	6.14 (1.86)
Conduct problems	94	1.43 (1.01)	1.27 (1.24)	20	5.35 (1.23)	4.00 (1.38)
Hyperactivity-inattention	87	3.02 (1.49)	3.13 (1.94)	27	7.19 (1.04)	6.26 (1.56)
Peer problems	89	1.25 (1.04)	1.22 (1.22)	25	4.68 (0.90)	3.52 (2.24)
Prosocial behaviour	103	8.50 (1.31)	8.35 (1.53)	11	4.09 (1.30)	5.64 (2.25)
Total difficulties	84	8.76 (3.89)	8.11 (4.13)	30	19.80 (3.25)	18.05 (5.12)
		High Self-esteem			Low Self-esteem	
	n	Time 1	Time 2	*n*	Time 1	Time 2
Self-esteem	52	89.81 (6.05)	87.54 (9.82)	62	58.10 (14.78)	59.48 (19.89)

Note. Values in parentheses are standard deviations.

The patterns of the significant time by severity group interactions for the dependent variables are presented in Figures 13 to 16, and highlighted the average scores at time 1 and time 2 for the normal and borderline/abnormal groups for conduct problems, hyperactivity-inattention, peer problems, and prosocial behaviour. The mean scores displayed in Figures 13 to 16 have been adjusted for the number of sessions completed by each child. All of the effects for School 3 that included the variable of the number of sessions were found to be not significant at $p < .05$, indicating that the number of sessions completed by each child did not impact on the children's scores[3].

[3] In the simple slope tests however, there was a significant interaction found between the number of sessions and time for the borderline/abnormal group.

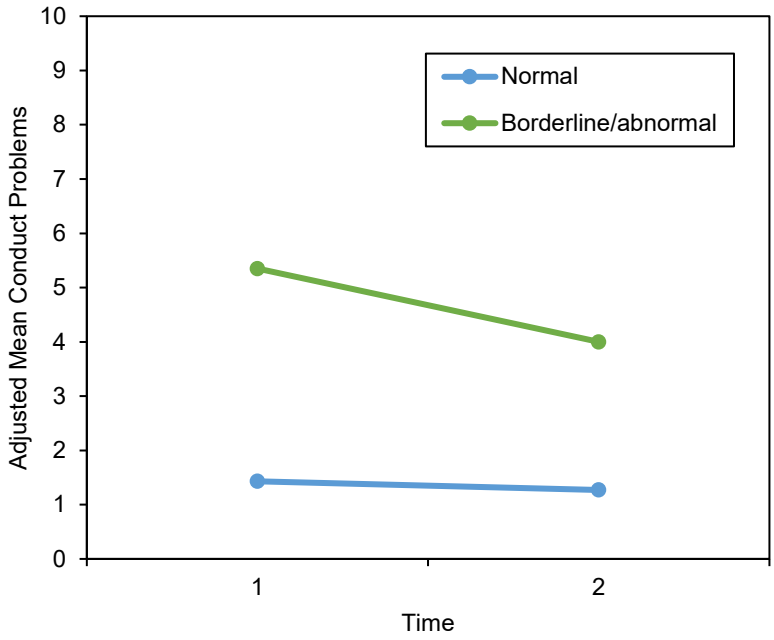

Figure 13. Adjusted (for the number of sessions) mean conduct problems scores for the normal and borderline/abnormal groups at time 1 and time 2 in School 3.

As highlighted in Figure 13, conduct problems decreased slightly from time 1 to time 2 for the normal group but decreased considerably for the borderline/abnormal group. Despite the significant time by severity group interaction and possibly due to the reduced power, simple slope tests indicated that the differences between the time 1 and time 2 scores for conduct problems were not significant at $p < .05$ for both the normal group and borderline/abnormal group.

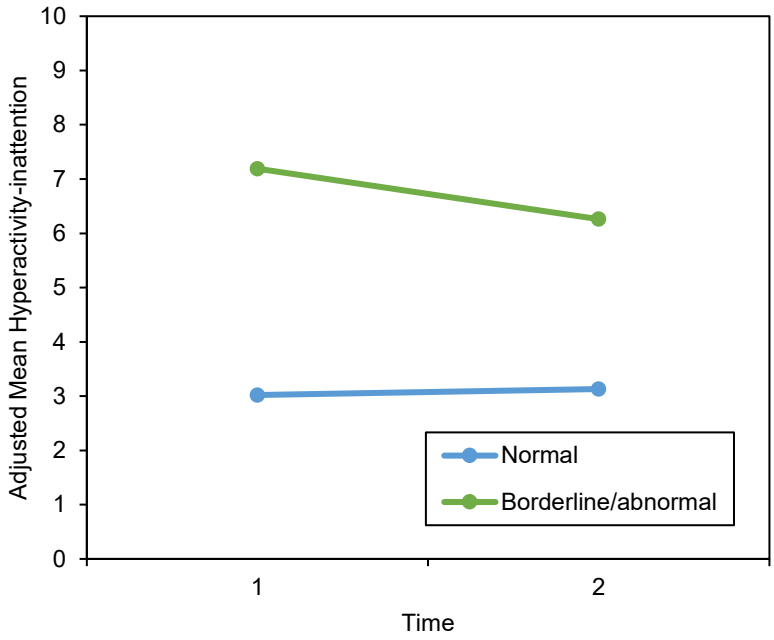

Figure 14. Adjusted (for the number of sessions) mean hyperactivity-inattention scores for the normal and borderline/abnormal groups at time 1 and time 2 in School 3.

As demonstrated in Figure 14, hyperactivity-inattention increased slightly from time 1 to time 2 for the normal group but decreased for the borderline/abnormal group. The differences between the time 1 and time 2 scores for hyperactivity-inattention however, were not found to be significant at $p < .05$ for both severity groups.

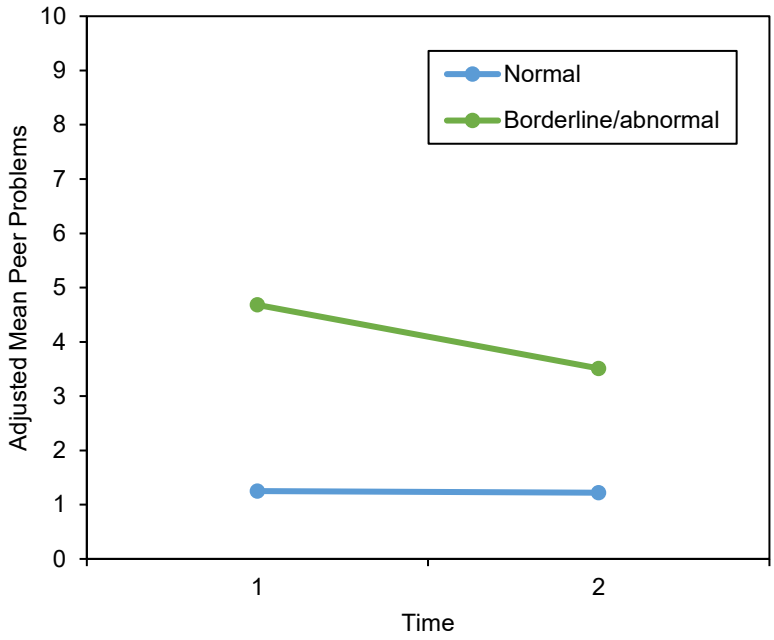

Figure 15. Adjusted (for the number of sessions) mean peer problems scores for the normal and borderline/abnormal groups at time 1 and time 2 in School 3.

As can be seen from Figure 15, peer problems remained relatively the same from time 1 to time 2 for the normal group but decreased for the borderline/abnormal group. Simple slope tests showed however that the differences between the time 1 and time 2 scores for peer problems were not significant at $p < .05$ for both severity groups. Simple slope tests also highlighted that there was a significant interaction between the number of sessions and time for the borderline/abnormal group ($F[1, 23] = 4.55$, $p = .044$, $\eta^2 = .17$). On inspection of the correlations between the number of sessions and peer problems at time 1 and time 2, no significant correlations were found at $p < .05$, however the correlation between the number of sessions and peer problems at time 2 almost reached significance ($r = -.37$, $n = 25$, $p = .068$). This was possibly due to low power because of the small numbers in the borderline/abnormal group. This finding suggested that the more guided meditation sessions the children in the borderline/abnormal group attended, the less peer problems experienced at time 2.

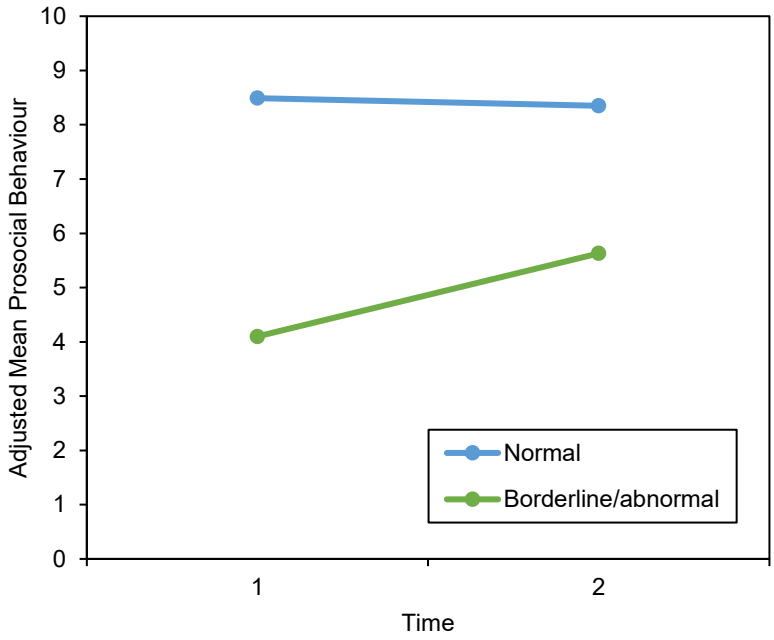

Figure 16. Adjusted (for the number of sessions) mean prosocial behaviour scores for the normal and borderline/abnormal groups at time 1 and time 2 in School 3.

As illustrated in Figure 16, prosocial behaviour decreased slightly from time 1 to time 2 for the normal group but increased for the borderline/abnormal group. The differences between the time 1 and time 2 scores for prosocial behaviour were however, not significant at $p < .05$ for both severity groups.

The power for the effect of time was shown to be low in each of the simple slope tests and ranged from 0.05 to 0.35. This was possibly due to the low sample sizes in each of the severity groups in School 3.

There were four significant time by severity group interactions found in School 3 for conduct problems, hyperactivity-inattention, peer problems, and prosocial behaviour. These findings indicated that the severity group hypothesis that the effects of guided meditation would be stronger for children with a clinical presentation than children with normal mental health ratings was partially supported for School 3 with conduct problems, hyperactivity-inattention, peer problems, and prosocial behaviour, but not for emotional problems and self-esteem.

Finally, as expected, the results of the ANOVAs for School 3 also highlighted significant main effects for severity groups on each of the dependent variables: emotional problems, conduct problems, hyperactivity-inattention, peer problems, prosocial behaviour, total difficulties and self-esteem. These main effects were all significant at $p < .001$ and were similar to those found in Schools 1 and 2. The normal and borderline/abnormal groups in School 3 were significantly different for each of the SDQ variables with the borderline/abnormal group reporting significantly higher scores on emotional problems, conduct problems, hyperactivity-inattention, peer problems, and total difficulties than the normal group. The borderline/abnormal group in School 3 also reported significantly lower scores on prosocial behaviour than the normal group. Also as expected, the high self-esteem and low self-esteem groups in School 3 were significantly different with the high self-esteem group reporting higher scores on self-esteem than the low self-esteem group.

Summary

Overall, the results of the ANOVAs for School 3 highlighted that there were no significant differences between the scores from time 1 to time 2 for each of the dependent variables when comparing the total sample of children. However, when the sample was separated into severity groups, there were significant time by severity group interactions found for conduct problems, hyperactivity-inattention, peer problems, and prosocial behaviour. These results demonstrated that the severity group hypothesis that the effects of guided meditation would be stronger for children with a clinical presentation than children with normal mental health ratings was partially supported for School 3 with conduct problems, hyperactivity-inattention, peer problems, and prosocial behaviour, but not for emotional problems and self-esteem. In addition, the number of guided meditation sessions completed by each child had an impact on the peer problems for the borderline/abnormal group, but not for the normal group. The more guided meditation sessions the children in the borderline/abnormal group attended, the less peer problems experienced at time 2.

Cumulative Hypothesis

As mentioned in previous analyses, the results of the ANOVAs revealed that for each of the dependent variables there were no significant interactions across time and group for Schools 1 and 2, and no significant effect of time for School 3. These findings highlighted that for each of the dependent variables (emotional problems, conduct problems, hyperactivity-inattention, peer problems, prosocial behaviour, total difficulties and self-esteem) there were no significant differences between the scores from time 1 to time 2 for each of the schools. As no significant effects were found for Schools 1, 2 or 3, this highlighted that the cumulative hypothesis that children who have practised regular meditation experience even greater reduction in emotional problems, conduct problems, hyperactivity-inattention, and peer problems, and greater improvements in prosocial behaviour and self-esteem than first time meditators was not supported.

While there were no significant differences found between the scores from time 1 to time 2 for each of the dependent variables for the total sample, there were however significant time by severity group interactions reported for each of the dependent variables for Schools 1 and 2, and for conduct problems, hyperactivity-inattention, peer problems, and prosocial behaviour for School 3. This indicated that the change over time for the dependent variables differed across the normal and borderline/abnormal groups when the guided meditation and control groups were combined. Emotional problems, conduct problems, hyperactivity-inattention, and total difficulties increased from time 1 to time 2 for the normal group but decreased for the borderline/abnormal group. Prosocial behaviour decreased from time 1 to time 2 for the normal group but increased for the borderline/abnormal group, and self-esteem decreased from time 1 to time 2 for the high self-esteem group but increased for the low self-esteem group. Peer problems decreased slightly from time 1 to time 2 for the normal group but decreased considerably for the borderline/abnormal group. In School 3, conduct problems and peer problems did not follow these patterns. In School 3 conduct problems decreased slightly

from time 1 to time 2 for the normal group but decreased considerably for the borderline/abnormal group, and peer problems remained relatively the same from time 1 to time 2 for the normal group but decreased for the borderline/abnormal group.

The significant time by severity group interactions highlighted that both the reading and guided meditation were effective for the children in the borderline/abnormal group and low self-esteem group, but not for the children in the normal group and high self-esteem group. As the findings suggested that the guided meditation and reading were both more effective for the borderline/abnormal group and the low self-esteem group, further analyses were conducted to investigate if the cumulative hypothesis was supported for the borderline/abnormal group and the low self-esteem group. It was expected that the children from School 3 in the borderline/abnormal group and the low self-esteem group who had practised regular meditation would experience even greater reduction in emotional problems, conduct problems, hyperactivity-inattention, and peer problems, and greater improvements in prosocial behaviour and self-esteem than the first time meditators in the borderline/abnormal group and the low self-esteem group from Schools 1 and 2.

A series of 2 (time) x 2 (school) ANOVAs were computed for each of the dependent variables to test if the children in the borderline/abnormal group and the low self-esteem group from School 3 experienced a greater change in scores than the children in the borderline/abnormal group and the low self-esteem from Schools 1 and 2. To support the cumulative hypothesis for the borderline/abnormal group and the low self-esteem group, a significant interaction across time and school was expected. For this analysis Schools 1 and 2 were combined and School 3 was considered separately. As School 3 contained no control group, only the guided meditation groups in each of the three schools were compared. The ANOVAs also controlled for the number of sessions completed by the children. Table 12 displays the mean scores and standard deviations for each of the SDQ variables and self-esteem for the

borderline/abnormal group and the low self-esteem group in Schools 1, 2, and 3.

Table 12

Means and Standard Deviations for the SDQ Variables and Self-esteem for the Borderline/abnormal Group and Low Self-esteem Group in Schools 1, 2 and 3

Scale	Borderline/abnormal Group Schools 1 and 2 Combined	Borderline/abnormal Group School 3
Emotional problems time 1	6.45 (0.69)[a]	6.82 (1.02)[b]
Emotional problems time 2	5.64 (2.69)	6.14 (1.86)
Conduct problems time 1	4.13 (0.35)[c]	5.35 (1.23)[d]
Conduct problems time 2	3.88 (2.10)	4.00 (1.38)
Hyperactivity-inattention time 1	6.67 (0.72)[e]	7.19 (1.04)[f]
Hyperactivity-inattention time 2	5.33 (1.88)	6.26 (1.56)
Peer problems time 1	4.59 (0.80)[g]	4.68 (0.90)[h]
Peer problems time 2	3.46 (2.38)	3.52 (2.34)
Prosocial behaviour time 1	4.67 (0.52)[i]	4.09 (1.30)[j]
Prosocial behaviour time 2	5.83 (0.75)	5.64 (2.25)
Total difficulties time 1	18.45 (2.94)[k]	19.80 (3.25)[l]
Total difficulties time 2	16.54 (5.10)	18.05 (5.12)
	Low Self-esteem Group Schools 1 and 2	Low Self-esteem Group School 3
Self-esteem time 1	58.81 (16.47)[m]	58.10 (14.78)[n]
Self-esteem time 2	59.93 (21.86)	59.48 (19.89)

Note. Values in parentheses are standard deviations. Sample sizes at time 1 were the same at time 2.
[a]*n* = 11, [b]*n* = 28, [c]*n* = 8, [d]*n* = 20, [e]*n* = 15, [f]*n* = 27, [g]*n* = 17, [h]*n* = 25, [i]*n* = 6, [j]*n* = 11, [k]*n* = 11, [l]*n* = 30, [m]*n* = 57, [n]*n* = 62.

The results of the ANOVAs revealed that for each of the dependent variables there were no significant interactions across time and school. These findings suggested that for each of the SDQ variables and self-esteem there were no significant differences between the scores for the borderline/abnormal group and the low self-esteem group in School 3 than the borderline/abnormal group and the low self-esteem group in Schools 1 and 2. This highlighted that the

cumulative hypothesis was not supported for the borderline/abnormal group and the low self-esteem group, and the guided meditation did not have a greater effect on the children from School 3.

Summary

The cumulative hypothesis that children who have practised regular meditation experience even greater reduction in emotional problems, conduct problems, hyperactivity-inattention, and peer problems, and greater improvements in prosocial behaviour and self-esteem than first time meditators was not supported for the total sample, or separately for the borderline/abnormal group and low self-esteem group.

Teacher Qualitative Analysis

After the completion of the time 2 survey, the teachers in each of the 19 classes completed a Teacher Post-Survey. The teachers reported if their class enjoyed the guided meditation or reading, if they noticed any changes in the children after completing the guided meditation or reading, if they thought the guided meditation or reading was beneficial for the children, and if they would continue with the guided meditation or reading. All the teachers from the 19 classes provided qualitative data for the Teacher Post-Survey.

Of the 12 teachers in the guided meditation group, 3 teachers (25%) reported that their class enjoyed the guided meditation, 2 teachers (16.67%) said that their class did not enjoy the guided meditation, and 7 teachers (58.33%) had mixed responses i.e. reported yes and no comments. Table 13 displays the frequency and examples of the general themes and sub themes arising from the qualitative data obtained from the teachers in the guided meditation group for the question: “Did your class enjoy the meditation? Why/Why not?”

Table 13

Frequency and Examples of General Themes and Sub Themes Using Responses from Teachers in the Guided Meditation Group for the Question: "Did your Class Enjoy the Meditation? Why/Why not?"

General Theme	Sub Theme	*n*	Example Comments
Dislike	Poor CD	4	"Most students didn't connect to the audio."
	Difficulty	3	"Some students mentioned finding it more difficult on different days to 'switch off'."
	Boredom	2	"Students found the process a bit boring."
	Waste of time	1	"They felt it was a waste of time."
	Resistance	1	"Only a couple of grade 6 boys were resistant to the end, but the rest of the class told them that their attitude wasn't fair, so they at least let those around them meditate."
	Preferred alternate activity	1	"Some students would have preferred to have been doing another activity, such as independent reading or being read to by the teacher and these students stated that they find these activities a suitable way to meditate or relax and focus on learning."
	Not new	1	"Meditation isn't new to the kids so it didn't have a novelty factor."
Therapeutic	Time out	3	"In a high demand work term the 'time out' was appreciated by most."
	Relaxed	1	"Most appeared relaxed throughout."
	Quiet time	1	"(They) enjoyed the time out and quiet time."
Mixed views	Mixed views	5	"Some enjoyed it more than others."
Enjoyment	Value	1	"Some students appeared to enjoy the meditation sessions and these were the students who appeared to value the idea of meditation."
	Loved it	1	"The kids generally loved it."
	Co-operation	1	"I would have to say that generally they co-operated well".

As highlighted in Table 13, the coding of responses for the enjoyment of the guided meditation resulted in four general themes: dislike (50%, *n* = 26), therapeutic (19.23%), mixed views (19.23%) and enjoyment (11.54%). The most popular theme was dislike indicating that many of the children did not enjoy the guided meditation mainly because of the poor CD, difficulty with the guided meditation or boredom as a result of the practice. Some teachers

reported that the children thought the guided meditation was a waste of time and showed resistance to the practice, while others preferred to do an alternate activity. A teacher from School 3 stated that as the children were already participating in regular meditation prior to the commencement of the study, the guided meditation was not new and therefore didn't have a novelty factor. Another frequent theme was related to guided meditation being therapeutic and providing an opportunity for "time out", relaxation and quiet time for the children. Mixed views was also a common theme which indicated that some of the children in the class enjoyed the guided meditation while others did not. Finally, a minority of comments related to the theme of enjoyment, indicating that the children loved the guided meditation, some enjoyed it only if they valued the notion of meditation, and others co-operated with the teacher which was interpreted as enjoyment.

The seven teachers in the control group were asked if their class enjoyed the reading. Five teachers (71.43%) stated that their class enjoyed the reading while two teachers (28.57%) reported that their class did not. Table 14 depicts the frequency and examples of the general themes and sub themes arising from the qualitative data obtained from the teachers in the control group for the question: "Did your class enjoy the reading? Why/Why not?"

Table 14

Frequency and Examples of General Themes and Sub Themes Using Responses from Teachers in the Control Group for the Question: "Did your Class Enjoy the Reading? Why/Why not?"

General Theme	Sub Theme	*n*	Example Comments
Enjoyment	Free choice	3	"The students do enjoy this time where they can read texts of their choice."
	Value	2	"I think the fact the majority of the class enjoy reading and that they come from backgrounds where reading and books are valued, helped to make this an easy addition into the day."
	Loved it	2	"My grade love to read."
	Pleasure	2	"I think that one of the reasons they enjoyed it so much was that they could read what they liked and knew that they would not have to complete work about it so were reading for pleasure."
	No complaints	1	"Nobody complained."
Therapeutic	Quiet time	1	"They did enjoy the quietness of reading independently."
	Calm/settled	1	"I have always found it to be settling and calming for them."
Dislike	Difficulty	1	"(My grade) found it difficult to stop reading after ten minutes as directed by the task."
	Preferred alternate activity	1	"The feedback from the children was that they preferred the writing because it enabled them to clear their mind and focus where their brain took them."

As presented in Table 14, the responses for the enjoyment of reading highlighted the three general themes of enjoyment (71.43%, *n* = 14), therapeutic (14.29%) and dislike (14.29%). Enjoyment was definitely the most popular theme as the children loved the reading, and enjoyed the free choice of reading texts and reading for pleasure rather than having to complete work after reading. The children also valued reading as a practice and showed no complaints. A minority of comments were related to the therapeutic theme indicating that the children enjoyed the quiet time provided by the reading and were calm and settled. Also, a small number of comments indicated that some

children disliked the reading because they preferred to complete an alternate activity or experienced difficulty finishing the reading in the time allocated.

While there were some differences found between the guided meditation group and control group regarding the enjoyment of the guided meditation and reading, there were also some similar themes that emerged between the two groups in the qualitative data. These included the general themes of enjoyment (value and loved it), therapeutic (quiet time) and dislike (difficulty and preferred alternate activity).

The 12 teachers in the guided meditation group were asked if they noticed any changes in their children after completing the guided meditation. Of these, five teachers (41.67%) described no changes in their children, four teachers (33.33%) described changes in their children, and three teachers (25%) had mixed responses i.e. yes and no comments. Table 15 captures the frequency and examples of the general themes and sub themes arising from the qualitative data obtained from the teachers in the guided meditation group for the question: “Did you notice any changes in your students after completing the meditation? If so, what?”

Table 15

Frequency and Examples of General Themes and Sub Themes Using Responses from Teachers in the Guided Meditation Group for the Question: "Did you Notice any Changes in your Students after Completing the Meditation? If so, what?"

General Theme	Sub Theme	*n*	Example Comments
Therapeutic	Calm	4	"The entire class was always calmer and quieter after each session, as was I."
	Focused	2	"They were often particularly focused following a meditation session."
	Settled	1	"Some students appeared to be able to settle in to quiet group activities more successfully than in the past."
	Listened	1	"(They were) ready to listen."
	Rested	1	"They did seem a bit more rested after lunch."
No changes	No changes	6	"We were doing meditation previously, so there were no obvious changes."
Mixed views	Mixed views	1	"Some students appeared to be able to settle in to quiet group activities more successfully than in the past, although, there were some students with whom the inverse was the case."

As can be seen from Table 15, the coding of responses regarding the changes noticed in the children from the guided meditation group resulted in the three general themes of therapeutic (56.25%, *n* = 16), no changes (37.5%) and mixed views (6.25%). The most popular theme was therapeutic and the changes that were observed by the teachers as a result of the guided meditation were that the children were calm, focused, settled, and rested, and that they listened. The next most common theme was that the teachers observed no changes in their children. Finally, one comment was related to the theme of mixed views with positive changes being noticed in some children but then the opposite for other children in the same class.

Of the seven teachers in the control group that were asked if they noticed any changes in their children after completing the reading, five teachers (71.43%) said that they noticed changes, while two teachers (28.57%) did not. Table 16

illustrates the frequency and examples of the general themes and sub themes arising from the qualitative data obtained from the teachers in the control group for the question: “Did you notice any changes in your students after completing the reading? If so, what?”

Table 16

Frequency and Examples of General Themes and Sub Themes Using Responses from Teachers in the Control Group for the Question: “Did you Notice any Changes in your Students after Completing the Reading? If so, what?”

General Theme	Sub Theme	n	Example Comments
Therapeutic	Calm	4	“Students seemed calm after.”
	Settled	3	“Students settled while reading.”
	Worked better	2	“They tended to start tasks much better too.”
	Focused	1	“They were more focused.”
	Listened	1	“(Students) were much better listeners once reading was completed.”
No changes	No changes	2	“I didn’t notice any changes.”
Difficulty	Difficulty	1	“A couple found it hard to put their books down and switch to the next topic/lesson.”

As demonstrated in Table 16, the responses regarding the changes noticed in the children from the control group illustrated that there were three general themes of therapeutic (78.57%, *n* = 14), no changes (14.29%) and difficulty (7.14%). Therapeutic was the most popular theme and the changes that were noticed by the teachers as a result of the reading were that the children were calm, settled, and focused, and that they listened and worked better. A few comments were related to the fact that the teachers observed no changes in their children. One comment was associated with the theme of difficulty, and highlighted that a few children found it hard to put their books down and switch to another task after reading.

Across the guided meditation and reading, there were two similar general themes that emerged regarding the changes that were noticed in the children after the practices. Therapeutic was the important theme that was similar, and this included the sub themes of calm, focused, settled and listened. Another similarity was the general theme of no changes.

The 12 teachers in the guided meditation group were then asked if they thought the guided meditation was beneficial for the children in their class. Ten teachers (83.33%) reported that the guided meditation was beneficial, one teacher (8.33%) said that it was not beneficial, and one teacher (8.33%) made a mixed response i.e. yes and no. Table 17 outlines the frequency and examples of the general themes and sub themes arising from the qualitative data obtained from the teachers in the guided meditation group for the question: “Do you think the meditation was beneficial for your students? Why/Why not?”

Table 17

Frequency and Examples of General Themes and Sub Themes Using Responses from Teachers in the Guided Meditation Group for the Question: "Do you Think the Meditation was Beneficial for your Students? Why/Why not?"

General Theme	Sub Theme	*n*	Example Comments
Therapeutic	Focused	4	"I feel that it made them more focused."
	Calm/quiet	4	"It calmed what is an energetic and excitable group of students."
	Reflection	2	"I felt that it gave them time to reflect."
	Rested	1	"Yes I did think it was beneficial, particularly to have a bit of a rest after lunch, as a lot of them come in tired and bounced back a bit after the meditation."
Teaching Skills	Relaxation	1	"Yes - teaching them the skills to switch off and relax was good."
	Switching off	1	"Yes - teaching them the skills to switch off."
	Stillness	1	"I do think it's beneficial because the kids need to learn how to be still."
	Underlying messages	1	"I felt that it gave them....a focus as well as underlying messages."
Not beneficial	No value	1	"No, it wasn't adding value to our day."
	Imposition	1	"For those students who did not value the time, it was not particularly beneficial, as they seemed to see it as an imposition, rather than a choice."
	Too short	1	"I wonder if a 30 min session once or twice a week would be better than 10 min every day as I found the kids took so long to actually be still that many had only really just started to relax when it was over."
Value	Value	1	"Meditation was beneficial for those students who valued it."
Administration	Easy for teacher	1	"I am happy I used your meditation tape as it took the pressure off me to 'run a meditation session'."
No comment	No comment	1	

As shown in Table 17, the coding of responses regarding the benefits of the guided meditation resulted in six general themes: therapeutic (52.38%, $n = 21$), teaching skills (19.05%), not beneficial (14.29%), value (4.76%), administration (4.76%), and no comment (4.76%). The most popular theme was therapeutic with the teachers stating that the benefits of guided meditation

were that the children were focused, calm/quiet, and rested, and had time for reflection. The next most common theme was teaching skills and this included the skills of relaxation, stillness, switching off and underlying messages. Then there was the theme that the guided meditation was not beneficial because it was too short, some children treated it as an imposition, and it didn't add value to the children's day. One comment was recorded for the theme of value indicating that the guided meditation was beneficial to those children who valued it. One comment was also noted for administration and incorporated the benefits for the teacher in using the CD and not having to personally administer the guided meditation. Finally, there was one teacher who made no comment.

Of the seven teachers in the control group that were asked if they thought the reading was beneficial for the children in their class, five teachers (71.43%) said it was beneficial, one teacher (14.29%) said it was not beneficial, and one teacher (14.29%) reported a mixed response i.e. yes and no. Table 18 presents the frequency and examples of the general themes and sub themes arising from the qualitative data obtained from the teachers in the control group for the question: "Do you think the reading was beneficial for your students? Why/Why not?"

Table 18

Frequency and Examples of General Themes and Sub Themes Using Responses from Teachers in the Control Group for the Question: "Do you Think the Reading was Beneficial for your Students? Why/Why not?"

General Theme	Sub Theme	*n*	Example Comments
Therapeutic	Focused	3	"Most students were able to quickly focus on the next topic while remaining calm and focused."
	Calm/quiet	3	"Secondly, as mentioned they seemed calmer and quieter after the reading time."
	Relaxed	3	"Yes, I think it helped them to calm and to relax."
	Settled	2	"I have always found it to be settling and calming for them."
Benefits of reading	Reading practise	1	"Firstly any time spent reading is good as they are practising reading."
	Maintain interest in reading	1	"Reading on a daily basis keeps them connected to the text they are reading and maintains interest."
	Independence	1	"They are…doing something independently."
Unsure	Part of the curriculum	1	"I'm not sure it was beneficial for the students as independent reading is a part of our every day program anyway."
Not beneficial	Didn't work	1	"I think reading in general is great but I think for its purpose it didn't work for the group of students that I had."

As highlighted in Table 18, the responses regarding the benefits of reading emphasised four general themes: therapeutic (68.75%, *n* = 16), benefits of reading (18.75%), unsure (6.25%) and not beneficial (6.25%). The most popular theme was therapeutic with the teachers stating that the benefits of reading were that the children were focused, calm/quiet, relaxed and settled. The next most frequently mentioned theme related to the benefits of reading and included reading practise, maintaining interest in reading, and the independence of reading. One comment was reported for the theme unsure and another comment was noted for the theme of not beneficial because the reading didn't work for a particular class of children.

Across the guided meditation and control groups, there was one similar general theme that emerged relating to the benefits of the guided meditation and reading. This general theme was therapeutic which included the sub themes of focused, and calm/quiet.

The final question asked in the Teacher Post-Survey for the guided meditation group was whether the teachers would continue with the guided meditation. Of the 12 teachers, 10 (83.33%) reported that they would continue with the guided meditation, and 2 teachers (16.67%) said that they would not. Table 19 displays the frequency and examples of the general themes and sub themes arising from the qualitative data obtained from the teachers in the guided meditation group for the question: “Will you continue with the meditation? Why/Why not?”

Table 19

Frequency and Examples of General Themes and Sub Themes Using Responses from Teachers in the Guided Meditation Group for the Question: "Will you Continue with the Meditation? Why/Why not?"

General Theme	Sub Theme	*n*	Example Comments
Continue	If students need it	3	"I will do some meditation when I think the students need a bit of a break or are unsettled but I don't intend on doing it every day."
	Beneficial	2	"I will do this as I feel it has been beneficial."
	Part of the curriculum	2	"We as a school are expected to do meditation for 10 minutes daily."
	Later in the year	1	"We will take a break for a while however I would like to use them again this year."
	Use alternative meditation	1	"I have another CD of Christian meditation which goes for about 7 minutes which works well with our timing and once a week I'd like to do a longer session."
	If time permits	1	"If time permitted then yes."
	Yes	1	"Yes, I will continue meditating."
Not continue	Took teaching time	1	"No, the students didn't warm to it and it took up classroom teaching time."
	Do other relaxing activities	1	"The class will not be continuing with the meditation using the guided voiceover, although, the class has, and will continue to have a variety of quiet activities available for students to choose from in order to act as meditative/relaxing activities (such as independent reading, completing puzzles, etc.)."
No comment	No comment	1	

As can be seen in Table 19, the responses for continuing with the guided meditation showed that there were three general themes of continue (78.57%, *n* = 14), not continue (14.29%) and no comment (7.14%). The most popular theme was continue with the guided meditation when the students need it, later in the year, and if time permits, because it is beneficial and part of the curriculum. Other sub themes of continue with the guided meditation were to try alternative meditation and the general notion of continue. Two comments were recorded for the theme not continue and these were related to the fact that the children would not continue with the guided meditation because it took

up classroom teaching time and the class would rather pursue other relaxing activities (e.g. reading or puzzles) instead of the guided meditation. Lastly, there was one teacher who made no comment.

Of the seven teachers in the control group that were asked if they would continue with the reading, five teachers (71.43%) said they would continue, and two teachers (28.57%) said they would not continue with the reading. Table 20 illustrates the frequency and examples of the general themes and sub themes arising from the qualitative data obtained from the teachers in the control group for the question: "Will you continue with the reading? Why/Why not?"

Table 20

Frequency and Examples of General Themes and Sub Themes Using Responses from Teachers in the Control Group for the Question: "Will you Continue with the Reading? Why/Why not?"

General Theme	Sub Theme	*n*	Example Comments
Continue	Beneficial	2	"So yes, we will continue to read daily as it is beneficial in so many ways."
	Part of the curriculum	2	"We do independent reading each day of around 30 minutes so that sort of includes it."
	Enjoyment	1	"(Reading) is something that the students really enjoyed."
	Calm	1	"I still found it a good way to calm students down."
	Not as regularly	1	"We did, but not as regularly."
Not continue	Do other relaxing activities	2	"Would rather develop a chill time where we had a few activities we could do silently e.g. read, draw, colouring sheets, listen to music etc. their choice but must be silent and independent."

As presented in Table 20, the responses for continuing with the reading emphasised the two general themes of continue (77.78%, *n* = 9) and not continue (22.22%). The most popular theme was to continue with the reading as it was beneficial, part of the curriculum, enjoyable, and calmed the children.

Another sub theme was to continue with the reading but not as regularly as practised in the study. The less common theme was to not continue with the reading and instead do other relaxing activities such as drawing, colouring and listening to music.

Across the guided meditation and reading, there were two similar general themes that emerged relating to whether the teachers would continue with the practices. These included the general themes of continue (beneficial and part of the curriculum) and not continue (do other relaxing activities).

Summary

Overall, the qualitative data from the Teacher Post-Survey highlighted common themes that emerged for both the guided meditation and reading. For the enjoyment of both the guided meditation and reading there were three similar general themes of enjoyment (value and loved it), therapeutic (quiet time) and dislike (difficulty and preferred alternate activity). For the changes noticed in the children, there were two similar general themes of therapeutic (calm, focused, settled and listened) and no changes. With regards to the benefits of both the guided meditation and reading, the general theme of therapeutic (focused, and calm/quiet) was similar across the guided meditation and control groups. Finally, regarding continuing with the guided meditation and reading, the two general themes of continue (beneficial and part of the curriculum) and not continue (do other relaxing activities) were similar across the guided meditation and control groups.

The qualitative data highlighted that the teachers reported similar effects for the reading and guided meditation. It was anticipated that the teachers would report that the guided meditation was beneficial and therapeutic for the children, however it was not expected that the practice of reading would have the same effect. The teachers reported that reading was therapeutic for the children as they were calm, quiet, focused, settled and listened after the reading activity, as was the case for the guided meditation.

Investigating Teacher Effects

As there were 19 different classes involved in the study and the qualitative data from the teachers highlighted some differences in opinions regarding the guided meditation and reading, analysis was conducted to investigate if there were any teacher effects across the classes. It is possible that the teachers may have had an impact on the effect of meditation on the children in their class through their interest in meditation or whether they perceived meditation to be valuable.

In order to test if teachers were having an effect on the children's scores, difference scores were computed for each of the SDQ variables and self-esteem for each class using the scores from time 1 minus the scores from time 2. Each school was investigated separately and each class was assigned a class label, for example 1Gr5AMed and 2Gr5/6CMed. The class label commenced with a "1", "2" or "3" to represent either School 1, School 2 or School 3. Then the label of "Gr 5", "Gr 6" or composite "Gr 5/6" was assigned to denote the grade level of the class, and letters "A" to "G" were allocated to each of the classes in order to distinguish between them all. Finally, "Med" was assigned to the classes that were in the guided meditation group and "Con" was allocated to the classes in the control group.

For an improvement to be found in emotional problems, conduct problems, hyperactivity-inattention, peer problems, and total difficulties, the difference scores for the class were expected to be positive. For an improvement in prosocial behaviour and self-esteem, it was anticipated that the difference scores for the class were negative.

The number of children in each class ranged from 14 to 25 children. As the number of children in each class was so small there were not sufficient numbers to maintain adequate statistical power and include them in the other data analyses.

School 1

In order to investigate the differences across the teachers, a summary of the teacher qualitative data and the mean number of sessions completed by each class at School 1 was collated and is presented in Table 21.

Table 21

Summary of the Teacher Qualitative Data and Mean Number of Sessions Completed by Each Class in School 1

Item	1Gr5AMed	1Gr5BMed	1Gr6DMed	1Gr6ECon	1Gr5CCon	1Gr6FCon
Enjoyment	Yes	Yes	No	Yes	Yes	Yes
Changes	Mixed	Yes	No	Yes	Yes	Yes
Beneficial	Yes	Yes	No	Yes	Yes	Yes
Continue	Yes	Yes	No	Yes	Yes	Yes
Mean number of sessions	31.00	31.50	28.17	32.71	30.76	32.14
Number of students	18	22	18	21	21	21

Note. n = 121.

As highlighted in Table 21, most of the teachers in School 1 reported about the study in a favourable way, except for the teacher of Class 1Gr6DMed. All the other teachers reported that the guided meditation was beneficial for the children in their class, and that they would like to continue with the guided meditation or reading. Figure 17 displays the difference scores for each of the dependent variables across each of the classes in School 1.

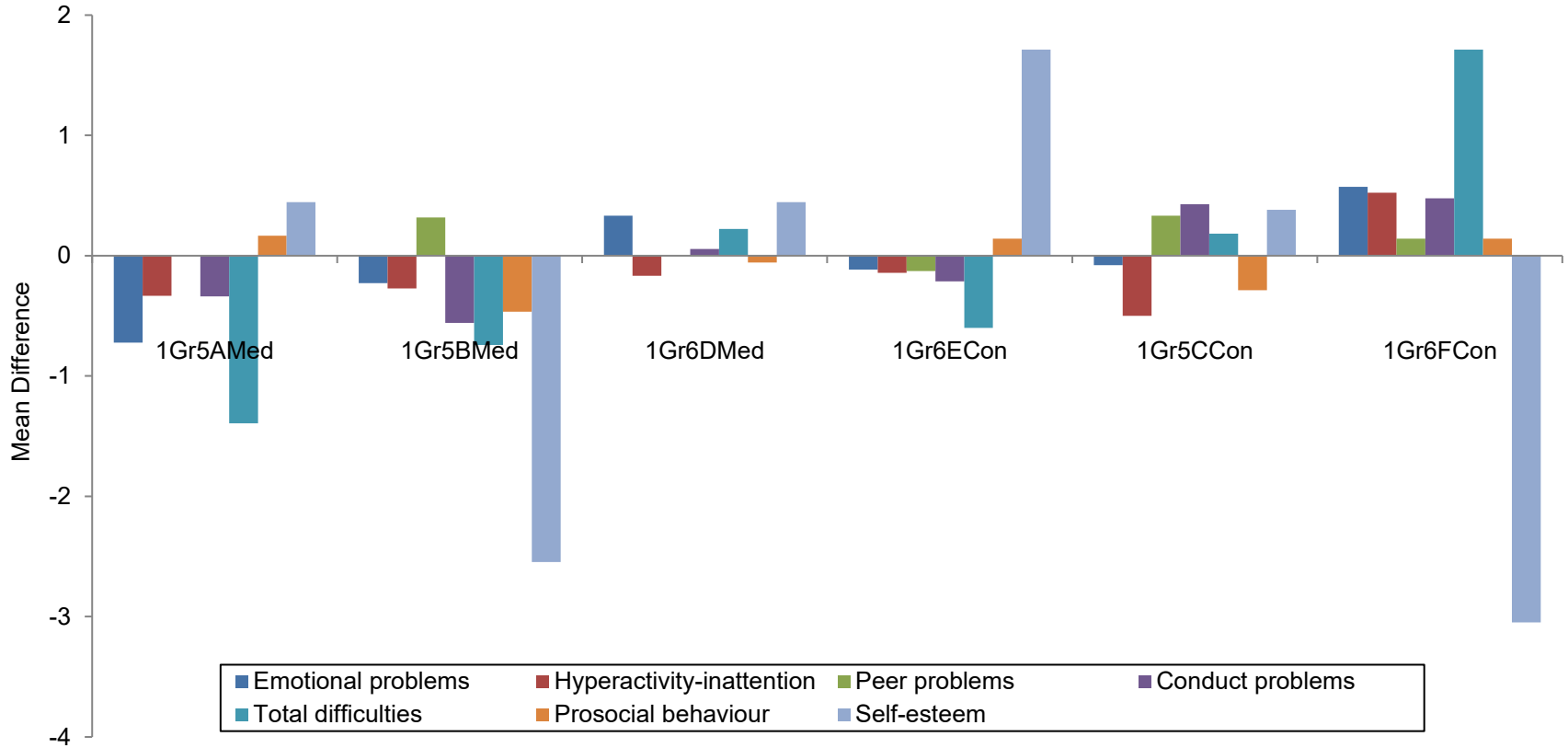

Figure 17. Difference scores for the SDQ variables and self-esteem across each of the classes in School 1.

As can be seen by the first three classes in Figure 17, the guided meditation classes did not all experience improvements in SDQ and self-esteem scores. For example, with Class 1Gr5AMed the difference scores for emotional problems, conduct problems, hyperactivity-inattention, and total difficulties were negative. In order for improvements to be found in these outcome measures, the difference scores needed to be positive, therefore indicating that on average there was a decline in these outcomes for Class 1Gr5AMed. In order for Class 1Gr5AMed to have improvements in prosocial behaviour and self-esteem the difference scores for the class needed to be negative, however for this class they were positive, highlighting that on average the prosocial behaviour and self-esteem of the children in this class tended to deteriorate. Interestingly, despite being in the control group, Class 1Gr6FCon demonstrated improvements in emotional problems, hyperactivity-inattention, peer problems, conduct problems, total difficulties and self-esteem.

Having a teacher who was positive in his/her feedback about the study in the Teacher Post-Survey did not necessarily guarantee that the children in the class experienced improvements in their scores for the SDQ and self-esteem. For example, as illustrated in Table 21, the teacher in Class 1Gr6ECon reported very favourably about the reading in the class, however the children did not demonstrate improvements in any of the outcome measures, and in fact reported a decline in all of their scores, unlike Class 1Gr6FCon and Class 1Gr5CCon that were both in the control group and yet demonstrated many improvements in the outcome measures.

Similarly, having a teacher who was negative in his/her feedback about the guided meditation in the Teacher Post-Survey did not equate to children in the class reporting a decline in their SDQ and self-esteem scores. For example, as shown in Table 21, the teacher in Class 1Gr6DMed reported that the guided meditation was not enjoyable or beneficial for the class, that no changes were noticed in the children after the guided meditation, and that the class would not continue with the guided meditation after the study. Despite the negative feedback from the teacher towards the guided meditation, the children in this

class experienced improvements in emotional problems, conduct problems, prosocial behaviour and total difficulties. In general, there did not appear to be a pattern of difference scores that would suggest that the teachers in School 1 were having an effect on the children's scores.

School 2

Table 22 outlines a summary of the teacher qualitative data and the mean number of sessions completed by each class at School 2.

Table 22

Summary of the Teacher Qualitative Data and Mean Number of Sessions Completed by Each Class in School 2

Item	2Gr5/6AMed	2Gr5/6CMed	2Gr5/6DMed	2Gr5/6ECon	2Gr5/6FCon	2Gr5/6GCon	2Gr5/6BCon
Enjoyment	Mixed	Mixed	Mixed	Mixed	Yes	Yes	Mixed
Changes	Yes	Yes	Mixed	No	No	Yes	Yes
Beneficial	Yes	Yes	Mixed	No	Mixed	Yes	Yes
Continue	Yes	Yes	No	Yes	No	Yes	No
Mean number of sessions	32.68	35.88	35.67	33.96	32.89	34.21	31.75
Number of students	19	24	21	23	18	14	20

Note. n = 139.

As indicated in Table 22, there was more variability in the teacher qualitative data in School 2 than School 1. Four out of seven teachers reported that the guided meditation or reading was beneficial for the class, that they noticed changes in the children after the practice, and that the class would like to continue with the guided meditation or reading. There were mainly mixed responses for the children's enjoyment of the guided meditation or reading. Figure 18 presents the difference scores for each of the SDQ variables and self-esteem across each of the classes in School 2.

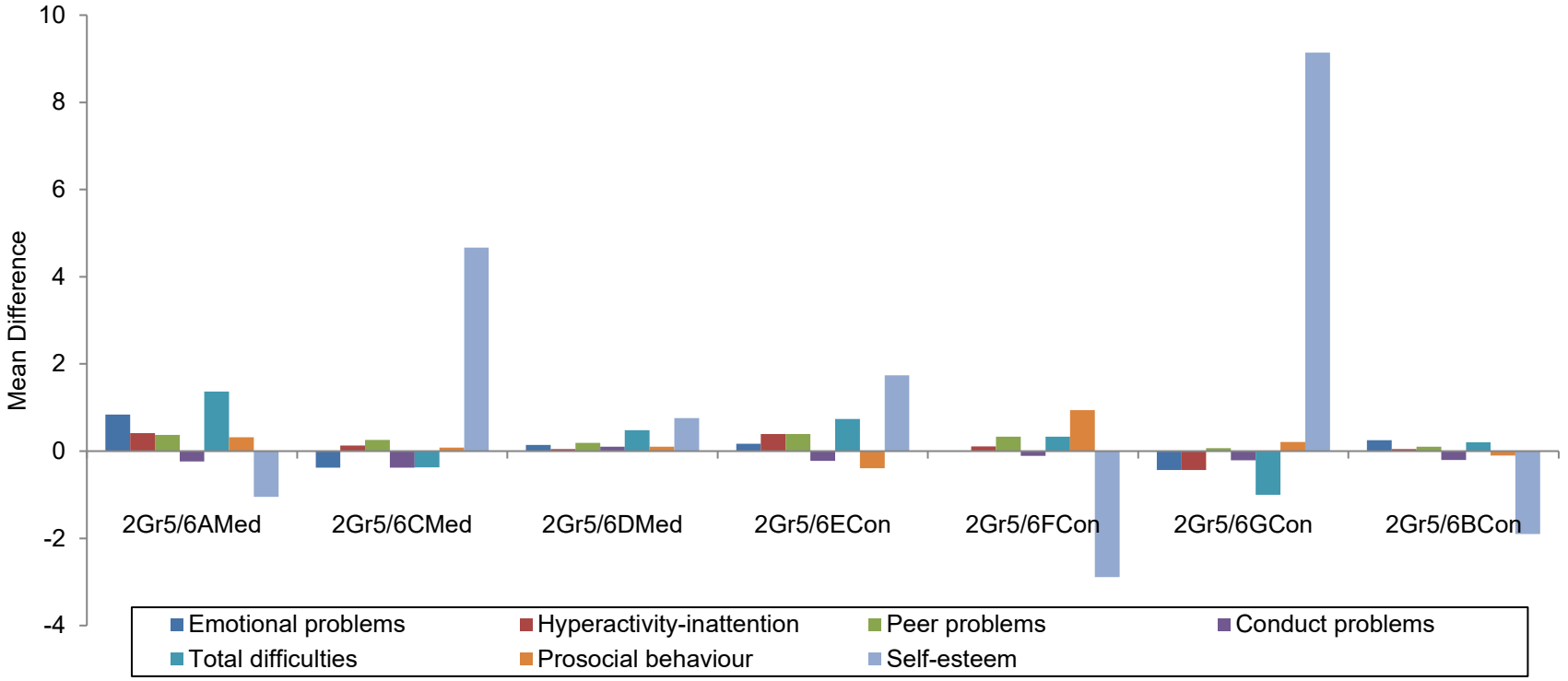

Figure 18. Difference scores for the SDQ variables and self-esteem across each of the classes in School 2.

As illustrated in Figure 18, both control and guided meditation classes experienced improvements in the SDQ and self-esteem scores. For example, the guided meditation Class 2Gr5/6DMed on average experienced improvements in emotional problems, conduct problems, hyperactivity-inattention, peer problems, and total difficulties, and the control Class 2Gr5/6BCon on average experienced improvements in self-esteem and all of the SDQ variables except conduct problems.

School 2 was similar to School 1 in that teachers who provided positive feedback about the guided meditation or reading did not necessarily have children in the class that experienced improvements in all of their SDQ and self-esteem scores. This was true for Class 2Gr5/6GCon whose teacher reported favourably about the reading in the class, however the children only demonstrated improvements in their scores for peer problems. Overall, it appeared that there were no patterns of difference scores that would indicate that the teachers in School 2 were having an effect on the children's scores.

School 3

School 3 contained no control group so all the classes completed the guided meditation. Table 23 captures a summary of the teacher qualitative data for each of the guided meditation classes in School 3 including the mean number of sessions completed by each class.

Table 23

Summary of the Teacher Qualitative Data and Mean Number of Sessions Completed by Each Class in School 3

Item	3Gr5AMed	3Gr5BMed	3Gr5CMed	3Gr6DMed	3Gr6EMed	3Gr6FMed
Enjoyment	Mixed	Mixed	Mixed	No	Yes	Mixed
Changes	Mixed	No	No	No	No	Yes
Beneficial	Yes	Yes	Yes	Yes	Yes	Yes
Continue	Yes	Yes	Yes	Yes	Yes	Yes
Mean number of sessions	32.81	27.39	26.74	13.71	25.60	30.63
Number of students	16	18	19	17	25	19

Note. n = 114.

As demonstrated in Table 23, all the teachers in School 3 viewed the guided meditation as beneficial and indicated that they would continue with the practice after the study finished. There were however, mixed responses for whether the class enjoyed the guided meditation, and if there were any changes noticed in the children as a result of the guided meditation. Four out of six teachers reported that they noticed no changes in the children after the guided meditation. It is possible that as the children in School 3 were already participating in regular meditation prior to the commencement of the study, the changes that may have occurred after starting the guided meditation may not have been evident because the children were already regular meditators.

Finally, as shown in Table 23, Class 3Gr6DMed completed considerably less guided meditation sessions than all the other classes in School 3 as the teacher was away overseas for four weeks. Figure 19 highlights the difference scores for each of the dependent variables across each of the classes in School 3.

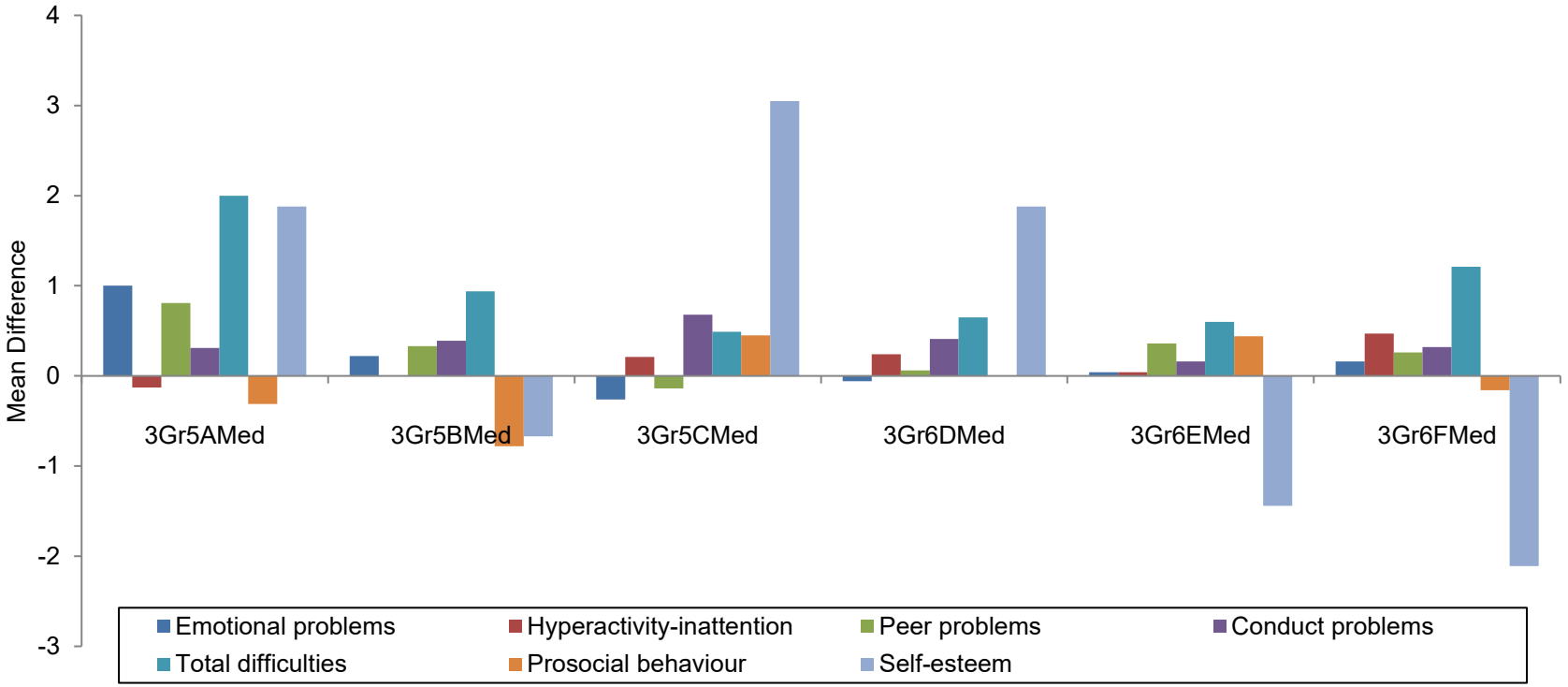

Figure 19. Difference scores for the SDQ variables and self-esteem across each of the classes in School 3.

As presented in Figure 19, each of the classes reported improvements in many of the SDQ and self-esteem scores which was expected for the guided meditation group. Class 3Gr6FMed was the only class across the three schools to report improvements for each of the SDQ variables and self-esteem. Overall, there did not appear to be a pattern of difference scores that would indicate that the teachers in School 3 were having an effect on the children's scores.

Summary

After careful inspection of the difference scores for each of the classes across the three schools, there was no evidence to suggest that the teachers were having an effect on the children's scores. For all the classes across the three schools self-esteem appeared to demonstrate the greatest variability amongst all the dependent variables. The SDQ variables showed difference scores between 2 and -1.39, however the self-esteem difference scores ranged from 9.14 to -3.05.

Children's Reflections on the Guided Meditation

At the completion of the trial, the children in the guided meditation group were asked to comment on the guided meditation in the Time 2 Meditation Survey. The children answered the following questions: "Did you enjoy the meditation?", "Do you think the meditation was beneficial?", and "Would you like to continue with the meditation?"

The results revealed that of the 236 children in the guided meditation group from the three schools, 99 children (41.95%) enjoyed the guided meditation while 135 children (57.20%) did not. Missing data for this question were recorded for two children (0.85%). The findings also suggested that 130 children (55.08%) from the three schools thought the guided meditation was beneficial, and 103 children (43.64%) did not find it beneficial, while missing data were found for 3 children

(1.27%). Finally, the results indicated that 91 children (38.56%) from the three schools wanted to continue with the guided meditation, however 142 children (60.17%) did not wish to continue. Missing data for this item was collected for 3 children (1.27%).

Summary of Results

When comparing the total sample of children, the outcome hypothesis that children in the guided meditation group would experience greater reductions in emotional problems, conduct problems, hyperactivity-inattention, and peer problems, and greater improvements in prosocial behaviour and self-esteem than the children in the control group was not supported for Schools 1 and 2. However, when the sample was separated into severity groups and both the control and guided meditation groups were combined, the children in the borderline/abnormal group and low self-esteem group experienced greater reductions in each of the outcome measures, however this was not the case for the children with normal mental health ratings.

When comparing the total sample of children, the severity group hypothesis that the effects of guided meditation would be stronger for children with a clinical presentation than children with normal mental health ratings was partially supported for School 3 with conduct problems, hyperactivity-inattention, peer problems, and prosocial behaviour, but not for emotional problems and self-esteem. In contrast, the severity group hypothesis was not supported for Schools 1 and 2 when comparing the total sample of children in the guided meditation and control groups. However, when the guided meditation and control groups were combined in Schools 1 and 2, the effects of guided meditation and reading were stronger for each of the outcome measures for children with a clinical presentation than children with normal mental health ratings.

The cumulative hypothesis that children who have practised regular meditation experience even greater reduction in emotional problems, conduct problems, hyperactivity-inattention, and peer problems, and greater improvements in prosocial behaviour and self-esteem than first time meditators was not supported.

The results highlighted that reading was as effective as the guided meditation for the children from Schools 1 and 2 in the borderline/abnormal group and low self-esteem group, but not for the children in the normal group and high self-esteem group. While there were no significant effects found for the children in the borderline/abnormal group and low self-esteem group when these groups were separated into control and guided meditation groups, there were effects reported when the guided meditation and control groups were combined. When both the guided meditation and control groups were combined, the children from Schools 1 and 2 in the borderline/abnormal groups and low self-esteem groups demonstrated stronger effects for each of the outcome measures than the normal groups.

When the guided meditation and control groups were combined in Schools 1 and 2, the number of guided meditation or reading sessions completed by each child had an impact on the emotional problems, peer problems and total difficulties for the borderline/abnormal group, but not for the normal group. The more guided meditation or reading sessions the children in the borderline/abnormal group attended, the less emotional problems, peer problems and total difficulties experienced. Therefore, the children's emotional problems, peer problems and total difficulties decreased the more guided meditation or reading sessions they completed. This again indicated that for the borderline/abnormal group, reading had a similar effect to the guided meditation on the children's outcome measures.

The results also indicated that in School 3, the number of guided meditation sessions completed by each child had an impact on the peer problems for the borderline/abnormal group, but not for the normal group. The more guided

meditation sessions the children in the borderline/abnormal group attended, the less peer problems experienced.

The qualitative data from the Teacher Post-Survey also demonstrated that reading had similar effects to the guided meditation. This was demonstrated in the common themes that emerged in the qualitative data for both the guided meditation and reading. For the enjoyment of both the guided meditation and reading there were three similar general themes of enjoyment (value and loved it), therapeutic (quiet time) and dislike (difficulty and preferred alternate activity). For the changes noticed in the children, there were two similar general themes of therapeutic (calm, focused, settled and listened) and no changes. With regards to the benefits of both the guided meditation and reading, the general theme of therapeutic (focused, and calm/quiet) was similar across the guided meditation and control groups. Finally, regarding continuing with the guided meditation and reading, the two general themes of continue (beneficial and part of the curriculum) and not continue (do other relaxing activities) were similar across the guided meditation and control groups.

The qualitative data highlighted that the teachers reported similar effects for the reading and guided meditation. It was anticipated that the teachers would report that the guided meditation was beneficial and therapeutic for the children, however it was not expected that the practice of reading would have the same effect. The teachers reported that reading was therapeutic for the children as they were calm, quiet, focused, settled and listened after the reading activity, as was the case for the guided meditation.

A comparison of the schools highlighted that the children in Schools 1 and 2 were fairly similar in their SDQ and self-esteem scores, however the children in School 3 were different to the children in Schools 1 and 2. The children in School 3 reported significantly higher scores on conduct problems and total difficulties at time 1 than the children in Schools 1 and 2. The children in School 3 also recorded

significantly higher scores on emotional problems and hyperactivity-inattention at time 1, and significantly higher scores on hyperactivity-inattention and total difficulties at time 2 than the children in School 2. This was contrary to expectations as it was anticipated that the children in School 3 would have lower scores on these outcome measures as they were regular meditators prior to the commencement of the study.

Comparisons of the SDQ and self-esteem severity groups across the total sample highlighted some significant differences between the two severity groups. Gender differences were found across the sample with significantly more females in the borderline/abnormal group for emotional problems than males, and more males in the borderline/abnormal group for prosocial behaviour than females. There were also significantly more ESL children in the borderline/abnormal group for peer problems than English-speaking children. In addition, there were also some school differences in the SDQ and self-esteem severity groups with significantly more children from School 3 in the borderline/abnormal group for emotional problems and total difficulties than Schools 1 and 2, and there were also significantly less children from School 2 in the borderline/abnormal group for emotional problems than Schools 1 and 3.

No teacher effects were found after careful inspection of the difference scores for each of the classes across the three schools. Findings revealed that there was no evidence to suggest that the teachers were having an effect on the children's scores. In addition, for all the classes across the three schools, self-esteem appeared to demonstrate the greatest variability amongst all the outcome measures.

Finally, the reflections from the children in the guided meditation group showed that there were more children that did not enjoy the guided meditation than children who did. There were also more children who reported that that guided meditation was beneficial than those who did not, and there were more children

that did not wish to continue with the guided meditation than those who did want to continue.

Chapter 8: Discussion

Overview

This chapter discusses the findings of the study. Firstly, a summary of the results for each of the hypotheses is briefly outlined, followed by a more detailed discussion on the reasons for the findings. Following this, the strengths and limitations of the study are discussed. Directions for future research are also presented, along with the implications of the findings for schools. The thesis ends with a final conclusion about the use of guided meditation and reading with children in primary schools.

Summary of the Findings

Overall, the findings of the study only partially supported one of the hypotheses. When comparing the total sample of children in the guided meditation and control groups for Schools 1 and 2, the results indicated that there was no support for the outcome hypothesis that children in the guided meditation group would experience greater reductions in emotional problems, conduct problems, hyperactivity-inattention, and peer problems, and greater improvements in prosocial behaviour and self-esteem than the children in the control group. However, when the sample was separated into severity groups and both the control and guided meditation groups were combined, the children with a clinical presentation experienced greater reductions in each of the outcome measures, however this was not the case for the children with normal mental health ratings.

These results suggested that guided meditation was associated with significant improvements in children's behaviour, mental health and well-being for children with a clinical presentation. These findings supported previous studies (Harrison et al., 2004; Joyce et al., 2010; Steiner et al., 2013) where different types of

meditation were linked to decreased emotional problems. The results were also consistent with those of Barnes et al. (2003) who found that transcendental meditation resulted in a significant decrease in conduct problems for adolescents. Furthermore, these results were in line with those of Harrison et al. (2004) who outlined that children with ADHD using Sahaja Yoga meditation demonstrated decreased hyperactivity, inattention, impulsivity, and conflict at school and improvements in social abilities and children's self-esteem. Finally, the findings of the current study also supported those of Steiner et al. (2013) where yoga was related to greater prosocial behaviour in children.

The severity group hypothesis that the effects of guided meditation would be stronger for children with a clinical presentation than children with normal mental health ratings was partially supported for School 3 with conduct problems, hyperactivity-inattention, peer problems, and prosocial behaviour, but not for emotional problems and self-esteem. This finding indicated that the effect of the guided meditation was stronger for the children with a clinical presentation from School 3 in relation to conduct problems, hyperactivity-inattention, peer problems, and prosocial behaviour.

In contrast, the evidence indicated that the severity group hypothesis was not supported for Schools 1 and 2 when comparing the total sample of children in the guided meditation and control groups. However, when the guided meditation and control groups were combined, the findings revealed that guided meditation was associated with stronger effects for each of the outcome measures for the children with a clinical presentation than children with normal mental health ratings. These results supported the findings of Joyce et al. (2010) who found that mindfulness demonstrated improvements in emotional health, particularly for those students who scored in the borderline and abnormal categories as classified by the SDQ.

Finally, the findings in the current study indicated that there was no support for the cumulative hypothesis. The children who practised regular meditation did not

experience even greater reduction in emotional problems, conduct problems, hyperactivity-inattention, and peer problems, and greater improvements in prosocial behaviour and self-esteem than first time meditators. These results were contrary to those reported by Valentine and Sweet (1999) and Sabel (1980) where the cumulative effects of meditation were noted with long-term meditators.

Overall, guided meditation was found to be effective in improving the mental health outcomes for children with a clinical presentation of emotional problems, conduct problems, hyperactivity-inattention, peer problems, prosocial behaviour and self-esteem. However, the findings indicated that the control procedure of reading had a similar effect to the guided meditation. Unexpectedly, reading was also found to be an effective way to improve the mental health outcomes of children with a clinical presentation.

Reading and Guided Meditation

Only one of the hypotheses for the current study was partially supported. One of the reasons for this was due to the unexpected result that the control procedure of reading was found to have similar effects to the guided meditation. The results highlighted that reading was as effective as the guided meditation. This was not anticipated, but was highlighted in a series of results found in the study.

Firstly, reading was found to be as effective as guided meditation for the children with a clinical presentation from Schools 1 and 2. While there were no significant effects found for the children in the borderline/abnormal group and low self-esteem group when these groups were separated into guided meditation and reading groups, there were effects reported when the guided meditation and control groups were combined. When both the guided meditation and control groups were combined, the children from Schools 1 and 2 in the borderline/abnormal groups and low self-esteem groups demonstrated stronger

effects for each of the outcome measures in comparison to the normal groups. This highlighted that reading was as effective as the guided meditation for children in Schools 1 and 2 with a clinical presentation. It also illustrated that both guided meditation and reading were effective over time. If the effect of guided meditation and reading was only attributed to the natural effects of time, then it would be expected that the children in the normal groups would have shown improvements in the outcome measures along with the children with clinical presentations. As this was not the case, and only the children with clinical presentations demonstrated improvements in each of the outcome measures, this indicated that both the guided meditation and reading were effective over time.

Secondly, reading also had a similar effect to the guided meditation on the children's outcome measures. When the guided meditation and reading groups were combined in Schools 1 and 2, the number of guided meditation or reading sessions completed by each child had an impact on the emotional problems, peer problems and total difficulties for the borderline/abnormal group, but not for the normal group. The more guided meditation or reading sessions the children in the borderline/abnormal group attended, the less emotional problems, peer problems and total difficulties experienced. Therefore, the children's emotional problems, peer problems and total difficulties decreased the more guided meditation or reading sessions they completed. These results highlighted that it didn't matter whether the children in the high severity groups completed guided meditation or reading, the decreased effect on their emotional problems, peer problems and total difficulties was similar.

The qualitative data from the Teacher Post-Survey also demonstrated that reading had similar effects to the guided meditation because there were common themes that emerged for both practices. When asked if the children enjoyed the guided meditation or reading, the teachers reported two similar general themes of enjoyment and therapeutic. This suggested that the children enjoyed both the guided meditation and reading because they valued the activities and loved

performing them. The teachers also reported that both the guided meditation and reading were therapeutic as they provided an opportunity for the children to experience some quiet time.

The qualitative data also revealed that the teachers noticed similar changes in the children as a result of both the guided meditation and reading. The teachers reported that both practices were therapeutic as the children were focused, calm, settled and listened after completing the practices. Similarly, the teachers reported therapeutic benefits for both the guided meditation and reading as the children were focused, calm and quiet as a result of the practices.

Lastly, the teachers indicated that they would continue with the guided meditation and reading because both of the practices were beneficial for the children and were also part of the existing school curriculum. Overall, the qualitative data highlighted that the teachers reported similar themes and effects for both the reading and guided meditation. It was anticipated that the teachers would report that the guided meditation was beneficial and therapeutic for the children, however it was not expected that the practice of reading would have the same effect. The teachers reported that reading was therapeutic for the children as they were calm, quiet, focused, settled and listened after the reading activity, as was the case for the guided meditation.

According to the teachers' responses in the Teacher Post-Survey reading was therapeutic for the children in the sample. The quantitative data also highlighted that reading was particularly effective in improving the mental health outcomes for children with a clinical presentation. This was an unexpected discovery. It is well documented that children with emotional and behavioural disorders experience academic deficits, especially in the area of reading (Strong, Wehby, Falk, & Lane, 2004). Much of the research into reading has documented that children with mental health problems have reading difficulties, but it appears that little research has been conducted on the use of reading as a strategy for improving the mental

health outcomes of this population. Research conducted by Lane, O'Shaughnessy, Lambros, Gresham, and Beebe-Frankenberger (2001) reported that in a small group of first-grade children, maladaptive behaviours were reduced in the classroom and on the playground as the children's beginner reading skills improved. While this research implemented a specific reading intervention with the sample of children and was administered by a facilitator, the current study demonstrated improvements in mental health outcomes simply by allowing the children an opportunity to independently read a book of their choice.

Being involved in an enjoyable and relaxing activity may be why reading was so effective for the children in the control group. In the Teacher Post-Survey, teachers reported that only 25% of children enjoyed the guided meditation, whereas 71% enjoyed the reading, indicating that reading appeared to be more enjoyable than guided meditation. Of the 14 teacher comments written on the Teacher Post-Survey about the children's enjoyment of the reading, only one comment was negative. All the other comments from teachers noted how the children loved to read and come from backgrounds where reading and books were valued. The teachers explained that the children particularly enjoyed reading texts of their own choice, and enjoyed the quietness of reading independently, and didn't want to stop reading after the allocated 10 minutes had finished. As the reading was such an enjoyable activity for the children, and they were sitting or lying in a relaxed position while reading, this activity may have actually elicited the relaxation response, just like the guided meditation.

Benson et al. (1974) outlined that there are four basic elements that are usually necessary to elicit the relaxation response, which effectively decreases sympathetic nervous system activity and increases parasympathetic nervous system activity. These elements include: mental device; passive attitude; decreased muscle tonus; and quiet environment. Mental device refers to the use of a constant stimulus, for example, a sound, word or phrase that is repeated, or fixing a gaze at an object with the aim being to move away from logical, externally-

oriented thought. The passive attitude entails disregarding distracting thoughts if they occur and redirecting the attention back to the practice. The decreased muscle tonus means that the individual should be in a comfortable posture so that minimal muscular work is needed. And finally, the quiet environment refers to creating a quiet setting for the practice to take place that has decreased environmental stimuli.

Upon inspection of these four basic elements required to elicit the relaxation response, it is possible that the reading completed by the children in the study fulfilled most, if not all of these four requirements. The mental device may have been completed as following the text of a book and fixing the gaze on the book may have enabled the children to shift away from logical, externally-oriented thought. Instead of following the imaginative journey of the guided meditation, the children in the reading group would have been creating an imaginative journey of the story in their mind. This practice would have helped the children to direct their attention in a specific way, like in the guided meditation. As the children in the control group were allowed to read books of their own choice, their interest in the text would have helped to maintain their attention to the story. The element of passive attitude would have been completed in the study as the children would have noticed if their thoughts were drifting from the text, and brought their attention back to their reading. The element of decreased muscle tonus would have been attained as the teachers instructed the children to sit in a comfortable position on a chair or cross-legged, or lie on the floor, and minimal muscular work was required. And finally, the element of a quiet environment would have been achieved in the study as the reading was completed in a quiet environment with no interruptions as a Reading Sign was placed outside the classroom door that read, “Come back in 10 minutes. We are reading.” (see Appendix W). It appears that the reading conducted in the study may have activated the relaxation response as each of the four necessary elements required to elicit the relaxation response were achieved.

As explained by Benson (1993), the relaxation response is responsible for a number of physiological changes including a decrease in below resting levels in oxygen consumption, heart rate, breathing rate and muscle tension. When the body is relaxed, there is less need for energy, so the blood flow to the muscles reduces, and instead the blood is directed to the brain and skin, producing a sensation of warmth and rested mental alertness (Borysenko, 1987). It may be that this activation of the parasympathetic response was also elicited during the practice of reading, thereby producing the same effect on the body as guided meditation. As explained by Delmonte and Kenny (1985), the feeling of relaxation becomes conditioned to the meditation. It is possible then that the practice of reading also became a conditioned stimulus that elicited a conditioned relaxation response in the children. Regular reading then increased the conditioning of the relaxation response, and subsequently the stress hormones in the body continued to be reduced, and increased parasympathetic activity was promoted. In addition, the release of the mood stabilising neuro-hormones and neurotransmitters dopamine, serotonin and melatonin in the limbic brain regions increased feelings of well-being and positive affect. Consequently, the more the children read, the greater their experience of relaxation, and the greater their feelings of well-being and positive affect, thereby producing therapeutic benefits.

Meditation helps the body to rest and relax. Biologically and emotionally we intermittently need time to recuperate and restore our energy levels. Meditation allows the body to regain equilibrium by putting the mind into neutral gear and focusing on the present moment, and withdrawing attention from daily matters, the past and worries about the future. Meditation helps the mind let go of all the things that pull it out of the moment (Borysenko, 1987). As described by Borysenko (1987), meditation is a practice that keeps the attention pleasantly anchored in the present moment. It appears that reading may achieve the same result, as the reader's attention is directed in a deliberate way to the story evolving in the book. This process may allow the reader to be totally immersed in the storyline, and therefore focus on the present moment, like in meditation.

Another possible reason why reading had similar effects to the guided meditation may be because of the level of experience of the meditators in the study. Kristeller and Rikhye (2008) highlighted that there are different stages of practice in meditation. They argued that the effects of meditation differ depending on the stage of practice or experience level of the meditator. For example, the range of effects vary from the beginning meditator to the most experienced monks. The authors proposed that there are four stages of practice including: early practice; intermediate – early practice; intermediate – later practice; and late stage. In the first stage of early practice, the meditator attempts to narrow the attention and bring awareness to a single focus instead of allowing the monkey mind to bounce around. Also, the meditator avoids judgement over the experience and endeavours to disengage from thoughts and reactions. The authors emphasised that at this level of early practice, the effects of meditation may be similar to those of other relaxation techniques, or distracting activities, such as reading or watching television. It may be that because many of the children in the study were first time meditators, they may have been operating at this early practice stage of meditation, and therefore the effects of the guided meditation were similar to that of the reading.

It was anticipated that the children in School 3 who engaged in regular meditation prior to the commencement of the study may have operated at a more developed stage of meditation practice, like the intermediate – early practice level. As described by Kristeller and Rikhye (2008) this stage is achieved after extended meditation practise, and the meditator is able to take more conscious control of attention, bring relaxation into other situations, and direct thoughts so that they no longer jump around as quickly. It is difficult to determine the stage of meditation practice achieved for each of the children in the study as this was not assessed. Also, the results highlighted that the cumulative hypothesis was not supported suggesting that the effect of guided meditation was not greater for the regular meditators than the first time meditators.

Meditation is a self-administered and internal process where the meditator controls the experience. As outlined by J. M. Davidson (1976), one of the major difficulties of studying meditation is that it is difficult to validate objectively that a meditator is actually in a meditative state. He claimed that even experienced meditators are only successful part of the time during a meditation practice. Therefore, it makes it difficult to establish which children in the study completed the guided meditation as intended, and which children did not. As mentioned by Caspi and Burleson (2005), it is the quality of meditation, not the quantity, that matter in terms of health outcomes. With this in mind, it is difficult to assess the quality of the guided meditation completed by the children in the study. Whilst the teachers reported that the children were at school and carried out the meditation on the Meditation Log Book (see Appendix T), the study did not validate the quality of the guided meditation completed. There is no real way of knowing if the guided meditation group actually completed the guided meditation as intended. This may explain why the guided meditation was not more effective than the reading.

The fact that reading was found to be similar to guided meditation supported the finding of Bahrke and Morgan (1978) where a quiet rest session was reported to be as effective as meditation in reducing state anxiety. The authors suggested that simply taking time out was as useful as meditation in reducing anxiety, possibly because there are common internal mechanisms operating during both of these activities. The authors postulated that perhaps taking time out from the daily schedule was in itself sufficient to produce therapeutic benefits. The reading in the current study may have offered the children the opportunity to take time out from the busy activities of the school day, and provided a period of rest and recuperation. It may be that children today just need a break from the hectic pace and demands of the school schedule, and allowing them time to be still and relax is in itself therapeutic.

The teachers supported this view by stating in the Teacher Post-Survey that the children in both the guided meditation and control groups enjoyed the quiet time

associated with the practices. Maybe it is having the opportunity for quiet time that is most important for children. One teacher also noted that some of the children in the guided meditation group would have preferred to do independent reading as a way to relax.

As explained by Rempel (2012), many children face a continual barrage of images and sounds in today's technologically focused world. The mind has little time to rest because of the information overload. Therefore, it is important to provide children with a way to deal with the stress and pressure of living in today's highly charged world (Rempel, 2012). Scheduling some form of relaxation into the school day may be the key. It appears that having a time for relaxation may be a valuable technique for improving children's health and well-being, whether it be meditating or reading a book of choice.

The use of reading as the control procedure in the study contributed to the lack of difference between the guided meditation and reading conditions. It did however, highlight the accidental discovery of reading as a way to improve the mental health outcomes for children with a clinical presentation. It appears that the enjoyable activity of reading may not only be useful in improving the educational outcomes for children, but may also be beneficial in enhancing children's behaviour, mental health and well-being.

Findings Related to Children with Clinical Presentations and Normal Mental Health Ratings

Given that the SDQ is used as a clinical tool, it was expected that the children in the current study would have scores in the normal range, as the sample of children was taken from a non-clinical population. The SDQ scores highlighted that there was a small group of children in each of the three schools with scores that were considered in the borderline or abnormal categories. This suggested that there

was a number of children in each school with a clinical presentation of emotional problems, conduct problems, hyperactivity-inattention, peer problems, and prosocial behaviour.

The results of the study indicated that the severity group hypothesis that the effects of guided meditation would be stronger for children with a clinical presentation than children with normal mental health ratings was partially supported for School 3 with conduct problems, hyperactivity-inattention, peer problems, and prosocial behaviour, but not for emotional problems and self-esteem. These findings were only reported in the school that had all guided meditation groups and no control group.

While the severity group hypothesis was not supported for Schools 1 and 2 when the borderline/abnormal group and low self-esteem group were separated into guided meditation and control groups, there were however effects reported when the guided meditation and control groups were combined. When both the guided meditation and reading groups were combined, the children from Schools 1 and 2 in the borderline/abnormal groups and low self-esteem groups demonstrated stronger effects on each of the outcome measures than the normal groups. This indicated that both the guided meditation and reading produced stronger effects for the children in Schools 1 and 2 with a clinical presentation. Overall, the guided meditation and reading were found to be more effective for the children with a clinical presentation than those in the normal groups.

The reason why the effects would be stronger for children with clinical problems is possibly related to the sympathetic response. As explained by Manocha (2000), psychological stress is linked to the activation of the sympathetic component of the autonomic nervous system which initiates the fight or flight response. When an individual is stressed, the body releases an array of hormones to provide quick energy to respond to the stressful situation (Borysenko, 1987). Two of these hormones include adrenalin and cortisol which are powerful inhibitors of the

immune system (Borysenko, 1987). When these stress hormones are constantly released, the body continues to be in a physical state of overdrive, which may result in a depleted immune system and a cycle of exacerbated stress (Napoli et al., 2005). Over time, prolonged stress then becomes problematic to the body.

The relaxation response on the other hand activates changes in the body that are opposite to the fight or flight response. Meditation and any form of relaxation serves to reduce the sympathetic activation by decreasing the release of catecholamines, such as adrenalin, and other stress hormones, such as cortisol (Manocha, 2000). During meditation these stress hormones are reduced which promotes increased parasympathetic activity which then slows the heart rate and improves the flow of blood to the internal organs and away from the periphery (Manocha, 2000). When the stress reactions are disengaged, relaxation in the body follows (Kristeller & Rikhye, 2008), and the physiology shifts into the relaxation response while there is a state of stillness in the mind (Borysenko, 1987).

It may be that taking time out from the demands of the school day and the stresses of life that provide the children with the opportunity to disengage from their stress reactions and the activation of the sympathetic response. Children with clinical presentations of emotional problems, conduct problems, hyperactivity-inattention, peer problems, prosocial behaviour and self-esteem may have stresses beyond those of children in a normal population, and a greater need to disengage from their stress reactions. As the baseline levels of clinical problems were higher for the children in the clinical group than those in the normal group, these children had a greater capacity to improve, and this may explain why the guided meditation and reading was more effective for the clinical group than the normal group. The guided meditation and reading may have provided these children with the opportunity to disengage from their stress reactions and allow needed relaxation in the body to prevail. The regular practise of guided meditation and reading then increased the conditioning of the relaxation response which subsequently

improved the children's feelings of well-being and positive affect, thereby producing therapeutic effects.

As previously mentioned, the findings of the study indicated that in School 3 the effects of guided meditation were stronger for children in the borderline/abnormal group than children in the normal group for conduct problems, hyperactivity-inattention, peer problems, and prosocial behaviour, but not for emotional problems and self-esteem. This suggested that guided meditation demonstrated improvements in the conduct problems, hyperactivity-inattention, peer problems, and prosocial behaviour for children in School 3 with a clinical presentation. Interestingly however, the effects of guided meditation were not found to be stronger for children with a clinical presentation of emotional problems and self-esteem. This indicated that guided meditation may only affect externalising behaviours, or it may be that guided meditation affects externalising behaviours in the short-term, but takes longer to affect internalising problems, like emotional symptoms and self-esteem. As the data for the study was collected before and shortly after the eight-week programs were administered, it may be easier to improve children's hyperactive behaviour and inattention in this time frame, as guided meditation aims to train attention and teach the meditator strategies to calm down the mind and body immediately. However, it may take longer to improve a child's overall sense of self, as self-esteem is considered a more stable and enduring construct as defined by Coopersmith (1981).

Self-esteem may change as a result of improvements in externalising behaviours. Children may initially improve their conduct problems, hyperactivity-inattention, peer problems, and prosocial behaviour, and as a result then feel better about themselves because they are coping better and experiencing less behavioural problems. This in turn may improve children's self-esteem, and potentially reduce their symptoms of anxiety and depression. It may be that during the practise of guided meditation, changes in external behaviours come first, and internalising changes in self-esteem and emotional problems occur later. As the effects

studied in this research were only short-term, longitudinal data would be necessary to explore the internalising symptoms further.

The severity group hypothesis was partially supported for School 3, but not for Schools 1 and 2. A possible explanation for this is because School 3 appeared to be different to Schools 1 and 2. Comparison of the schools across each of the outcome measures demonstrated that the children in Schools 1 and 2 were fairly similar in their SDQ and self-esteem scores, however these children were different to the children in School 3. Overall, School 3 revealed more children with clinical presentations.

School 3 reported the highest percentage of children in each of borderline/abnormal groups for each of the SDQ measures as shown in Table 7 (see Chapter 7). The results revealed that there were significantly more children from School 3 in the borderline/abnormal group for emotional problems and total difficulties than Schools 1 and 2. The findings also highlighted that the children in School 3 reported significantly higher scores on conduct problems and total difficulties at time 1 than the children in Schools 1 and 2. In addition, the children in School 3 recorded significantly higher scores on emotional problems and hyperactivity-inattention at time 1, and significantly higher scores on hyperactivity-inattention and total difficulties at time 2 than the children in School 2.

These findings were contrary to expectations as it was anticipated that the children in School 3 would have lower scores on the outcome measures as they were regular meditators prior to the commencement of the study. The demographic data obtained from the 2011 census compiled by the Australian Bureau of Statistics (2016) indicated that the suburb where School 3 was located showed some demographic differences to the suburbs of Schools 1 and 2 (see Table 1 in Chapter 6). The data revealed that the people from the School 3 suburb earned less than those living in the suburbs of Schools 1 and 2, had the lowest percentage of people born in Australia and only English spoken at home, and had

the highest percentage of households where two or more languages were spoken at home. These statistics indicated that there were more migrants and refugees living in the suburb of School 3 than in those of Schools 1 and 2, and that the School 3 families were from a lower socio-economic area. A study by van Oort, van der Ende, Wadsworth, Verhulst, and Achenbach (2011) reported that low socio-economic status was related to more emotional and behavioural problems in childhood, adolescence and young adulthood. This difference in socio-economic status between School 3 and Schools 1 and 2 may explain why there were more children with a clinical presentation in School 3 and why School 3 produced results that were different to Schools 1 and 2.

While School 3 partially supported the severity hypothesis, the results did not support the severity group hypothesis for emotional problems. The effects of the guided meditation were not found to be stronger for children in the borderline/abnormal group for emotional problems than children in the normal group. This was contrary to the findings of Joyce et al. (2010) who reported that mindfulness demonstrated improvements in emotional health, particularly for those students who scored in the borderline and abnormal categories as classified by the SDQ. A possible reason for the discrepancy between the two studies may be that the research conducted by Joyce et al. (2010) did not incorporate just mindfulness meditation in the study. Instead, the grade 5 and 6 children were involved in a mindfulness curriculum as well as mindfulness meditation. The curriculum included ten 45 minute lessons that focused on relaxation, body and breath awareness, exploration of the stress response, words and emotional links, sensual awareness, observation of thought, and meditation. Each of the sessions included group discussion, exploration of the themes and mindfulness practice. It may be that in addition to meditation, more in-depth exploration of thoughts and emotional responses is required in order to improve children's symptoms of anxiety and depression in the short-term.

Another possible explanation for the lack of findings for the severity group hypothesis for Schools 1 and 2, and only partial findings of School 3 may be methodological. This was possibly due to the low sample sizes in each of the clinical groups in the schools (see Table 7 in Chapter 7). In School 1, the number of children in the borderline/abnormal groups for each of the SDQ measures ranged from 10 to 21 children per group, and School 2 had sample sizes for the borderline/abnormal groups as small as 6 children and a maximum of 24 children. School 3 had the highest percentage of children in each of the borderline/abnormal groups for the SDQ measures, and the groups ranged from 11 to 30 children. Because the number of children in each of the high severity groups was so small, there were not sufficient numbers to maintain adequate statistical power, and therefore the severity hypothesis may have not been fully supported. The lack of statistical power did not allow the findings to detect an effect that may have been present. In the absence of effect sizes in previous research, it is unknown what effect size is required to obtain an effect for the guided meditation.

It was expected that the guided meditation would be beneficial for all children, however the findings indicated that the guided meditation and reading were only effective for children with a clinical presentation, and not for children with normal mental health ratings. A possible explanation was because the children in the normal group already had good mental health, and the outcome measures used in the study didn't accurately capture any changes occurring in this population. The study used the SDQ which is a clinical tool for assessing children's behavioural, emotional and relationship problems. As the SDQ predominantly measured the children's clinical problems, it may not have detected any changes with the normal group, as these children were asymptomatic.

If guided meditation and reading had the ability to improve the behaviour, mental health and well-being of children with a clinical presentation over an eight-week period, then it is highly likely that these practices were also beneficial for the

children with good mental health, however the measures used in the study failed to capture this improvement. The guided meditation and reading may have been beneficial for the children in the normal group in different domains, possibly in academic performance, attention, social development, self-awareness, emotional maturity and self-actualisation. Research has suggested that meditation has been associated with improved academic performance, increased restful alertness, and a greater capacity for self-control, self-reflection and flexibility in children (Rosaen & Benn, 2006). Meditation has also demonstrated greater attention and accuracy with adults (Valentine & Sweet, 1999). As the current study did not measure such outcomes for the sample, it is difficult to determine the impact of the guided meditation on the children with good mental health. Constructs other than problem behaviours were needed in the study in order to gain a richer understanding of how guided meditation affected children with good mental health. The findings of the study were therefore inconclusive for the children with normal mental health ratings.

Comparisons across the total sample comparing children with clinical presentations and those with normal mental health ratings also highlighted some significant gender differences between the SDQ severity groups. Gender differences were found across the sample with regard to emotional problems and prosocial behaviour. The results indicated that there were significantly more females with a clinical presentation of emotional problems than males. This finding was consistent with Yen et al. (2010) who reported that girls aged between 8 and 11 years reported higher levels of anxiety symptoms than boys. The findings of the study also revealed that there were more males in the borderline/abnormal group for prosocial behaviour than females. This finding was consistent with Nantel-Vivier et al. (2009) who reported that higher levels of prosocial behaviours tended to be observed in girls aged 10 to 14 years. Boys tend to enact lower levels of helping and caring behaviours than girls. The gender differences found in the study were consistent with prior research, suggesting that the SDQ measure used in the research was valid. As these differences in

emotional problems and prosocial behaviour are expected for males and females in the literature, this provides support for the validity of the SDQ measure.

Overall, the severity group hypothesis was partially supported in the study for the total sample in School 3, but only when the guided meditation and control groups were combined in Schools 1 and 2. The effects of guided meditation were found to be stronger for children in School 3 with a clinical presentation than children with normal mental health ratings with regard to conduct problems, hyperactivity-inattention, peer problems, and prosocial behaviour, but not for emotional problems and self-esteem. Both guided meditation and reading demonstrated stronger effects on each of the outcomes measures for the children in Schools 1 and 2 with a clinical presentation in comparison to the normal group. Explanations for these findings were discussed to be both theoretical and methodological.

The Cumulative Effect of Guided Meditation

The findings in the current study indicated that there was no support for the cumulative hypothesis that children who have practised regular meditation experience even greater reduction in emotional problems, conduct problems, hyperactivity-inattention, and peer problems, and greater improvements in prosocial behaviour and self-esteem than first time meditators. It was expected that the effects of guided meditation would be greater for the regular meditators in School 3 than the first time meditators in Schools 1 and 2 because of the cumulative effect of guided meditation. There are several explanations for the lack of support for the cumulative hypothesis.

Firstly, it may be that the guided meditation needs to be practised more frequently for the cumulative effect to be activated. In the research conducted by Sabel (1980), the cumulative effects of meditation were noted with 60 adult transcendental meditators. The duration of experience for the transcendental

meditators in this study ranged from a few days of meditation practice to 99 months of regular meditation with the mean reported at 39.1 months of meditation practise. Clearly, the meditation practised by the transcendental meditators was considerably different to the meditation experience of the children in the current study. In order for the cumulative effect to work, it may be that the meditation needs to be practised for months or even years, not just for eight weeks which was the timeframe of the study.

Secondly, the cumulative effect of guided meditation was not supported possibly because the children in School 3 were still operating at the early practice stage of meditation, despite being regular meditators prior to the commencement of the study. As previously described in this chapter, Kristeller and Rikhye (2008) argued that the effects of meditation differ depending on the stage of practice of the meditator, and outline four stages of practice that include: early practice; intermediate – early practice; intermediate – later practice; and late stage. It may be that the regular meditators in School 3 were still operating at the early practice stage of meditation, instead of functioning at the later stages of meditation practice, namely the intermediate – early practice, intermediate – later practice, or late stage.

It may be that the cumulative effects of guided meditation are only achieved if the children are at the intermediate or late stages of meditation practice, and have achieved more comprehensive meditation practise. The children in School 3 were regularly practising Christian Maranatha meditation prior to the study. It is possible however, that the administration of this meditation was not very effective, or the Christian Maranatha meditation was different to the guided meditation used in the study so that these children were actually not operating at a more advanced stage of meditation than the children from Schools 1 and 2 as was originally expected. It was anticipated that the regular meditators from School 3 commenced the study at a higher stage of meditation practice, possibly the intermediate – early practice level. As described by Kristeller and Rikhye (2008)

the intermediate – early practice stage is achieved after extended meditation practise, and the meditator is able to take more conscious control of attention, bring relaxation into other situations, and direct thoughts so that they no longer jump around as quickly. It may be that the children from School 3 were not more advanced meditators, and instead all the children in the sample were operating at the same beginner stage of meditation practice, thereby disproving the cumulative hypothesis.

Finally, the cumulative hypothesis may have been not supported because the cumulative effect may only work for attention and not for other outcome measures like emotional problems, conduct problems and hyperactivity-inattention etc. In the studies conducted by Sabel (1980) and Valentine and Sweet (1999) where the cumulative effects of meditation were noted with long-term meditators, attention and concentration were the only outcome measures tested. As meditation is effectively training in attention, it may be that the regular practise of meditation only produces cumulative effects on attention, and not on other behavioural/emotional outcome measures.

Teacher Effects

The teacher effects analysis demonstrated that there were no teacher effects found in each of the classes across the three schools. The difference scores revealed that there was no evidence to suggest that the teachers were having an effect on the children's scores. Having a teacher who provided positive feedback about the guided meditation or reading did not necessarily guarantee that the children in the class experienced improvements in their SDQ and self-esteem scores. Similarly, having a teacher who reported negative feedback about the program did not equate to children in the class reporting a decline in their SDQ and self-esteem scores. Overall, teachers did not appear to have an effect on changes in the scores for children in their class.

In the teacher effects analysis self-esteem demonstrated the greatest variability amongst all the outcome measures for each of the classes across the three schools. The SDQ variables showed difference scores between 2 and -1.39, however the self-esteem difference scores ranged from 9.14 to -3.05 (see Figures 17-19 in Chapter 7). It may be that the School Short Form of the Coopersmith Self-Esteem Inventory was not reliable over time with the children in this sample, and the SDQ measure was more reliable over time. As previously stated, it would be expected that guided meditation would have the least impact on self-esteem in comparison to the other SDQ measures like conduct problems and hyperactivity-inattention. As the purpose of guided meditation is to train attention and calm the mind and body, it is expected that it would be more effective in changing behavioural problems, rather than the more stable and enduring construct of self-esteem. It seems unusual then that there was more variability in self-esteem across the classes in comparison to the other SDQ outcomes measures. This may be due to the psychometric properties of the self-esteem measure in this sample, although, as discussed in Chapter 6, previous literature has revealed sound psychometric properties for the School Short Form of the Coopersmith Self-Esteem Inventory (Chapman & Mullis, 2002; Francis et al., 1998; Hills et al., 2011; Hills et al., 2007; Potard et al., 2015).

Children's Enjoyment of the Guided Meditation

Guided meditation did not produce profound effects in the study on its own possibly because some of the children did not enjoy the practice. As demonstrated by the reflections from the children in the guided meditation group, there were more children that did not enjoy the guided meditation (57.20%) than children who did (41.95%), and there were more children that did not wish to continue with the guided meditation after the study finished (60.17%) than those who did want to continue (38.56%).

The qualitative data obtained from the teachers using the Teacher Post-Survey also revealed that the children enjoyed the reading more than the guided meditation. Of the teachers in the guided meditation group, 25% reported that their class enjoyed the guided meditation, whereas 71% of teachers in the control group stated that their class enjoyed the reading.

The most popular theme that emerged from the qualitative data was that the children disliked the guided meditation (50%) because of the poor CD, difficulty with the guided meditation, or boredom as a result of the practice. Some teachers reported that the children thought the guided meditation was a waste of time and showed resistance to the practice, while others preferred to do an alternate activity. A teacher from School 3 also stated that as the children were already participating in regular meditation prior to the commencement of the study, the guided meditation was not new, and therefore didn't have a novelty factor.

One of the challenges of working with meditation is the negative preconceptions some children have about the practice. The children's level of enjoyment of the guided meditation may have affected their engagement in the practice, and ultimately affected the results of the study. For guided meditation to be effective, children need to be engaged in the process because guided meditation is a self-administered and internal process where the meditator controls the experience. If the meditator is not engaged, it is possible that the technique will not be administered as intended, and the therapeutic benefits not attained.

Whilst the guided meditation was disliked by some children, it was enjoyed by others. The findings from the Teacher Post-Survey highlighted that 25% of teachers stated that their class enjoyed the guided meditation, and 58.33% of teachers reported mixed responses indicating that some children in their class enjoyed the guided meditation while others did not. The themes that emerged from the qualitative data indicated that the guided meditation was liked because it was therapeutic (19.23%) and enjoyable (11.54%). The children enjoyed the

guided meditation because it was therapeutic, and provided an opportunity for time out, relaxation and quiet time. Some children loved the guided meditation, while others only enjoyed it if they valued the idea of meditation. Other children co-operated with the teacher which was interpreted as enjoyment. It would be beneficial to investigate the effects of the guided meditation for those children who enjoyed the practice, however the sample sizes in this study were too small for the analysis to be completed in this way.

Overall, the results of the study highlighted that there were mixed views about the guided meditation and how it was received by the children. Some children did not enjoy the guided meditation because of the poor CD, or because they were bored or had difficulty and showed resistance to the practice, or because they thought it didn't have a novelty factor and was a waste of time, or preferred to do an alternate activity. On the other hand, some children liked the practice because it was enjoyable and therapeutic, and provided an opportunity for time out, relaxation and quiet time.

The Qualitative Benefits of Guided Meditation

While few of the hypotheses were supported in the study, it was clear from the qualitative data obtained from the teachers that the guided meditation was beneficial for the children. The results highlighted that 83.33% of the teachers reported that the guided meditation was beneficial for the children in their class. The most popular theme that emerged from the qualitative data was that the guided meditation was beneficial because it was therapeutic (52.38%). The teachers stated that the children were focused, calm/quiet, and rested, and the practice provided a time for reflection. The other most common theme was that the guided meditation was beneficial because it taught the children various skills (19.05%), including the skills of relaxation, stillness, switching off and underlying messages.

The qualitative data also highlighted that the teachers noticed positive changes in the children after completing the guided meditation. The most popular theme that arose was that therapeutic changes were noticed in the children (56.25%). The changes that were observed by the teachers as a result of the guided meditation were that the children were calm, focused, settled, and rested, and that they listened. The teachers noted the benefits of using guided meditation with the children in their class, and 83.33% of the teachers reported that they would continue with the guided meditation after the completion of the trial.

The reflections from the children in the guided meditation group also highlighted that the guided meditation was beneficial. The findings outlined that there were more children who reported that that guided meditation was beneficial (55.08%) than those who did not (43.64%). Collectively, these findings highlighted that even though the guided meditation did not demonstrate significant differences in the outcome measures for the total sample, the guided meditation did have self-reported qualitative benefits for the children in the study.

Strengths of the Study

While the study only delivered one hypothesis that was partially supported, it did however demonstrate many strengths. As previously discussed in Chapter 3, the current meditation literature remains limited, particularly in the area of research with children (Campion & Rocco, 2009). In order to progress the field and advance our knowledge and understanding of meditation and its potential use with children, Hartmann and Vlieger (2012) advocated that larger trials with more rigorous study designs are necessary. Wisner et al. (2010) also emphasised that it is crucial to expand the research knowledge and encourage further empirical studies investigating the benefits of meditation as a school-based intervention.

One of the major strengths of this study was that it administered a randomised controlled trial with a considerable sample of 374 children from three primary schools across metropolitan Melbourne. This study contributed to the limited body of knowledge on the use of guided meditation with grade 5 and 6 children. By using a randomised controlled trial and randomly assigning grade 5 and 6 classes to receive either a guided meditation intervention or act as a control group, the study provided findings on the effectiveness of guided meditation as a school-based program for improving mental health outcomes in a non-clinical population of children aged 10 to 12 years. This randomised controlled trial with an active control group represents one of the few rigorous trials of school-based meditation.

While different types of meditation in the literature have found positive effects on mental health measures for children, there is currently no research exploring the use of guided meditation for improving the mental health outcomes of children. This study was therefore unique in that it examined the impact of guided meditation on primary school children's behaviour, mental health and well-being.

There is also a lack of literature comparing the effects of meditation on children with normal mental health ratings in comparison to children with clinical ratings. This study contributed to the sparse knowledge about the effectiveness of guided meditation with primary school children with a clinical presentation in comparison to those with normal mental health ratings.

As researchers have demonstrated the cumulative effects of meditation on attention, the current study investigated if children who have practised regular meditation experience an even greater reduction than first time meditators on a variety of outcome measures other than attention. The findings of this study provided information that the cumulative effects of guided meditation were not supported for emotional problems, conduct problems, hyperactivity-inattention, peer problems, prosocial behaviour and self-esteem. This suggested that the

cumulative effects of meditation extend only to attention, and not to other outcome measures.

One of the major outcomes of the study was the knowledge gained about the control procedure of reading. Unexpectedly, reading was found to be an effective way to improve the mental health outcomes for children with a clinical presentation. This finding provides valuable information for the education sector. This study also highlighted the importance of selecting a suitable control procedure in order to effectively determine the benefits of meditation with children.

Another strength of the study was the implementation of the trial, and the thorough methodology utilised. The intervention was delivered by classroom teachers in a standardised manner across the three schools through the use of a CD. As the program was administered by the regular classroom teachers and was introduced to the children as part of their standard curriculum, the external validity of the study was strengthened.

Fidelity was also ensured in a number of ways. Firstly, the teachers in each school were trained in the delivery of the guided meditation and reading by the researcher during the Teacher Information Session. Secondly, all teachers successfully completed Meditation Log Books and Reading Log Books which indicated attendance for each child for every day of the trial. And finally, the researcher also liaised with the teaching staff to ensure that the guided meditation and reading programs were successfully implemented in each school, and discussed any challenges that arose during the course of the study.

As outlined, the study demonstrated many strengths, particularly in its methodology and its contribution to the literature on guided meditation and the implementation of school-based guided meditation programs. This research however, also had many limitations that need to be considered when interpreting the findings.

Limitations of the Study

Although the study produced some interesting findings, this research project had several limitations. Firstly, the study relied on self-report as the main source of data. It is possible that behavioural observations of the children by both teachers and parents may have been useful in providing additional information for the assessment of children's mental health. This information may have been particularly helpful in evaluating the changes that occurred for the children with normal mental health ratings. As the outcome measures used in the study failed to capture any improvements that occurred for this group, behavioural observations by teachers and parents may have provided valuable insight into how guided meditation affects children with good mental health.

A second limitation of the study was that there was no long-term follow up with the sample. A follow up evaluation beyond the eight-week program would have been helpful in determining whether the effects of the guided meditation and reading were sustained for the children with a clinical presentation, or if these children regressed or reverted to pre-intervention behaviours, mental health and well-being. Long-term follow up would have also been useful in assessing whether significant effects were realised for some children at a later period. In addition, longitudinal data would have been beneficial to explore the effect of guided meditation on changes in self-esteem and emotional problems.

Thirdly, one of the problems of the study was that all the children were not asked if they completed meditation at home before the study commenced. Meditation is a fairly popular practice, and it is possible that some children may have completed meditation at home before the study began or during the trial. If these children were assigned to the control group then their practise of meditation at home may have confounded the results.

Another limitation of the study was the choice of reading as the control procedure. As indicated by the findings, the reading produced similar effects to the guided meditation. The choice of this particular activity for the control group was not optimal, as it is still uncertain what the individual effects of the guided meditation are for primary school aged children. This study highlighted the need to carefully consider the control group activities in future research.

One of the limitations of the study was the delivery of the guided meditation. The children were instructed in guided meditation through the use of an audio recording rather than the program being delivered by the classroom teachers or trained meditation instructors. Other programs (e.g. mindfulness-based intervention programs) are usually taught by qualified instructors as opposed to using audio recordings. It is possible that the style of delivery of the intervention may have impacted the effects of the guided meditation as an intervention.

Finally, one of the major problems in meditation research is that it is difficult to validate objectively that a meditator is actually in a meditative state (J. M. Davidson, 1976). Because of this, it is difficult to know if the children in the guided meditation group actually completed the guided meditation as it was intended, and what the quality of the meditative state achieved by each child was in the study. Also, there is no way to know if the teachers actually delivered the guided meditation as it was proposed. As the study did not formally assess the fidelity of the teachers in their adherence to the trial protocol, it is uncertain if the children received the programs as they were intended. The Meditation Log Books and Reading Log Books provided some indication that the study protocol was followed, although more formal assessment of treatment fidelity would have been beneficial as this would have offered data on the implementation of the program and provided possible explanations for the findings.

As outlined, the study had several limitations in its methodology. These provide clear directions for future research in order to progress the field and advance our

knowledge and understanding of guided meditation, and its potential use with children.

Directions for Future Research

Advancing the empirical research into meditation is vital as it is clear that the popularity of meditation is growing (Cardoso et al., 2004). Apart from more rigorous randomised controlled trials investigating the effectiveness of different meditation practices with children, there are a series of questions and wide range of issues that still need to be addressed in future studies.

Future research needs to focus on the use of appropriate control procedures for direct comparison with the meditation intervention. As discovered in this study, the control procedure of reading was too similar to the guided meditation and yielded similar effects. Careful consideration therefore needs to be exercised when designing future randomised controlled trials, and selecting the choice of activity for the control group. In addition, it would be useful to evaluate the contribution of the different components of meditation, for example, the guided meditation journey, sitting or lying down, closing the eyes, breathing exercises, muscle relaxation, and taking time out. This may provide valuable information that may be useful in ensuring that the control procedure does not elicit similar responses to each of these components.

As reading was found to be effective in improving the emotional problems, conduct problems, hyperactivity-inattention, peer problems, prosocial behaviour and self-esteem of children with a clinical presentation, further research into this area is warranted. As previously mentioned, much of the research into reading has documented that children with mental health problems have reading difficulties, but it appears that little research has been conducted on the use of reading as a strategy for improving the mental health outcomes of this population.

Future investigations into the effects of reading on children's mental health would provide valuable information for schools. If reading is able to consistently show improvements in children's behaviour, mental health and well-being, this would be a very cost-effective and simple way for schools to improve the mental health trajectories of the children in their care.

As an increasing number of primary and secondary schools are using meditation to support the cognitive, social and emotional development of their students (McLean, 2001), future researchers could investigate whether guided meditation or reading are equally beneficial for all children or whether some children would benefit from other approaches. School-based programs are often targeted to particular grade levels so all children in the grade level receive the intervention. As demonstrated by the findings of this study, some children benefitted from the intervention on the selected outcome measures, while others did not. Therefore, it is important to improve the empirical knowledge of school-based programs and ensure effectiveness for all the children involved.

In general, more information is needed about the use of meditation in the education sector. As explained by Rempel (2012), questions still remain regarding the conditions necessary to optimise the effects of meditation in the school setting. Research is necessary to investigate the most effective way to implement meditation into the existing school curriculum, and also the impact of integrating meditation into the home environment as well.

As highlighted by Britton et al. (2014), the ideal dosage of meditation for children is relatively unknown. The children in this study meditated daily for 10 minutes either 4 or 5 days a week over an 8-week period. More information is needed on the optimum number and duration of meditation sessions that are necessary to yield clinically significant improvements for children.

In this study, guided meditation was only delivered over an eight-week period and little is known about the enduring effects after this time. As outlined by Rubia (2009), very few studies have offered evidence for the long-term and sustainable effects of meditation. The field of meditation research would benefit from longitudinal studies that include long-term follow-up evaluations to assess whether the effects of meditation are sustained over time, and whether an eight-week guided meditation program is sufficient to produce significant effects. In particular, longitudinal data would be beneficial to explore the effect of guided meditation on changes in self-esteem and emotional problems. As advocated by Britton et al. (2014) such longitudinal data may help to determine if meditation is capable of offering long-term protection against mental health issues.

More research needs to be conducted on developing guided meditations that are engaging and enjoyable for children. As demonstrated by the reflections from the children in the guided meditation group, there were more children who did not enjoy the guided meditation than children who did, and there were more children that did not wish to continue with the guided meditation after the study finished than those who did want to continue. It is important that future work investigates the best ways to engage children in meditation. Future studies should develop guided meditations that are enjoyable for children and provide adequate variety to encourage continued use.

One of the greatest problems of research into meditation is that it is difficult to validate if the meditator is actually in a meditative state during the practice (J. M. Davidson, 1976). Validating the children's experiences of the guided meditation is important to ensure that the practices are being completed as intended. Future studies could evaluate the quality of the guided meditation achieved by the children by requesting that the children record qualitative information about their meditation experiences. This will also provide valuable information regarding the different stages of practice achieved by each meditator. Using both qualitative and quantitative studies is a good way to develop a deeper understanding of how

and why meditation works. As explained by Caspi and Burleson (2005), additional qualitative data provides information about what is happening behind the scenes of the study, enriches the discussion about the results, may affect causal inferences regarding the effectiveness of the meditation, and can be helpful in informing future research.

More large-scale and clinical research studies are necessary in order to fully understand the neurological, physiological and psychological mechanisms involved in meditation. It is important to understand the underlying processes associated with meditation. What is still relatively unknown are the effects of meditation, when and how they happen, how they are associated to what we currently know in psychology, and what we may learn from them to enrich the existing psychological theories (Sedlmeier et al., 2012).

Investigation into the clinical effectiveness of the different types of meditation is also warranted. There is a need for more evidence on the efficacy of the different meditation techniques and whether they yield similar or diverse outcomes. Researchers also need to clarify and clearly define the type of meditation used in future studies by providing a thorough methodology in the literature. This will allow for direct comparisons to be made across the meditation studies.

As outlined by Wisner et al. (2010), small sample sizes are often used in research investigating the use of meditation in schools. Using larger samples is necessary as this will allow for the generalisability of the findings to the broader population of children.

The three schools used in the study were from higher socio-economic backgrounds than the national average. It would be interesting to conduct meditation research in more disadvantaged schools and investigate if the effects of guided meditation and reading were similar in this population.

The findings of the study were inconclusive for the children in the normal group as the outcome measures failed to capture changes that may have been occurring for this group. It is therefore important that future studies widen the exploration of outcome measures and include constructs other than problem behaviours in order to gain a richer understanding of how meditation affects children with good mental health. Using behavioural observations by teachers and parents may also provide rich qualitative data that will help in developing a greater understanding of the effects of meditation. By expanding the constructs measured in future studies, it is possible that new instruments may need to be developed to accurately assess these outcomes.

Guided meditation was found to be effective for children with a clinical presentation. As there appears to be no other research exploring the use of guided meditation for improving the mental health outcomes of children, more research in this area is required. Future studies could also investigate the effects of guided meditation in a clinical setting and compare the findings to those from non-clinical samples.

Research into the clinical application of meditation is still very much in its infancy (Rubia, 2009), and there is little published research on the use of meditation with children. It is clear that a great deal of research is required in order to fully understand the phenomena of meditation, and its potential use with children.

Implications of the Findings

The findings from this study are particularly important to the education sector. They provide clear directions for teachers and schools as they have the potential to improve the mental health and well-being of the children in their care. It is important for teachers to recognise that children need time out from the demands of the busy school day. Teachers need to provide children with an opportunity to

rest and relax, and this needs to be factored into the school schedule. Allowing quiet time in the classroom with either guided meditation or reading would help the children to relax. This would assist the children to disengage from their stress reactions and the activation of the sympathetic response, and create a calmer learning environment to enhance educational outcomes. It appears that having a time for relaxation may be a valuable technique for improving children's health and well-being, as it provides a brief period for children to seek a calm and still place within themselves during a typically busy school day (Wisner et al., 2010).

The findings of the study demonstrated that guided meditation and reading were particularly beneficial for children with a clinical presentation. Schools are ideal places to conduct group prevention and intervention programs with children as they can be integrated into the existing school curriculum without the stigma. Implementing universal programs in schools results in less stigmatisation and labelling as the programs are conducted across the school instead of pulling certain children out of their regular classroom for targeted programs (Rempel, 2012). This can be less confronting for children with clinical problems. Using meditation in schools is also beneficial because it uses a strengths-based approach, instead of focusing on pathology. As many children and parents do not pursue clinical interventions for mental health problems, administering universal prevention programs in schools may be an ideal way to reach these individuals (Rempel, 2012).

As outlined by Rempel (2012), schools have an ability to influence children's social, emotional and behavioural development in ways that educators did not envisage in previous generations. Teachers can provide children with strategies that will enable them to cope and thrive in the increasingly challenging world (Rempel, 2012). Childhood stress is a precursor for stress as adults, as individuals bring the stress patterns learned in childhood into adulthood (Napoli et al., 2005). Therefore, it is important that schools teach children how to relax and provide an opportunity for them to disengage from their stress reactions and the

activation of the sympathetic response. Teaching children strategies to reduce stress is imperative, and a valuable skill that will be useful throughout their whole life.

Conclusion

The purpose of this study was to contribute to the limited body of knowledge on the use of guided meditation in primary schools with grade 5 and 6 children using a randomised controlled trial. By randomly assigning grade 5 and 6 classes to receive either a guided meditation intervention or act as a control group, this study aimed to investigate the effectiveness of guided meditation as a school-based program for improving mental health outcomes in a non-clinical population of children aged 10 to 12 years. While various types of meditation have found positive effects on children's mental health, there currently appears to be no research exploring the use of guided meditation for improving the mental health outcomes of children. The study was therefore designed to examine the impact of guided meditation on primary school children's behaviour, mental health and well-being using measures of emotional problems, conduct problems, hyperactivity-inattention, peer problems, prosocial behaviour, and self-esteem. The study also intended to explore whether guided meditation was more effective for primary school children with a clinical presentation than children with normal mental health ratings. A final aim was to examine the cumulative effects of meditation by investigating if children who have practised regular meditation experience an even greater reduction in emotional problems, conduct problems, hyperactivity-inattention, and peer problems, and greater improvements in prosocial behaviour and self-esteem than first time meditators.

By addressing these aims, several contributions have been made to the meditation literature, particularly with regard to the use of guided meditation with primary school children. Evidence was presented that indicated that guided

meditation was effective in improving the behaviour, mental health and well-being of children with a clinical presentation. These findings were consistent with previous research by Barnes et al. (2003), Harrison et al. (2004), Joyce et al. (2010), and Steiner et al. (2013). Providing an opportunity for these children to meditate in the classroom was beneficial, and demonstrated significant reductions in emotional problems, conduct problems, hyperactivity-inattention, and peer problems, and significant improvements in prosocial behaviour and self-esteem. The study particularly highlighted the importance of children taking time out in the classroom to relax.

The findings suggested that guided meditation yielded effects that were similar to other relaxing activities, like reading. Unexpectedly, regular reading was also found to be an effective way to improve the mental health outcomes for children with a clinical presentation. This accidental discovery highlighted the potential of reading, and the need for children to take time out from the rigorous demands of the school day. Both guided meditation and reading involve aspects of relaxation, and it appears that this is the key ingredient to improving the mental health of children with a clinical presentation.

The quantitative findings presented were inconclusive for the group of children with normal mental health ratings because of the constructs used in the trial. If guided meditation and reading had the ability to improve the behaviour, mental health and well-being of children with a clinical presentation over an eight-week period, then it is highly likely that the practices were also beneficial for the children with good mental health, however the measures used in the study failed to capture this improvement. Further research is needed to understand the benefits gained for this population. In general, there is considerable research required into meditation in order to progress the field, and advance our knowledge and understanding of its use with children.

While the quantitative findings highlighted that the guided meditation did not demonstrate significant differences in the outcome measures for all the children in the study, according to the teachers, the guided meditation demonstrated qualitative benefits for the children. The qualitative data suggested that the guided meditation was beneficial for the children, and the teachers noticed positive changes in the children after completing the practice. The teachers reported that the guided meditation was therapeutic for the children as they were focused, calm, quiet, settled, rested, and listened, and the practice provided them with a time for reflection. The guided meditation was also reported to be beneficial because it taught the children the skills of relaxation, stillness, and switching off.

This study established that it is worthwhile conducting both guided meditation and reading in primary schools, particularly with children with clinical problems. The physical and emotional risks of using these practices with children are minimal, however the benefits to behaviour, mental health and well-being are broad. Implementing guided meditation and reading in schools is both cost-effective and easily administered by teachers in the classroom. This preliminary evaluation highlighted that both guided meditation and reading conducted in primary schools have the potential to be effective mental health promotion initiatives to create better mental health outcomes for children.

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Appendices

Appendix A: Survey

Student Survey

School ID ☐☐☐☐☐☐

Student ID ☐☐☐

Background Information

Please tick (✓) the appropriate statements:

Gender

☐ Male (1) ☐ Female (2)

Age

☐ 10 years
☐ 11 years
☐ 12 years
☐ Other _____

Grade Level

☐ Grade 5
☐ Grade 6

Language

Do you mainly speak English at home? ☐ Yes (1) ☐ No (2)

If No, what language(s) do you mainly speak? _____

For each item, please mark the box with a tick (✓) for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain. Please give your answers on the basis of how things have been for you over the last six months.

SDQ		Not True (0)	Somewhat True (1)	Certainly True (2)
1.	I try to be nice to other people. I care about their feelings.	☐	☐	☐
2.	I am restless, I cannot stay still for long.	☐	☐	☐
3.	I get a lot of headaches, stomach-aches or sickness.	☐	☐	☐
4.	I usually share with others, for example CD's, games, food.	☐	☐	☐

1

SDQ		Not True (0)	Somewhat True (1)	Certainly True (2)
5.	I get very angry and often lose my temper.	☐	☐	☐
6.	I would rather be alone than with people of my age.	☐	☐	☐
7.	I usually do as I am told.	☐	☐	☐
8.	I worry a lot.	☐	☐	☐
9.	I am helpful if someone is hurt, upset or feeling ill.	☐	☐	☐
10.	I am constantly fidgeting or squirming.	☐	☐	☐
11.	I have one good friend or more.	☐	☐	☐
12.	I fight a lot. I can make other people do what I want.	☐	☐	☐
13.	I am often unhappy, depressed or tearful.	☐	☐	☐
14.	Other people my age generally like me.	☐	☐	☐
15.	I am easily distracted, I find it difficult to concentrate.	☐	☐	☐
16.	I am nervous in new situations. I easily lose confidence.	☐	☐	☐
17.	I am kind to younger children.	☐	☐	☐
18.	I am often accused of lying or cheating.	☐	☐	☐
19.	Other children or young people pick on me or bully me.	☐	☐	☐
20.	I often volunteer to help others (parents, teachers, children).	☐	☐	☐
21.	I think before I do things.	☐	☐	☐
22.	I take things that are not mine from home, school or elsewhere.	☐	☐	☐
23.	I get along better with adults than with people my own age.	☐	☐	☐
24.	I have many fears, I am easily scared.	☐	☐	☐
25.	I finish the work I'm doing. My attention is good.	☐	☐	☐

Please mark each statement in the following way:

If the statement describes how you usually feel, put a tick (✓) in the box "Like Me".

If the statement does not describe how you usually feel, put a tick (✓) in the box "Unlike Me".

There are no right or wrong answers.

SE		Like Me (1)	Unlike Me (2)
1.	I often wish I were someone else.	☐	☐
2.	I find it hard to talk in front of the class.	☐	☐
3.	There are lots of things about myself I'd change if I could.	☐	☐
4.	I can make up my mind without too much trouble.	☐	☐
5.	I get easily upset at home.	☐	☐
6.	I am a lot of fun to be with.	☐	☐
7.	It takes me a long time to get used to anything new.	☐	☐
8.	I am popular with kids my own age.	☐	☐
9.	My parents usually consider my feelings.	☐	☐
10.	I give in very easily.	☐	☐
11.	My parents expect too much of me.	☐	☐
12.	It is pretty tough to be me.	☐	☐
13.	Things are all mixed up in my life.	☐	☐
14.	Kids usually follow my ideas.	☐	☐
15.	I have a low opinion of myself.	☐	☐
16.	There are many times when I would like to leave home.	☐	☐
17.	I often feel upset in school.	☐	☐
18.	I am not as nice looking as most people.	☐	☐
19.	If I have something to say I usually say it.	☐	☐

SE	Like Me (1)	Unlike Me (2)
20. My parents understand me.	☐	☐
21. Most people are better liked than me.	☐	☐
22. I usually feel as if my parents are pushing me.	☐	☐
23. I often get discouraged in school.	☐	☐
24. Things usually do not bother me.	☐	☐
25. I can't be depended on.	☐	☐

Thank-you very much

for your help.

Appendix B: Time 2 Meditation Survey

Student Survey

School ID ☐☐☐☐☐☐

Student ID ☐☐☐

Background Information

Please tick (✓) the appropriate statements:

Gender

☐ Male (1) ☐ Female (2)

Age

☐ 10 years
☐ 11 years
☐ 12 years
☐ Other _____

Grade Level

☐ Grade 5
☐ Grade 6

Language

Do you mainly speak English at home? ☐ Yes (1) ☐ No (2)

If No, what language(s) do you mainly speak? _____

For each item, please mark the box with a tick (✓) for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain. Please give your answers on the basis of how things have been for you over the last six months.

SDQ		Not True (0)	Somewhat True (1)	Certainly True (2)
1.	I try to be nice to other people. I care about their feelings.	☐	☐	☐
2.	I am restless, I cannot stay still for long.	☐	☐	☐
3.	I get a lot of headaches, stomach-aches or sickness.	☐	☐	☐
4.	I usually share with others, for example CD's, games, food.	☐	☐	☐

1

SDQ		Not True (0)	Somewhat True (1)	Certainly True (2)
5.	I get very angry and often lose my temper.	☐	☐	☐
6.	I would rather be alone than with people of my age.	☐	☐	☐
7.	I usually do as I am told.	☐	☐	☐
8.	I worry a lot.	☐	☐	☐
9.	I am helpful if someone is hurt, upset or feeling ill.	☐	☐	☐
10.	I am constantly fidgeting or squirming.	☐	☐	☐
11.	I have one good friend or more.	☐	☐	☐
12.	I fight a lot. I can make other people do what I want.	☐	☐	☐
13.	I am often unhappy, depressed or tearful.	☐	☐	☐
14.	Other people my age generally like me.	☐	☐	☐
15.	I am easily distracted, I find it difficult to concentrate.	☐	☐	☐
16.	I am nervous in new situations. I easily lose confidence.	☐	☐	☐
17.	I am kind to younger children.	☐	☐	☐
18.	I am often accused of lying or cheating.	☐	☐	☐
19.	Other children or young people pick on me or bully me.	☐	☐	☐
20.	I often volunteer to help others (parents, teachers, children).	☐	☐	☐
21.	I think before I do things.	☐	☐	☐
22.	I take things that are not mine from home, school or elsewhere.	☐	☐	☐
23.	I get along better with adults than with people my own age.	☐	☐	☐
24.	I have many fears, I am easily scared.	☐	☐	☐
25.	I finish the work I'm doing. My attention is good.	☐	☐	☐

Please mark each statement in the following way:

If the statement describes how you usually feel, put a tick (✓) in the box "Like Me".

If the statement does not describe how you usually feel, put a tick (✓) in the box "Unlike Me".

There are no right or wrong answers.

SE		Like Me (1)	Unlike Me (2)
1.	I often wish I were someone else.	☐	☐
2.	I find it hard to talk in front of the class.	☐	☐
3.	There are lots of things about myself I'd change if I could.	☐	☐
4.	I can make up my mind without too much trouble.	☐	☐
5.	I get easily upset at home.	☐	☐
6.	I am a lot of fun to be with.	☐	☐
7.	It takes me a long time to get used to anything new.	☐	☐
8.	I am popular with kids my own age.	☐	☐
9.	My parents usually consider my feelings.	☐	☐
10.	I give in very easily.	☐	☐
11.	My parents expect too much of me.	☐	☐
12.	It is pretty tough to be me.	☐	☐
13.	Things are all mixed up in my life.	☐	☐
14.	Kids usually follow my ideas.	☐	☐
15.	I have a low opinion of myself.	☐	☐
16.	There are many times when I would like to leave home.	☐	☐
17.	I often feel upset in school.	☐	☐
18.	I am not as nice looking as most people.	☐	☐
19.	If I have something to say I usually say it.	☐	☐

SE		Like Me (1)	Unlike Me (2)
20.	My parents understand me.	☐	☐
21.	Most people are better liked than me.	☐	☐
22.	I usually feel as if my parents are pushing me.	☐	☐
23.	I often get discouraged in school.	☐	☐
24.	Things usually do not bother me.	☐	☐
25.	I can't be depended on.	☐	☐

M1. Did you enjoy the meditation?

☐ Yes (1) ☐ No (2)

Why/Why not?

_____

_____

_____

M2. How did you feel after the meditation?

_____

_____

_____

M3. Do you think the meditation was beneficial?

☐ Yes (1) ☐ No (2)

Why/Why not?

_____

_____

_____

M4. Would you like to continue with the meditation?

☐ Yes (1) ☐ No (2)

Why/Why not?

_____

_____

_____

M5. Please write any other comments you would like to make about the meditation in the space below.

_____

_____

_____

_____

_____

_____

_____

_____

Thank-you very much

for your help.

5

Appendix C: Scoring for the SDQ Scales

SDQ Scales	Not True	Somewhat True	Certainly True
Emotional problems scale:			
I get a lot of headaches, stomach-aches or sickness.	0	1	2
I worry a lot.	0	1	2
I am often unhappy, depressed or tearful.	0	1	2
I am nervous in new situations. I easily lose confidence.	0	1	2
I have many fears, I am easily scared.	0	1	2
Conduct problems scale:			
I get very angry and often lose my temper.	0	1	2
I usually do as I am told.	2	1	0
I fight a lot. I can make other people do what I want.	0	1	2
I am often accused of lying or cheating.	0	1	2
I take things that are not mine from home, school or elsewhere.	0	1	2
Hyperactivity-inattention scale:			
I am restless, I cannot stay still for long.	0	1	2
I am constantly fidgeting or squirming.	0	1	2
I am easily distracted, I find it difficult to concentrate.	0	1	2
I think before I do things.	2	1	0
I finish the work I'm doing. My attention is good.	2	1	0
Peer problems scale:			
I would rather be alone than with people of my age.	0	1	2
I have one good friend or more.	2	1	0
Other people my age generally like me.	2	1	0
Other children or young people pick on me or bully me.	0	1	2
I get along better with adults than with people my own age.	0	1	2
Prosocial behaviour scale:			
I try to be nice to other people. I care about their feelings.	0	1	2
I usually share with others, for example CD's, games, food.	0	1	2
I am helpful if someone is hurt, upset or feeling ill.	0	1	2
I am kind to younger children.	0	1	2
I often volunteer to help others (parents, teachers, children).	0	1	2

Total difficulties score is generated by summing all the scale scores except the prosocial behaviour scale.

Appendix D: SDQ Scoring for the Three-Band Categorisation into Normal, Borderline and Abnormal

SDQ Scales	Normal	Borderline	Abnormal
Total difficulties score	0 - 15	16 - 19	20 - 40
Emotional problems score	0 - 5	6	7 - 10
Conduct problems score	0 - 3	4	5 - 10
Hyperactivity-inattention score	0 - 5	6	7 - 10
Peer problems score	0 - 3	4 - 5	6 - 10
Prosocial behaviour score	6 - 10	5	0 - 4

Appendix E: Scoring for the School Short-Form of the Coopersmith Self-Esteem Inventory

Items	Like Me	Unlike Me
I often wish I were someone else.	0	1
I find it hard to talk in front of the class.	0	1
There are lots of things about myself I'd change if I could.	0	1
I can make up my mind without too much trouble.	1	0
I get easily upset at home.	0	1
I am a lot of fun to be with.	1	0
It takes me a long time to get used to anything new.	0	1
I am popular with kids my own age.	1	0
My parents usually consider my feelings.	1	0
I give in very easily.	0	1
My parents expect too much of me.	0	1
It is pretty tough to be me.	0	1
Things are all mixed up in my life.	0	1
Kids usually follow my ideas.	1	0
I have a low opinion of myself.	0	1
There are many times when I would like to leave home.	0	1
I often feel upset in school.	0	1
I am not as nice looking as most people.	0	1
If I have something to say I usually say it.	1	0
My parents understand me.	1	0
Most people are better liked than me.	0	1
I usually feel as if my parents are pushing me.	0	1
I often get discouraged in school.	0	1
Things usually do not bother me.	1	0
I can't be depended on.	0	1

Total score is generated by summing all the item scores and multiplying by four.

Appendix F: Teacher Survey

Teacher Survey

School: _____

Teacher: _____

Grade: _____

Email: _____

1. How often have you used meditation with your class this year?

☐ Never

☐ Rarely e.g. a few times this year

☐ Sometimes e.g. once a week

☐ Frequently e.g. a few times a week

☐ Every day

2. If you use meditation, what type of meditation do you utilise in your classroom?

_____

_____

_____

_____

Thank-you very much for your help.

Appendix G: Teacher Post-Survey

Teacher Survey

School: _____

Teacher: _____

Grade: _____

Could you please take a few minutes and reflect on your experiences of the meditation program with your class last term.

1. **Did your class enjoy the meditation/reading? Why/Why not?**

_____

_____

_____

2. **Did you notice any changes in your students after completing the meditation/reading?**
   If so, what?

_____

_____

_____

_____

3. **Do you think the meditation/reading was beneficial for your students? Why/Why not?**

_____

_____

_____

_____

4. **Will you continue with the meditation/reading? Why/Why not?**

_____

_____

_____

5. **Please write any other comments you would like to make about the meditation/reading program.**

_____

_____

_____

Appendix H: Ethics Approval from the Swinburne University Human Research Ethics Committee

Tania Slaviero <tslaviero@gmail.com>

SUHREC Project 2012/182 Ethics Clearance

Sheila Hamilton-Brown <shamiltonbrown@swin.edu.au> Wed, Oct 31, 2012 at 3:57 PM
To: Christine Critchley <ccritchley@swin.edu.au>
Cc: RES Ethics <resethics@swin.edu.au>, FLSS Research <lssresearch@swin.edu.au>

To: Dr Christine Critchley; FLSS

Bcc: Ms Tania Slaviero

Dear Christine and Tania

SUHREC Project 2012/182 The impact of guided meditation on children's health and well-being.

Dr Christine Critchley; Ms Tania Slaviero; FLSS

Approved Duration: 31/10/2012 To 30/09/2013 [Adjusted]

I refer to the ethical review of the above project protocol by Swinburne's Human Research Ethics Committee (SUHREC). The responses to the review, as emailed on 24 October 2012 (superseding a previous email) with attachments including revised consent instruments/survey and approval from Ms Amy Hamilton to use her meditations for the project, were put to a SUHREC delegate for approval.

I am pleased to advise that, as submitted to date, the project may proceed in line with standard on-going ethics clearance conditions here outlined.

- All human research activity undertaken under Swinburne auspices must conform to Swinburne and external regulatory standards, including the *National Statement on Ethical Conduct in Human Research* 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 note that confirmation of approval from the Department of Education and Early Childhood and the Catholic Education Office should be forwarded to the Research Ethics Office.

Please contact the Research Ethics Office if you have any queries about on-going ethics clearance, citing the SUHREC project number. Copies of clearance emails should be retained as part of project record-keeping.

Best wishes for the project.

Yours sincerely

Sheila

for Keith Wilkins

Secretary, SUHREC

****

Sheila Hamilton-Brown

Administrative Officer (Research Ethics & Biosafety)
(Tues, Wed & Fri)
Swinburne Research (H68)
Swinburne University of Technology
PO Box 218
HAWTHORN VIC 3122
Tel: 03 9214 5935
Fax: 03 9214 5267

Appendix I: Permission from the Department of Education and Early Childhood Development

Department of Education and Early Childhood Development

Strategy and Review Group

2 Treasury Place
East Melbourne, Victoria 3002
Telephone: +61 3 9637 2000
DX 210083
GPO Box 4367
Melbourne, Victoria 3001

2012_001772

Ms Tania Slaviero
11 Hawker Street
IVANHOE 3079

Dear Ms Slaviero

Thank you for your application of 26 September 2012 in which you request permission to conduct research in Victorian government schools and/or early childhood settings titled *The impact of guided meditation on children's health and wellbeing.*

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. The research is conducted in accordance with the final documentation you provided to the Department of Education and Early Childhood Development.
2. Separate approval for the research needs to be sought from school principals and/or centre directors. This is to be supported by the DEECD approved documentation and, if applicable, the letter of approval from a relevant and formally constituted Human Research Ethics Committee.
3. The project is commenced within 12 months of this approval letter and any extensions or variations to your study, including those requested by an ethics committee must be submitted to the Department of Education and Early Childhood Development for its consideration before you proceed.
4. As a matter of courtesy, you advise the relevant Regional Director of the schools or governing body of the early childhood settings that you intend to approach. An outline of your research and a copy of this letter should be provided to the Regional Director or governing body.
5. You acknowledge the support of the Department of Education and Early Childhood Development in any publications arising from the research.
6. The Research Agreement conditions, which include the reporting requirements at the conclusion of your study, are upheld. A reminder will be sent for reports not submitted by the study's indicative completion date.
7. If DEECD has commissioned you to undertake this research, the responsible Branch/Division will need to approve any material you provide for publication on the Department's Research Register.

Victoria

I wish you well with your research study. Should you have further enquiries on this matter, please contact Youla Michaels, Research Officer, Research and Evaluation Branch, by telephone on (03) 9637 2707 or by email at michaels.youla.y@edumail.vic.gov.au.

Yours sincerely

Elvira

Dr Elvira Vacirca
Acting Director
Research and Evaluation Branch

29/10/2012

enc

Appendix J: Permission from the Catholic Education Office

Catholic Education Office
Archdiocese of Melbourne

In reply please quote:

GE12/0009
1849

23 October 2012

Ms T Slaviero
11 Hawker Street
IVANHOE
VIC. 3079

Dear Ms Slaviero

I am writing with regard to your research application received on 25 September 2012 concerning your forthcoming project titled *The impact of guided meditation on children's health and well-being*. You have asked approval to approach Catholic primary schools in the Archdiocese of Melbourne, as you wish to involve students in your research.

I am pleased to advise that your research proposal is approved in principle subject to you ensuring that parents are able to see the survey before they give informed consent and subject to the nine standard conditions outlined below.

1. The decision as to whether or not research can proceed in a school rests with the school's principal, so you will need to obtain approval directly from the principal of each school that you wish to involve.

2. You should provide each principal with an outline of your research proposal and indicate what will be asked of the school. A copy of this letter of approval, and a copy of notification of approval from the university's Ethics Committee, should also be provided.

3. A *Working with Children* (WWC) check – or registration with the Victorian Institute of Teaching (VIT) – is necessary for all researchers visiting schools. Appropriate documentation must be shown to the principal before starting the research in each school.

4. No student is to participate in the research study unless s/he is willing to do so and informed consent is given in writing by a parent/guardian.

5. You should provide the names of schools which agree to participate in the research project to the Knowledge Management Unit of this Office.

6. Any substantial modifications to the research proposal, or additional research involving use of the data collected, will require a further research approval submission to this Office.

1 of 2

James Goold House, 228 Victoria Parade, East Melbourne VIC 3002. Tel: (+61 3) 9267 0228. Fax: (+61 3) 9418 3825
Correspondence: PO Box 3, East Melbourne VIC 8002. Email: director@cemelb.catholic.edu.au www.cemelb.catholic.edu.au
ABN 55 949 824

7. Data relating to individuals or schools are to remain confidential.

8. Since participating schools have an interest in research findings you should consider ways in which the results of the study could be made available for the benefit of the school communities.

9. At the conclusion of the study, a copy or summary of the research findings should be forwarded to this Office. It would be appreciated if you could submit your report in an ***electronic format*** using the email address provided below.

I wish you well with your research study. If you have any queries concerning this matter, please contact Ms Lisa Guerin of this Office.

The email address is <km@ceomelb.catholic.edu.au>.

Yours sincerely

Carl Stevens
MANAGER, POLICY & RESEARCH

Appendix K: Permission from Amy Hamilton, author of "Indigo Dreaming: Meditations for Children"

Text received from Amy Hamilton on 8th October 2012:

Yes that's fine to use products, would love to see a copy of your findings/research when finished.
Thanks
Amy Hamilton
indigo kidz

Appendix L: Principal Letter for Government Schools

Principal's Name
Principal
Primary School
Postal Address
Suburb, State, Post Code

18th March 2013

Dear .....,

I am a Primary School Teacher who is currently completing a doctoral thesis in Clinical Psychology at Swinburne University of Technology, under the supervision of Dr. Christine Critchley. My work as a teacher has highlighted the importance of improving the health and well-being of children in primary schools. It is for this reason that I am undertaking a thesis investigating the impact of meditation on children's health and well-being.

The overall objective of this research project is to examine the impact of meditation on children's behaviour (including conduct problems and pro-social behaviour), emotional symptoms, hyperactivity/inattention, peer relations, and self-esteem. This research project also aims to contribute to the limited body of knowledge on the effectiveness of meditation in primary schools.

Research has demonstrated that meditation with children has many benefits, including improved academic performance, increased attention and better self-control. Children who regularly engage in meditation also show greater self-esteem, improved social abilities and relationships, and reduced anxiety and hyperactivity.

Government schools in metropolitan Melbourne have been selected to participate in this research project. Your school is among those selected to participate and you are invited to take part in this unique research opportunity. If you choose to participate in this project, the Grade 5 and 6 classes at your school in 2013 will be randomly assigned to receive a meditation program or act as a control group.

Teachers in the meditation group will be issued a meditation CD and asked to listen to a 10 minute meditation each day with their class over two months. This research study uses meditations that are very simple for both students to learn and for teachers to implement in a classroom setting with little training. Each meditation on the CD consists of breathing exercises, muscle relaxation and guided imagery.

Alternatively, teachers in the control group will be asked to allow their class to read to themselves for 10 minutes every day over two months. Reading was selected as a control procedure because aspects of reading are similar to that of meditation, namely the body position, the quiet environment, and the opportunity to carry out the activity as a group.

In order to evaluate the project, all Grade 5 and 6 students will be invited to participate in a student survey. Written consent from parents/guardians will be essential and teachers will be asked to distribute and collect consent forms from the students. Students will be issued with a thank-you gift (e.g. stress ball) upon returning a signed consent form, irrespective of whether their parent/guardian has given permission for them to participate in the survey. The children will be informed that they can withdraw from the study at any time. All children's responses on the survey will be kept strictly confidential and findings will be reported as group data to ensure that no child is identifiable.

Student surveys will be completed prior to the commencement of the meditation/reading program and after the completion of the meditation/reading program. The student survey will take only 30 minutes of class time to complete and will be administered by the researcher. Only those students with parental permission to participate will be allowed to take part in the survey. Please find attached a copy of the letter and consent form to be distributed to parents/guardians, and also a copy of the student survey.

This research project will aim to ensure that disruption to Grade 5 and 6 teachers and students will be minimal. All that is required of teachers is to attend a brief 20 minute information session with the researcher at your school, distribute and collect parent letters and consent forms, provide an opportunity for the researcher to conduct two 30 minute student surveys during class time and conduct either the 10 minute meditation or reading activity daily for two months during Term 3, 2013.

This doctoral research has been approved by the Human Research Ethics Committee at Swinburne University, Department of Education and Early Childhood Development and Catholic Education Office. At the completion of the thesis, all participating schools will receive a report summarising the findings of the research project.

By helping with this study, your school will be making a valuable contribution to our understanding of how teachers can improve the health and well-being of children in primary schools in a simple and cost-effective way. To participate in this research project, please sign the attached agreement and return to Tania Slaviero, PO Box 309, Ivanhoe, VIC 3079 or email to: tslaviero@swin.edu.au.

I will contact you shortly to answer any questions you may have about the research project. Alternatively, feel free to contact me to discuss the project further via email: tslaviero@swin.edu.au or by phone: 0432 448 699. You may also contact my supervisor, Dr. Christine Critchley via email: ccritchley@swin.edu.au or by phone: (03) 9214 5480.

Thank you for taking the time to review this proposal and I look forward to speaking with you soon.

Yours sincerely,

Tania Slaviero
Dip T, BEd, BA (Hons)
Student Researcher (Doctorate in Clinical Psychology)
Mobile: 0432 448 699
Email: tslaviero@swin.edu.au

Appendix M: Principal Letter for Catholic Schools

Principal's Name
Principal
Primary School
Postal Address
Suburb, State, Post Code

18th March 2013

Dear .....,

I am a Catholic Primary School Teacher who is currently completing a doctoral thesis in Clinical Psychology at Swinburne University of Technology, under the supervision of Dr. Christine Critchley. My work as a teacher has highlighted the importance of improving the health and well-being of children in primary schools. It is for this reason that I am undertaking a thesis investigating the impact of meditation on children's health and well-being.

The overall objective of this research project is to examine the impact of meditation on children's behaviour (including conduct problems and pro-social behaviour), emotional symptoms, hyperactivity/inattention, peer relations, and self-esteem. This research project also aims to contribute to the limited body of knowledge on the effectiveness of meditation in primary schools.

Research has demonstrated that meditation with children has many benefits, including improved academic performance, increased attention and better self-control. Children who regularly engage in meditation also show greater self-esteem, improved social abilities and relationships, and reduced anxiety and hyperactivity.

Catholic and Government schools in metropolitan Melbourne have been selected to participate in this research project. Your school is among those selected to participate and you are invited to take part in this unique research opportunity. If you choose to participate in this project, the Grade 5 and 6 classes at your school in 2013 will be randomly assigned to receive a meditation program or act as a control group.

Teachers in the meditation group will be issued a meditation CD and asked to listen to a 10 minute meditation each day with their class over two months. This research study uses meditations that are very simple for both students to learn and for teachers to implement in a classroom setting with little training. Each meditation on the CD consists of breathing exercises, muscle relaxation and guided imagery.

Alternatively, teachers in the control group will be asked to allow their class to read to themselves for 10 minutes every day over two months. Reading was selected as a control procedure because aspects of reading are similar to that of meditation, namely the body position, the quiet environment, and the opportunity to carry out the activity as a group.

In order to evaluate the project, all Grade 5 and 6 students will be invited to participate in a student survey. Written consent from parents/guardians will be essential and teachers will be asked to distribute and collect consent forms from the students. Students will be issued with a thank-you gift (e.g. stress ball) upon returning a signed consent form, irrespective of whether their parent/guardian has given permission for them to participate in the survey. The children will be informed that they can withdraw from the study at any time. All children's responses on the survey will be kept strictly confidential and findings will be reported as group data to ensure that no child is identifiable.

Student surveys will be completed prior to the commencement of the meditation/reading program and after the completion of the meditation/reading program. The student survey will take only 30 minutes of class time to complete and will be administered by the researcher. Only those students with parental permission to participate will be allowed to take part in the survey. Please find attached a copy of the letter and consent form to be distributed to parents/guardians, and also a copy of the student survey.

This research project will aim to ensure that disruption to Grade 5 and 6 teachers and students will be minimal. All that is required of teachers is to attend a brief 20 minute information session with the researcher at your school, distribute and collect parent letters and consent forms, provide an opportunity for the researcher to conduct two 30 minute student surveys during class time and conduct either the 10 minute meditation or reading activity daily for two months during Term 3, 2013.

This doctoral research has been approved by the Human Research Ethics Committee at Swinburne University, Department of Education and Early Childhood Development and Catholic Education Office. At the completion of the thesis, all participating schools will receive a report summarising the findings of the research project.

By helping with this study, your school will be making a valuable contribution to our understanding of how teachers can improve the health and well-being of children in primary schools in a simple and cost-effective way. To participate in this research project, please sign the attached agreement and return to Tania Slaviero, PO Box 309, Ivanhoe, VIC 3079 or email to: tslaviero@swin.edu.au.

I will contact you shortly to answer any questions you may have about the research project. Alternatively, feel free to contact me to discuss the project further via email: tslaviero@swin.edu.au or by phone: 0432 448 699. You may also contact my supervisor, Dr. Christine Critchley via email: ccritchley@swin.edu.au or by phone: (03) 9214 5480.

Thank you for taking the time to review this proposal and I look forward to speaking with you soon.

Yours sincerely,

Tania Slaviero
Dip T, BEd, BA (Hons)
Student Researcher (Doctorate in Clinical Psychology)
Mobile: 0432 448 699
Email: tslaviero@swin.edu.au

Appendix N: School Agreement

School Agreement

I agree to participate in the research project investigating the impact of meditation on children's health and well-being which will involve the following components:

- Arranging a brief 20 minute information session with the Grade 5 and 6 teachers in Term 1, 2013, so the researcher can discuss the study, survey administration, and random allocation of classes to the meditation group or control group.
- Grade 5 and 6 teachers will distribute letters and parent consent forms to parents/guardians of Grade 5 and 6 children and collect signed consent forms in Term 1, 2013.
- Teachers in the meditation group will play a 10 minute meditation CD each day with their Grade 5 or 6 class for two months in Term 2, 2013.
- Teachers in the control group will allow their Grade 5 or 6 class to read to themselves for 10 minutes every day for two months in Term 2, 2013.
- Co-ordinating a suitable time for the researcher to administer a 30 minute student survey before the meditation/reading program commences and after the completion of the meditation/reading program in Term 2, 2013.

I have read and agree to the items outlined above. I understand the requirements of our school's involvement and we are willing to participate in this research project.

_____
(School Name)

_____ _____
(Print name) **(Position)**

_____ _____
(Signature) **(Date)**

Please ensure that you keep a copy of this agreement on file.

Appendix O: Parent Information Sheet

Research Project: The impact of meditation on children's health and well-being.

1st May 2013

Dear Parent/Guardian,

I am a Primary School Teacher who is currently completing a doctoral thesis in Clinical Psychology at Swinburne University of Technology. My work as a teacher has highlighted the importance of improving the health and well-being of children in primary schools. It is for this reason that I am undertaking a thesis titled "The impact of meditation on children's health and well-being".

The Department of Education and Early Childhood Development, Catholic Education Office and the Principal at your child's school have granted approval for this research project to be conducted at your child's school. As part of the project, the Grade 5 and 6 classes will be randomly assigned to receive a meditation program or act as a control group in Term 3, 2013. Students in the meditation group will listen to a 10 minute meditation CD each day with their class over two months. Each meditation consists of breathing exercises, muscle relaxation and guided imagery. Alternatively, students in the control group will read for 10 minutes every day over two months.

In order to evaluate the project, all Grade 5 and 6 students are invited to participate in a student survey, however parental permission is required for students to take part in the survey. To participate, your child will complete two surveys describing their health and well-being at the end of Term 2 and Term 3. All questions are self-report (e.g. "I think before I do things" or "I often feel upset in school"), and no physical tests or examinations are involved. The survey will ask children questions about their school, friends, relationships, feelings and behaviour. Should you wish to review the student survey, a copy is available at the school office.

The survey will be conducted in your child's classroom and will require approximately 30 minutes. All instructions will be read aloud to the children and assistance will be given to those children who require it. The children will be informed that they are under no obligation to participate in the project and may withdraw at any time without explanation. Anonymity is guaranteed as the children will not be required to write their name on the survey. The consent forms will be stored securely and kept separate to the surveys so that no child will be individually identified in the research report. The surveys are strictly confidential and only the Senior Supervisor, Dr. Christine Critchley and student researcher will have access to the data. The results of this project may possibly be published in an academic journal, however only group data will be presented, and no child or school will be individually identified.

Please sign the attached consent form indicating if you would like your child to participate in the surveys and return to your child's class teacher by Friday 24th May. By helping with this study, you will be making a valuable contribution to our understanding of how teachers can improve the health and well-being of Grade 5 and 6 children in primary schools. At the completion of the research project, all participating schools will receive a report summarising the findings of the research.

For further information or any queries you may have about the research project, please contact Tania Slaviero via email: tslaviero@swin.edu.au or by phone: 0432 448 699. Alternatively, questions regarding the project can be directed to the Senior Supervisor, Dr. Christine Critchley at Swinburne University via email: ccritchley@swin.edu.au or by phone: (03) 9214 5480.

Thank you for taking the time to review this proposal.

Yours sincerely,

Tania Slaviero
Dip T, BEd, BA (Hons)

This project has been approved by the Swinburne's Human Research Ethics Committee (SUHREC) in line with the National Statement on Ethical Conduct in Human Research. If you have any concerns or complaints about the conduct of this project, you can contact:

Research Ethics Officer
Swinburne Research (H68)
Swinburne University of Technology
PO Box 218
HAWTHORN VIC 3122

Phone: (03) 9214 5218 or (03) 9214 5218
Email: resethics@swin.edu.au

Appendix P: Parent Consent Form

Research Project: The impact of meditation on children's health and well-being.

Please complete the following form on behalf of your child and return to your child's class teacher by ..... date .....

I ..... have read the Parent Information Sheet to my child.
(Name of parent/guardian)

Any questions asked by my child have been answered to his/her satisfaction.

I understand that my son/daughter's participation is voluntary and he/she is free to withdraw from the study at any time without explanation.

I agree that the research data collected for this project may be published on the condition that only group data will be presented, and my child cannot be individually identified.

I **DO** ☐ **DO NOT** ☐ consent to my son/daughter taking part in this survey.
(please tick one)

Child's Name .....

Relationship to Child .....

Signature .....

Date .....

Appendix Q: Teacher Information Sheet for the Guided Meditation Group

Teacher Information Sheet - Meditation Group

This research project is part of a doctoral thesis in Clinical Psychology at Swinburne University of Technology investigating the impact of meditation on children's health and well-being. By helping with this study, you will be making a valuable contribution to our understanding of how teachers can improve the health and well-being of children in primary schools in a simple and cost-effective way.

Aims of the project

- To examine the impact of meditation on children's behaviour (including conduct problems and pro-social behaviour), emotional symptoms, hyperactivity/inattention, peer relations, and self-esteem.
- To contribute to the limited body of knowledge on the effectiveness of meditation in primary schools.

Procedure

All Grade 5 and 6 classes at your school have been assigned to receive a meditation program. This research study uses guided meditations that are very simple for both students to learn and for teachers to implement in a classroom setting with little training. Each meditation on the CD consists of muscle relaxation, breathing exercises, and guided imagery.

In order to complete the meditation program, please complete the following steps:

1. Introduce your class to "meditation" by explaining that meditation is a way of relaxing your body and calming your mind. Explain to your class that they will listen to a meditation CD for 10 minutes every day. It is important that the children understand that meditation is an opportunity to keep their full attention within themselves. They do not need to be concerned with what others are doing. If others move or cough, they need to pay no attention to it. Do the same for outside noises. Explain to the children that their job is to keep their mind focused within themselves. If their mind should go off track and they find themselves watching or thinking something else, tell the children to gently let go of what they are seeing, hearing or thinking, and bring their attention back to the meditation.
2. Conduct your daily 10 minute meditation session at a time that is convenient to you.
3. Start by dimming the lights in the classroom and placing the sign outside your door that reads "Please come back in 10 minutes. We are meditating." It is important that your 10 minute meditation is uninterrupted. Ask the children to sit in a comfortable position on a chair or cross-legged, or lie on the floor with their eyes closed.
4. Before every meditation session begins be sure to remind your class that if they find themselves getting distracted during the meditation and their mind wanders off, just acknowledge the thoughts you are having without making any judgment about them, and then shift your attention back to the meditation.

4. Before every meditation session begins be sure to remind your class that if they find themselves getting distracted during the meditation and their mind wanders off, just acknowledge the thoughts you are having without making any judgment about them, and then shift your attention back to the meditation.

5. Listen to the correct 10 minute meditation with your class, as indicated on your Meditation Log Book e.g. Track 1 for Monday, Track 2 for Tuesday etc.

6. At the end of the meditation session, provide an opportunity for the children to discuss their experiences of the meditation and address any questions or concerns they may have. It is important to emphasize that there are no right or wrong experiences with meditation, and it is very much a personal experience.

7. After each meditation, complete your Meditation Log Book outlining the date and time meditation was conducted, and if any children were absent. Feel free to add comments about your experiences conducting meditation with your class e.g. how the children responded to the meditation, how the children felt after the meditation, any questions that were asked, or any barriers you experienced. Please note that comments are optional.

8. It is important that all classes do daily meditation, however if you are unable to conduct meditation on a particular day, please indicate that on your Meditation Log Book.

9. Conduct daily meditation for 8 weeks, as indicated on your Meditation Log Book.

Evaluating the project

All Grade 5 and 6 students will be invited to participate in a student survey in order to evaluate the effectiveness of meditation in the classroom. Student surveys will be completed prior to the commencement of the meditation/reading programs, and after the completion of the meditation/ reading programs. Survey administration will involve the following steps:

1. Distribute parent letters and consent forms to your students to be given to their parents/guardians on Thursday 9th May.

2. Collect consent forms from your students and record on the Survey Class List whether or not students have returned their consent forms and whether or not they have parental permission to complete the survey.

3. Give each student a stress ball as a thank-you gift for returning his/her signed consent form. Students are given a gift irrespective of whether or not their parent/guardian has given permission for them to participate in the survey. Do not inform your class about the thank-you gift prior to distributing the consent forms. When the first student returns a signed consent form, give him/her a thank-you gift and explain that all children will receive a gift for returning their signed consent form, even if their parent/guardian indicates that they will not complete the survey.

4. Return the Survey Class List and signed consent forms to ..... by Friday 24th May.

5. The researcher will administer the 30 minute survey in your class in Term 2 and at the end of Term 3 at times that are convenient to you. Only those students with parental permission to participate will be allowed to take part in the survey. The researcher will issue students with an ID number that will be written on the survey so that data from each student can be tracked over two different time points.

6. The researcher will return to your class to complete the survey with any child that was absent on the day of survey administration.

At the completion of the thesis, all participating schools will receive a report summarising the findings of this research project.

Thank you very much for your support and cooperation.

For further information or any queries you may have during the research project, please contact:

Tania Slaviero
Dip T, BEd, BA (Hons)
Student Researcher
Mobile: 0432 448 699
Email: tslaviero@swin.edu.au

Dr. Christine Critchley
PhD Psychology
Senior Supervisor
Phone: (03) 9214 5480
Email: ccritchley@swin.edu.au

Appendix R: Teacher Information Sheet for the Control Group

Teacher Information Sheet - Control Group

Name of teacher: _____

Class: _____

This research project is part of a doctoral thesis in Clinical Psychology at Swinburne University of Technology investigating the impact of meditation on children's health and well-being. By helping with this study, you will be making a valuable contribution to our understanding of how teachers can improve the health and well-being of children in primary schools in a simple and cost-effective way.

Aims of the project

- To examine the impact of meditation on children's behaviour (including conduct problems and pro-social behaviour), emotional symptoms, hyperactivity/inattention, peer relations, and self-esteem.
- To contribute to the limited body of knowledge on the effectiveness of meditation in primary schools.

Procedure

All Grade 5 and 6 classes at your school have been randomly assigned to receive a meditation program or act as a control group. Randomisation was conducted by a computer generated program. **Your class has been randomly assigned to the control group.** Reading was selected as a control procedure because aspects of reading are similar to that of meditation, namely the body position, the quiet environment, and the opportunity to carry out the activity as a group.

As part of the control group, please complete the following steps:

1. Explain to your class that they will have an opportunity to read quietly to themselves for 10 minutes every day.
2. Conduct your daily 10 minute reading session at a time that is convenient to you.
3. Start by placing the sign outside your door that reads "Please come back in 10 minutes. We are reading." Ask the children to sit in a comfortable position on a chair or cross-legged, or lie on the floor.
4. After each reading session, complete your Reading Log Book outlining the date, time and duration of reading completed. Please note that comments are optional.
5. It is important that all classes do daily reading, however if you are unable to conduct reading on a particular day or at the scheduled time, please indicate that on your Reading Log Book.
6. Conduct daily reading for 8 weeks, as indicated on your Reading Log Book.

Evaluating the project

All Grade 5 and 6 students will be invited to participate in a student survey in order to evaluate the effectiveness of meditation in the classroom. Student surveys will be completed prior to the commencement of the meditation/reading programs, and after the completion of the meditation/reading programs. Survey administration will involve the following steps:

1. Distribute parent letters and consent forms to your students to be given to their parents/guardians on Thursday 9th May.

2. Collect consent forms from your students and record on the Survey Class List whether or not students have returned their consent forms and whether or not they have parental permission to complete the survey.

3. Give each student a stress ball as a thank-you gift for returning his/her signed consent form. Students are given a gift irrespective of whether or not their parent/guardian has given permission for them to participate in the survey. Do not inform your class about the thank-you gift prior to distributing the consent forms. When the first student returns a signed consent form, give him/her a thank-you gift and explain that all children will receive a gift for returning their signed consent form, even if their parent/guardian indicates that they will not complete the survey.

4. Return the Survey Class List and signed consent forms to ..... by Friday 24th May.

5. The researcher will administer the 30 minute survey in your class in Term 2 and at the end of Term 3 at times that are convenient to you. Only those students with parental permission to participate will be allowed to take part in the survey. The researcher will issue students with an ID number that will be written on the survey so that data from each student can be tracked over two different time points.

6. The researcher will return to your class to complete the survey with any child that was absent on the day of survey administration.

At the completion of the thesis, all participating schools will receive a report summarising the findings of this research project.

Thank you very much for your support and cooperation.

For further information or any queries you may have during the research project, please contact:

Tania Slaviero
Dip T, BEd, BA (Hons)
Student Researcher
Mobile: 0432 448 699
Email: tslaviero@swin.edu.au

Dr. Christine Critchley
PhD Psychology
Senior Supervisor
Phone: (03) 9214 5480
Email: ccritchley@swin.edu.au

Appendix S: Teacher Information Sheet for School 3

Teacher Information Sheet - Meditation Group

This research project is part of a doctoral thesis in Clinical Psychology at Swinburne University of Technology investigating the impact of meditation on children's health and well-being. By helping with this study, you will be making a valuable contribution to our understanding of how teachers can improve the health and well-being of children in primary schools in a simple and cost-effective way.

Aims of the project

- To examine the impact of meditation on children's behaviour (including conduct problems and pro-social behaviour), emotional symptoms, hyperactivity/inattention, peer relations, and self-esteem.
- To contribute to the limited body of knowledge on the effectiveness of meditation in primary schools.

Procedure

All Grade 5 and 6 classes at your school have been assigned to receive a meditation program. This research study uses guided meditations that are very simple for both students to learn and for teachers to implement in a classroom setting with little training. Each meditation on the CD consists of muscle relaxation, breathing exercises, and guided imagery.

In order to complete the meditation program, please complete the following steps:

1. Introduce your class to "meditation" by explaining that meditation is a way of relaxing your body and calming your mind. Explain to your class that they will listen to a meditation CD for 10 minutes every day. It is important that the children understand that meditation is an opportunity to keep their full attention within themselves. They do not need to be concerned with what others are doing. If others move or cough, they need to pay no attention to it. Do the same for outside noises. Explain to the children that their job is to keep their mind focused within themselves. If their mind should go off track and they find themselves watching or thinking something else, tell the children to gently let go of what they are seeing, hearing or thinking, and bring their attention back to the meditation.
2. Conduct your daily 10 minute meditation session at a time that is convenient to you.
3. Start by dimming the lights in the classroom and placing the sign outside your door that reads "Please come back in 10 minutes. We are meditating." It is important that your 10 minute meditation is uninterrupted. Ask the children to sit in a comfortable position on a chair or cross-legged, or lie on the floor with their eyes closed.
4. Before every meditation session begins be sure to remind your class that if they find themselves getting distracted during the meditation and their mind wanders off, just acknowledge the thoughts you are having without making any judgment about them, and then shift your attention back to the meditation.

5. Listen to the correct 10 minute meditation with your class, as indicated on your Meditation Log Book e.g. Track 1 for Monday, Track 2 for Tuesday etc.

6. At the end of the meditation session, provide an opportunity for the children to discuss their experiences of the meditation and address any questions or concerns they may have. It is important to emphasize that there are no right or wrong experiences with meditation, and it is very much a personal experience.

7. After each meditation, complete your Meditation Log Book outlining the date and time meditation was conducted, and if any children were absent. Feel free to add comments about your experiences conducting meditation with your class e.g. how the children responded to the meditation, how the children felt after the meditation, any questions that were asked, or any barriers you experienced. Please note that comments are optional.

8. It is important that all classes do daily meditation, however if you are unable to conduct meditation on a particular day, please indicate that on your Meditation Log Book.

9. Conduct daily meditation for 8 weeks, as indicated on your Meditation Log Book.

Evaluating the project

All Grade 5 and 6 students will be invited to participate in a student survey in order to evaluate the effectiveness of meditation in the classroom. Student surveys will be completed prior to the commencement of the meditation program, and after the completion of the meditation program. Survey administration will involve the following steps:

1. Distribute parent letters and consent forms to your students to be given to their parents/guardians on Tuesday 7th May.

2. Collect consent forms from your students and record on the Survey Class List whether or not students have returned their consent forms and whether or not they have parental permission to complete the survey.

3. Give each student a stress ball as a thank-you gift for returning his/her signed consent form. Students are given a gift irrespective of whether or not their parent/guardian has given permission for them to participate in the survey. Do not inform your class about the thank-you gift prior to distributing the consent forms. When the first student returns a signed consent form, give him/her a thank-you gift and explain that all children will receive a gift for returning their signed consent form, even if their parent/guardian indicates that they will not complete the survey.

4. Return the Survey Class List and signed consent forms to Trish Stewart by Friday 24th May.

5. The researcher will administer the 30 minute survey in your class on Monday 3rd June 12:15pm – 3:15pm, and at the end of Term 3. Only those students with parental permission to participate will be allowed to take part in the survey. The researcher will issue students with an ID number that will be written on the survey so that data from each student can be tracked over two different time points.

6. The researcher will return to your class to complete the survey with any child that was absent on the day of survey administration.

At the completion of the thesis, all participating schools will receive a report summarising the findings of this research project.

Thank you very much for your support and cooperation.

For further information or any queries you may have during the research project, please contact:

Tania Slaviero
Dip T, BEd, BA (Hons)
Student Researcher
Mobile: 0432 448 699
Email: tslaviero@swin.edu.au

Dr. Christine Critchley
PhD Psychology
Senior Supervisor
Phone: (03) 9214 5480
Email: ccritchley@swin.edu.au

Appendix T: Meditation Log Book

Meditation Log Book

Name of Teacher: _____ **Class:** _____

	Date	Track	Completed (Please tick)	Time Started e.g.10:20am	Names of Children Absent	Comments (Optional)
Week 1	Monday	Track 1	☐ Yes ☐ No			
	Tuesday	Track 2	☐ Yes ☐ No			
	Wednesday	Track 3	☐ Yes ☐ No			
	Thursday	Track 4	☐ Yes ☐ No			
	Friday	Track 5	☐ Yes ☐ No			
Week 2	Monday	Track 1	☐ Yes ☐ No			
	Tuesday	Track 2	☐ Yes ☐ No			
	Wednesday	Track 3	☐ Yes ☐ No			
	Thursday	Track 4	☐ Yes ☐ No			
	Friday	Track 5	☐ Yes ☐ No			

	Date	Track	Completed (Please tick)	Time Started e.g.10:20am	Names of Children Absent	Comments (Optional)
Week 3	Monday	Track 1	☐ Yes ☐ No			
	Tuesday	Track 2	☐ Yes ☐ No			
	Wednesday	Track 3	☐ Yes ☐ No			
	Thursday	Track 4	☐ Yes ☐ No			
	Friday	Track 5	☐ Yes ☐ No			
Week 4	Monday	Track 1	☐ Yes ☐ No			
	Tuesday	Track 2	☐ Yes ☐ No			
	Wednesday	Track 3	☐ Yes ☐ No			
	Thursday	Track 4	☐ Yes ☐ No			
	Friday	Track 5	☐ Yes ☐ No			

	Date	Track	Completed (Please tick)	Time Started e.g.10:20am	Names of Children Absent	Comments (Optional)
Week 5	Monday	Track 1	☐ Yes ☐ No			
	Tuesday	Track 2	☐ Yes ☐ No			
	Wednesday	Track 3	☐ Yes ☐ No			
	Thursday	Track 4	☐ Yes ☐ No			
	Friday	Track 5	☐ Yes ☐ No			
Week 6	Monday	Track 1	☐ Yes ☐ No			
	Tuesday	Track 2	☐ Yes ☐ No			
	Wednesday	Track 3	☐ Yes ☐ No			
	Thursday	Track 4	☐ Yes ☐ No			
	Friday	Track 5	☐ Yes ☐ No			

	Date	Track	Completed (Please tick)	Time Started e.g.10:20am	Names of Children Absent	Comments (Optional)
Week 7	Monday	Track 1	☐ Yes ☐ No			
	Tuesday	Track 2	☐ Yes ☐ No			
	Wednesday	Track 3	☐ Yes ☐ No			
	Thursday	Track 4	☐ Yes ☐ No			
	Friday	Track 5	☐ Yes ☐ No			
Week 8	Monday	Track 1	☐ Yes ☐ No			
	Tuesday	Track 2	☐ Yes ☐ No			
	Wednesday	Track 3	☐ Yes ☐ No			
	Thursday	Track 4	☐ Yes ☐ No			
	Friday	Track 5	☐ Yes ☐ No			

Thank you very much for all your help with this research project.

Appendix U: Reading Log Book

Reading Log Book

Name of Teacher: _____ **Class:** _____

	Date	Completed (Please tick)	Time Started e.g.10:20am	Names of Children Absent	Comments (Optional)
Week 1	Monday	☐ Yes ☐ No			
	Tuesday	☐ Yes ☐ No			
	Wednesday	☐ Yes ☐ No			
	Thursday	☐ Yes ☐ No			
	Friday	☐ Yes ☐ No			
Week 2	Monday	☐ Yes ☐ No			
	Tuesday	☐ Yes ☐ No			
	Wednesday	☐ Yes ☐ No			
	Thursday	☐ Yes ☐ No			
	Friday	☐ Yes ☐ No			

	Date	Completed (Please tick)	Time Started e.g.10:20am	Names of Children Absent	Comments (Optional)
Week 3	Monday	☐ Yes ☐ No			
	Tuesday	☐ Yes ☐ No			
	Wednesday	☐ Yes ☐ No			
	Thursday	☐ Yes ☐ No			
	Friday	☐ Yes ☐ No			
Week 4	Monday	☐ Yes ☐ No			
	Tuesday	☐ Yes ☐ No			
	Wednesday	☐ Yes ☐ No			
	Thursday	☐ Yes ☐ No			
	Friday	☐ Yes ☐ No			

	Date	Completed (Please tick)	Time Started e.g.10:20am	Names of Children Absent	Comments (Optional)
Week 5	Monday	☐ Yes ☐ No			
	Tuesday	☐ Yes ☐ No			
	Wednesday	☐ Yes ☐ No			
	Thursday	☐ Yes ☐ No			
	Friday	☐ Yes ☐ No			
Week 6	Monday	☐ Yes ☐ No			
	Tuesday	☐ Yes ☐ No			
	Wednesday	☐ Yes ☐ No			
	Thursday	☐ Yes ☐ No			
	Friday	☐ Yes ☐ No			

	Date	Completed (Please tick)	Time Started e.g.10:20am	Names of Children Absent	Comments (Optional)
Week 7	Monday	☐ Yes ☐ No			
	Tuesday	☐ Yes ☐ No			
	Wednesday	☐ Yes ☐ No			
	Thursday	☐ Yes ☐ No			
	Friday	☐ Yes ☐ No			
Week 8	Monday	☐ Yes ☐ No			
	Tuesday	☐ Yes ☐ No			
	Wednesday	☐ Yes ☐ No			
	Thursday	☐ Yes ☐ No			
	Friday	☐ Yes ☐ No			

Thank you very much for all your help with this research project.

Appendix V: Meditation Sign

Please come back in
10 minutes.
We are meditating.

Appendix W: Reading Sign

Appendix X: Survey Class List

SCHOOL: ____

TEACHER: ________________________ **GRADE:** ____________

- Please circle 'Yes' or 'No' to indicate whether or not students have returned their consent form and whether or not they have parental permission to complete the survey.
- After a 2-week period has elapsed, please return this class list to ______________________.

ID	STUDENT'S NAME		Returned signed consent form?	Permission to complete survey?
			Yes No	Yes No
			Yes No	Yes No
			Yes No	Yes No
			Yes No	Yes No
			Yes No	Yes No
			Yes No	Yes No
			Yes No	Yes No
			Yes No	Yes No
			Yes No	Yes No
			Yes No	Yes No
			Yes No	Yes No
			Yes No	Yes No
			Yes No	Yes No
			Yes No	Yes No
			Yes No	Yes No
			Yes No	Yes No
			Yes No	Yes No
			Yes No	Yes No
			Yes No	Yes No
			Yes No	Yes No
			Yes No	Yes No
			Yes No	Yes No
			Yes No	Yes No
			Yes No	Yes No
			Yes No	Yes No
			Yes No	Yes No

Appendix Y: Guided Meditation CD

Appendix Z: Survey Administration Instructions

Survey Administration Instructions

- My name is Tania Slaviero and I'm completing my doctorate in psychology at Swinburne University. I'm doing research that looks at how meditation affects children's health and well-being.
- Today you will fill out a survey and will need to place a tick (✓) next to the statements that best describe you.
- Let's begin by reading through the Student Information Letter.
- Now, let's turn to the yellow survey. On the front page there is a small white piece of paper with the name of your school, your grade, your name and a number on it. Please check that this information is correct and if it is, please tear off the white piece of paper and leave it on your desk and I will collect it in a minute. If any information on this white page is incorrect, please write what it should be and leave it on your desk.
- It is important that you don't write your name on your survey.
- Please ask questions at any time if you are unsure of something or tell me if I am going too fast.

- *Explain the procedure on the whiteboard*
  e.g. Background Information
  ☐ *Male* ☐ *Female*
- *Explain the scoring system and ask the children to answer this statement:*
  e.g. I play sport outside school:
  ☐ *Not True* ☐ *Somewhat True* ☐ *Certainly True*
- *Explain the self-esteem scoring system and ask the children to answer this statement:*
  e.g: I smile a lot.
  ☐ *Like Me* ☐ *Unlike Me*

- Your parent/guardian and your School Principal have given permission for you to participate in this project, however if you don't want to participate you don't have to. Is there anyone who doesn't want to do the survey?

- Okay, let's get started.
- Please listen to the instructions carefully and only tick ONE answer each time. I would like you all to wait until I read the question before you fill it out.

- *Read each item out loud and wait for the children to fill in a response. Give assistance where required.*

- If any concerns arise about this project, you may talk to your class teacher or your Grade 5/6 Co-ordinator.....name?.....
- Before you hand in your survey, please check that you have answered every question.
- *Thank the children for their participation.*
- *Contact the Year 5/6 Co-ordinator immediately if there is a problem and a child becomes distressed. Ensure that all the children's concerns are addressed.*

Appendix AA: Student Information Sheet

Research Project: **Meditation and Children's Health and Well-being**

Researchers: **Tania Slaviero and Dr. Christine Critchley**

We are conducting a study examining how meditation can affect children's health and well-being.

If you agree to participate, you will be asked to complete two surveys which take about 30 minutes to complete. You will complete one survey in Term 2 and one at the end of Term 3, and all surveys will be completed in class time. The survey will ask you questions about your school, friends, relationships, feelings and behaviour and you will need to tick the statements that best describe you. There are NO right or wrong answers and this is NOT a test. If you are unsure of the answer to a question, just try and give the best answer you can.

Your parent/guardian and your School Principal have given permission for you to participate in this project, however it is your choice if you want to complete the survey. You may withdraw at any time without explanation. We hope you will participate in this survey. You will be making an important contribution to our understanding of how we can improve the health and well-being of Grade 5 and 6 children in primary schools.

All your answers on the survey will be strictly confidential. This means your answers will stay secret and no one other than the researchers will see them. Your teachers and parents won't see what you write, so it is important that you answer the questions honestly.

Each survey will be numbered and you will not be asked to write your name on the front of the survey. The cover sheet with your name will be torn off the survey and locked away in a filing cabinet. The only people who can access this information will be the researchers.

The results of this project will be written in a thesis and may be published in an academic journal, however only group results will be presented, and you will not be individually identified.

If you have any questions about this study or the survey, please contact your teacher, your Grade 5/6 Co-ordinator or the Researchers:

Tania Slaviero
Student Researcher
Email: tslaviero@swin.edu.au
Phone: 0432 448 699

Dr. Christine Critchley
Senior Supervisor
Email: ccritchley@swin.edu.au
Phone: (03) 9214 5480

In the course of filling out the survey there is a small chance that you may feel upset or worried about things, in which case there are lots of ways to get help. It often helps a lot if you can talk to others. If you need to talk to someone, you can talk to your parent, class teacher, Grade 5/6 Co-ordinator or Kids Helpline (Phone: 1800 55 1800 or visit www.kidshelp.com.au).

Thank you for your time and cooperation.

Tania Slaviero
Student Researcher

Dr. Christine Critchley
Senior Supervisor

This project has been approved by the Swinburne's Human Research Ethics Committee (SUHREC). If you have any concerns or complaints about this project, you or your parent can contact:

Research Ethics Officer
Swinburne Research (H68)
Swinburne University of Technology
PO Box 218
HAWTHORN VIC 3122

Phone: (03) 9214 5218 or (03) 9214 5218 or Email: resethics@swin.edu.au

Appendix AB: Absent Survey Instructions

Dear Student,

Recently some of your classmates took part in a survey for Swinburne University of Technology. You were absent on the day of the survey, and we would still like you to participate.

We would like to invite you to take part in this study that looks at how meditation affects children's health and well-being. Being part of the study means filling in a survey about your school, friends, relationships, feelings and behaviour.

This survey will take about 30 minutes to complete. It is completely confidential. Only researchers from Swinburne University of Technology will know what you say. We will not and cannot give out what you say to anyone else, not even your teacher, your principal, or your parent(s). Also, this survey is not a test. Your answers will not affect your school report or what happens to you at school.

This survey is voluntary. Your parent/guardian and your School Principal have given permission for you to participate in this project, however it is your choice if you want to complete the survey. You may withdraw at any time without explanation.

If you are happy to do the survey, please follow these instructions:

1. Read the white Student Information Letter that is in the envelope.
2. Take out the yellow survey. On the front page there is a small white piece of paper with the name of your school, your grade, and your name on it. Please check that this information is correct and if it is, tear off the white piece of paper and put it in the spare envelope in your pack. If any information on this white page is incorrect, please write what it should be.
3. Please do not write your name on the survey.
4. Place a tick (✓) in the box for the statement that best describes you.
5. Some questions ask you to choose if the statement is:
   ☐ Not True ☐ Somewhat True (Sometimes True) ☐ Certainly True

   For example, if the statement is "I play sport outside school", tick what you would answer:
   ☐ Not True ☐ Somewhat True (Sometimes True) ☐ Certainly True

6. Other questions ask you to choose if the statement is:
   ☐ Like Me (Yes) ☐ Unlike Me (No – Not Like Me)

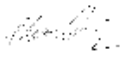
   For example, if the statement is "I smile a lot", tick what you would answer:
   ☐ Like Me (Yes) ☐ Unlike Me (No – Not Like Me)

7. Please tick only ONE answer each time.

8. When you have finished the survey, please check that you have answered every question.

9. Please place your survey in the spare envelope along with the small white piece of paper with your name on it and seal the envelope. Give this envelope to your teacher and he/she will post it to the researchers.

Thank you for participating in the survey. We appreciate your contribution.



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Appendix AC: Time 1 Survey Teacher Absent Letter

Dear Teacher,

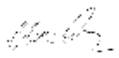
One or more of your students that were scheduled to participate in the survey today were absent. We would like them to complete the survey when they return. We are leaving with you a pack for each of the absent students in your class. Only those students whose parent/guardian has given them permission to participate in the survey should complete the survey. We have written their name(s) on the front of the pack.

Please ask the student(s) to complete the enclosed survey. It is very important to the integrity of this study that the following procedures are followed:

1. This survey is designed to be conducted in a supervised setting. Please have the student complete this survey at school during school hours.
2. This survey is confidential. Please ensure the student's privacy while completing this survey. The student has been assured that no one other than the researchers will have access to their answers.
3. To ensure the student's privacy, we have supplied an envelope with each survey so after the student completes the survey, he/she can seal the survey in the envelope included in the pack. Please collect the envelopes containing the completed surveys and post them to Tania Slaviero, PO Box 309, Ivanhoe, VIC 3079.
4. It is extremely important that other students who do not have parental permission to participate in the survey do not see the survey.
5. It is also critical that the survey is completed before the meditation/reading programs commence in Term 3.

If you have any questions, please feel free to contact Tania Slaviero via email: tslaviero@swin.edu.au or by phone: 0432 448 699.

Your assistance in completing these surveys is greatly appreciated.



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Appendix AD: Time 2 Survey Teacher Absent Letter

Dear Teacher,

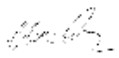
One or more of your students that were scheduled to participate in the survey today were absent. We would like them to complete the survey when they return. We are leaving with you a pack for each of the absent students in your class. Only those students whose parent/guardian has given them permission to participate in the survey should complete the survey. We have written their name(s) on the front of the pack.

Please ask the student(s) to complete the enclosed survey. It is very important to the integrity of this study that the following procedures are followed:

1. This survey is designed to be conducted in a supervised setting. Please have the student complete this survey at school during school hours.
2. This survey is confidential. Please ensure the student's privacy while completing this survey. The student has been assured that no one other than the researchers will have access to their answers.
3. To ensure the student's privacy, we have supplied an envelope with each survey so after the student completes the survey, he/she can seal the survey in the envelope included in the pack. Please collect the envelopes containing the completed surveys and post them to Tania Slaviero, PO Box 309, Ivanhoe, VIC 3079.
4. It is extremely important that other students who do not have parental permission to participate in the survey do not see the survey.
5. It is also critical that the survey is completed after the meditation/reading programs are completed.

If you have any questions, please feel free to contact Tania Slaviero via email: tslaviero@swin.edu.au or by phone: 0432 448 699.

Your assistance in completing these surveys is greatly appreciated.



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