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Exploring the Feasibility of a Concurrent Mindful Awareness Program, M3, for Children in a Community Setting

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Abstract

This study explored the feasibility of the Making Mindfulness Matter (M3) program for children. M3 is a universal eight-week, concurrent parent and child mindfulness program implemented in a community setting. The M3 curriculum includes mindful awareness concepts, social emotional learning, neuroscience and positive psychology. Ninety-seven children between the ages of 3-10-years and their parents participated in the M3 program. Children completed a mindfulness knowledge questionnaire pre and post-intervention and their responses to prompting questions related to using the skills at home were recorded. Parents completed the Behaviour Rating Inventory of Executive Functioning pre and post-intervention to investigate the efficacy of the program in terms of changes in children's self-regulation. An inductive content analysis was completed to evaluate children's responses, along with linear mixed models to evaluate pre-post intervention data. Results demonstrate that the M3 program is feasible from the child perspective and from parent report of child's self-regulatory behavior.

Keywords: Mindfulness, Feasibility, Acceptability, Children, Self-Regulation.

Summary for Lay Audience

This study examined a concurrent mindfulness program, Making Mindfulness Matter (M3). M3 is an eight-session mindfulness program that teaches children and families mindful awareness skills such a managing their thoughts, regulating their emotions, taking the perspective of others and gratitude. The main goal of the program is to teach resiliency skills to families. Few community programs exist that include both parents and children, further, limited research has been completed evaluating the outcomes of such a program in the community.

This study specifically examined the feasibility of the M3 program in a community setting, primarily from the child's perspective. Feasibility of the program has previously been evaluated from a parents' perspective and M3 was found to be very acceptable for parents (Pacholec, 2020). The current study explored the acceptability of the program for children as well as whether they gained knowledge of the concepts of the program from pre-to-post to determine whether M3 is effective.

To explore program feasibility, children's responses during the program were examined; each week children were asked if they practiced an M3 skill since last session and their answers were recorded. These responses were reviewed qualitatively and sorted into similar codes and themes. Additionally, children completed a mindfulness questionnaire that assessed their mindfulness knowledge prior to and at the completion of the program, in order to assess change over the time. Finally, parents completed a measure of children's self-regulation pre and post-intervention in order to evaluate change in self-regulation skills. The mindfulness questionnaire and measure of self-regulation were analyzed quantitatively.

The results of the study suggest that M3 is a feasible program for children. Results demonstrate the acceptability of the program as children find it engaging and are gaining

mindfulness knowledge. As well, parent responses on the self-regulation measure suggest children are gaining self-regulation skills and abilities, pointing to the promise of effectiveness of the intervention for children.

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Chapter 1: Introduction and Literature Review

In recent years, mindfulness programming has grown for both parents and children. The majority of the research has investigated school-based mindfulness programming, or parent only or child only interventions. Few programs exist that are designed to teach both parents and their children the benefits of mindfulness. This mixed-method study explored areas of feasibility of a universal mindfulness-based concurrent parent and child program, Making Mindfulness Matter (M3), from a child perspective and from a parent-perspective of the child's self-regulatory behaviour. Specifically, we examined the acceptability of the program to children and completed a preliminary evaluation of participants responses to intervention to determine if they are learning mindfulness knowledge and if the intervention shows promise for improving self-regulation skills in children.

Organization of Thesis

The first chapter of this thesis reviews feasibility in the context of community interventions relating to the current thesis. Then, the literature surrounding concurrent mindfulness programming as a form of prevention and early intervention for children and families will be examined. However, due to the lack of concurrent parent and child programs, independent child and parent mindfulness programing literature is included. Next, the M3 program will be introduced and the current study will be explained. Chapter 2 then describes the methodology of the study, which is part of a larger study investigating the feasibility of the M3 program in terms of varying perspectives (e.g., parent, facilitator and community) and dimensions (e.g., practicality, implementation, demand). Chapter 3 reviews the findings of the qualitative content analysis and the linear mixed models. Finally, Chapter 4 presents a discussion of the current study, including limitations and further directions.

A Feasibility Evaluation

The current study investigates areas of feasibility of the M3 program for children. It is a part of a larger, more robust feasibility study looking at various perspectives and dimensions of the program. Feasibility studies are used to explore whether an intervention is appropriate for further full-scale testing with different or larger populations (Bowen et al., 2009; Tickle-Degnen, 2013). Feasibility studies can also give information about whether or not the current findings have the potential to become relevant and sustainable (Bowen et al., 2009).

If feasibility studies are completed before larger randomized control trial (RCT) studies, the intervention effectiveness can be accelerated (Orsmond & Cohn, 2015). Feasibility studies are crucial in developing a successful intervention as they allow researchers to adapt their intervention to receive the most promising result (Orsmond & Cohn, 2015). Thabane and colleagues (2010) summarized four main purposes of feasibility studies: to test the process, resources, management and scientific basis for the planned RCT.

Bowen and colleagues (2009) determined eight areas of focus in feasibility studies: acceptability, demand, implementation, practicality, adaptation, integration, expansion and limited efficacy testing. The current study focused specifically on the acceptability of the intervention and limited efficacy testing. Acceptability refers to the recipient's reaction to the intervention including outcomes such as satisfaction, intent to continue use and suitability (Bowen et al., 2009). Limited efficacy testing refers to the change seen in intermediate variables throughout the program (Bowen et al., 2009). Other areas of feasibility have been explored in previous evaluations of the M3 program.

Orsmond and Cohn (2015) explain a model of feasibility that the current study has been centered around. They list 5 main objectives of a feasibility study: evaluation of recruitment

capability and resulting sample characteristics, evaluation and refinement of data collection procedures and outcome measures, evaluation of the acceptability and suitability of the intervention and study procedures, evaluation of the resources and ability to manage and implement the study and intervention and preliminary evaluation of the participant responses to intervention. The current study was centered around this model as it allows the examination of multiple areas of feasibility with the available data. The model by Orsmond and Cohn (2015) allows the examination of the response to the intervention both through quantitative results and participant feedback.

The primary feasibility question of this study is: Do children find M3 engaging? This question assessed program acceptability. Engagement can be defined as "attending to draw favourable attention or interest" (Merriam-Webster, n.d.). To answer this question, Orsmond and Cohn's (2015) third objective will be studied: evaluation of the acceptability and suitability of the intervention and study procedures. It is important to examine this area of feasibility because it will display whether the children are interested in the program and continue to use the material that they learn outside of the program. In order for a program to be successful over time, the participants must enjoy it and believe it is beneficial to them. If a program is not accepted and suitable for its participants, the likelihood that participants will practice and develop the skills is low (Orsmond & Cohn, 2015).

In order to study the secondary question, whether M3 is effective for children, this study will focus on their last objective: preliminary evaluation of participants responses to intervention. This objective is centered around the question: Does the intervention show promise of being successful with the intended population? The objective assesses the response to the program by examining quantitative and qualitative data to determine whether change is occurring in the right

direction and that there is a large enough effect (Orsmond & Cohn, 2015). As well, this objective explores routes to use if the data is not showing change in the expected direction, such as evaluating the data collection methods, theoretical model, adaptations to the program or implementation differences (Orsmond & Cohn, 2015). Prior to describing the M3 program in more depth, a review of the current literature surrounding concurrent mindfulness programming for parents and children will occur.

Concurrent Mindfulness Programming for Parents and Children

Mindfulness has been explained as a non-judgmental accepting of moment-by moment awareness (Bishop et al., 2004; Lau et al., 2004). It involves the ability to self-regulate attention while being curious, open and accepting towards the present moment (Lau et al., 2004). When a person is mindful, they respond to situations and others reflectively, instead of responding reflexively (Lau et al., 2004). Mindfulness programming aims to cultivate this state of mindful awareness in participants.

Mindfulness interventions have been at the forefront of programming in the past several decades (Durlak, Weissberg, Dymnicki, Taylor & Schellinger, 2011). These programs have been centered around assisting adults, and more recently been employed for children within the school setting (Durlak et al., 2011). There has been far less programming for children or parents within a community setting. A review of the current literature revealed a sparsity of studies that have implemented a concurrent universal mindfulness program for parents and children, and even fewer studies exist that target parents and their typically developing children. Of those studies reviewed, research suggests promise in parent-child concurrent mindfulness programming for clinical populations.

Haydicky, Shecter, Wiener and Ducharme (2015) implemented a mindfulness-based cognitive behavioural intervention for youth with Attention Deficit Hyperactive Disorder (ADHD) between the ages of 13-18-years and their parents. Eighteen youth and their parents (17) attended 8 weekly sessions where they learned mindfulness skills, elements of cognitive behavioural therapy and psychoeducation. In this pre-post study, parents reported a decrease in levels of youth's inattention, conduct problems and peer relation problems after the intervention. As well, they reported a decrease in their own stress and an increase in mindful parenting. These improvements were also seen 6 weeks after the intervention in a follow-up assessment.

In another study evaluating the above program qualitatively, 5 families participated in the same intervention (Haydicky, Wiener & Shecter, 2017). After the intervention an improvement in peer and family relationship quality was reported by parents. Participants also reported feeling stronger at implementing emotion regulation strategies and relying less on maladaptive strategies after the intervention. As well, they felt that they had increased levels of empathy, reduced emotional reactivity, increased mindfulness and self-regulation, improved communication and reductions in the intensity and duration of conflicts after the intervention.

Salem-Guirgis and colleagues (2019) implemented a 10-session mindfulness-based intervention with 23 parents and their children living with Autism Spectrum Disorder (ASD). Youth participants were between the ages of 12 and 23-years. A within-subject repeated measures design was used to evaluate the program outcomes. After the intervention, parents reported improvements in mindful parenting and an increased ability to be less reactive, describe their emotions and listen to their children with full attention. They also noted improvements in their child's ASD symptoms, social motivation and emotion regulation after the program. Youth reported improvements in their cognitions related to hopelessness and sadness, repetitive focus

on negative emotions and ruminations. Overall, the program was found to have a high level of feasibility; families had high attendance rates and gave positive feedback on the program. As well, program fidelity was found to be high.

These studies suggest that concurrent mindfulness programs show positive outcomes for both parents and children in clinical populations. Specifically, all of the studies reviewed found an increase in children's self-regulation and a decrease in parent stress after the concurrent intervention. These concurrent studies support previous research that has found independent mindfulness programming shows promise as an intervention that aids in the development of self-regulation in both adults and youth (Dunning et al., 2019; Perry-Parish, Copeland, Webb & Sibinga, 2016). The above research also suggests that concurrent parent-child mindfulness programming may be feasible in a clinical setting.

Despite the lack of evidence for concurrent mindfulness programming for typically-developing children, research suggests that programs would be beneficial for such population. Recently, Sanner and Neece (2017) displayed that quality parent/child interactions significantly explain the relationship between parenting stress and child behavioural problems. They conclude that a mindfulness program that targets parents and children concurrently, may aid in the parent-child relationship allowing them to potentially decrease parent stress and child behavioural problems. Furthermore, studies that do have both a child and parent component show greater promise to improve child and family functioning than an independent mindful parenting intervention (Harnett & Dawe, 2012).

Due to the lack of research investigating concurrent mindfulness programming for typically developing children, we will now turn to the literature specific to mindfulness interventions for children only, and then mindfulness interventions directed solely at parenting.

Mindfulness Interventions for Children

Mindfulness programming across two decades and varying context shows feasibility of this type of programing for youth, and consistent positive outcomes. Teaching mindfulness skills to youth has been shown to be helpful in their everyday functioning **(**Kallaparin, Koo, Kirubakaren & Hancock, 2015; Perry-Parish et al., 2016; Zoogman, Goldberg, Hoyt & Miller, 2014). As well, mindfulness programming teaches skills that continue to show benefits for youth at least 6 months after the programming has been completed (Durlak et a., 2011; Kallaparin et al., 2015).

In particular, within the past two decades, research in mindfulness and social emotional learning has flourished in school settings (Durlak et al., 2011). In a review of school-based mindfulness interventions, positive, significant results with a small effect size were seen (Durlak et al., 2011). Following the intervention, children were reported to have increased social-emotional competences, attitudes about self, others and school, increased prosocial behaviours, increased grades and decreased conduct and internalizing problems.

As well, a recent meta-analysis of randomized controlled trials of mindfulness-based interventions in school-based and community-based populations found similar results to Durlak and colleagues (2011). Dunning and colleagues (2019) reported that mindfulness interventions led to a decrease in children and adolescent's anxiety, stress, depression and negative behaviours and an increase in their mindfulness, self-regulation and attention. Therefore, both recent reviews of mindfulness interventions for children in schools display the positive impact that they have on mental health, self-regulation and attention.

Research surrounding child mindfulness interventions in a clinical setting is currently expanding. Zoogman and colleagues (2014) completed a meta-analysis of the current literature

surrounding mindfulness interventions in clinics and schools. Their analysis consisted of 20 quantitative studies with youth between the ages of 6-21-years. Most of the interventions were conducted in schools, with 4 being completed in a clinical setting. Dependent variables included measures of psychological symptoms, general functioning, quality of life, mindfulness and attention. The effect size of interventions for clinical samples was 3 times the magnitude of non-clinical samples, suggesting a great potential for mindfulness interventions in clinical samples. In addition, mindfulness interventions appeared to have the greatest impact on psychopathology (e.g. anxiety, depression, substance abuse), with twice the effect size found for psychopathology than any other variable measured. This review suggests that mindfulness interventions may make the biggest difference in those that need it the most, although all children and youth did benefit from the programming (Zoogman et al., 2014).

In reviewing mindfulness interventions and their impact on children and adolescents, Kallapiran and colleagues (2015) reviewed mindfulness-based interventions, including mindfulness-based stress reduction and acceptance commitment therapy interventions. Their review contained 15 randomly controlled trials evaluating the effectiveness of mindfulness interventions to improve mental health in children. Their review found that mindfulness-based interventions improve children's stress, anxiety, depressive symptoms and quality of life in both clinical and nonclinical samples. Overall, mindfulness-based interventions showed better results than nonactive controls.

In a community-based population, Coholic and colleagues (2011) implemented an art-based mindfulness program with children from a local child protection agency and children mental health centre. The program consisted of 12 weekly two-hour sessions. The program was found to be acceptable, feasible and suitable for working with children experiencing adversity

(Coholic et al., 2011). Children and their parents perceived this program as being beneficial to them, reporting this in post- group interviews. As well, they found that children's emotional reactivity decreased after the program. This suggests the potential for mindfulness-based interventions to be feasible and demonstrate positive outcomes for children in a community setting.

In assessing the feasibility of mindfulness interventions in this growing field of research, Burke (2010) completed a review of the mindfulness programming literature and found there was a reasonable base of support for the feasibility and acceptability of mindfulness-based approaches for children. Overall, the current literature supports the feasibility of mindfulness interventions for children, as well as displays several positive outcomes.

Self-Regulation in Children

Throughout the review of mindfulness literature, increases in children's self-regulation were commonly found after completing mindfulness interventions. Self-regulation can be defined as an individual's ability to control or direct their attention, thoughts, emotions and actions (McClelland & Cameron, 2012). It can also include applying attention, working memory and inhibitory control in order to act appropriately (McClelland & Cameron, 2012). Having the ability to control one's actions and act appropriately allows them to live cooperatively and achieve their goals (Heatherton & Wagner, 2011).

Developing self-regulation skills is crucial in early childhood (McClelland & Cameron, 2012). Self-regulation skills are needed to be successful entering school and then show rapid growth throughout early school years (McClelland & Cameron, 2012). When children enter the school system, they are faced with increasing demands on their self-regulation skills by their

teachers and peers. Yet, research suggests that some children are not ready for these demands (McClelland & Cameron, 2012).

Children with self-regulation challenges are at an increased risk of negative outcomes as early as kindergarten (Blair, 2002). Specifically, children with self-regulation challenges in kindergarten are at a high risk of developing peer difficulties and low academic achievement (Blair, 2002). As well, in later school years they often have difficulties with social and emotional competences such as regulating emotions (Diamond, 2005; Semrud-Clikeman & Schafer, 2000).

One component of self-regulation is emotion regulation (Heatherton & Wagner, 2011). Emotion regulation refers to the ability to control how or when you feel emotions, as well as the intensity and expression of the emotion (Dvir, Ford, Hill & Frazier, 2014). It includes concepts such as emotional awareness, the ability to recognize emotions, and social cognition, the ability to process social emotions (Dvir et al., 2014). Emotion regulation difficulties play a role in the development of several psychological disorders such as anxiety, depression and bipolar disorder (Dvir et al., 2014). Having high levels of emotion dysregulation in childhood increases the risk of emotion dysregulation in adulthood, suggesting that interventions that aid in emotion regulation should begin in early childhood (Dvir et al., 2014).

The above research suggests that children who struggle with self-regulation are at a higher risk for developing later social, emotional and academic consequences compared to their peers. Therefore, early intervention to improve these difficulties is crucial.

Mindfulness Interventions for Parents

In evaluating children's mental health and well-being, it is very important to consider parental mental health and well-being also (Burgdorf, Szabo & Abbott, 2019). Research has consistently found that improving parents' mental health can have a positive impact on the

wellness of their children (Burgdorf et al., 2019; Meppelink, Bruin, Wanders-Mulder, Vennik & Bogels, 2016; Singh et al., 2006b; Singh et al., 2007). A recent longitudinal, multiple informant study found that across all ages of children (2-23), parent mindfulness is directly associated with less negative parenting practices, which are directly associated with less youth internalizing and externalizing problems (Parent, Mckee, Rough & Forehand, 2016).

Mindfulness interventions delivered to parents have shown reductions in parenting stress, as well as improvements in the child's internalizing, externalizing, cognitive and social behaviours (Burgdorf et al., 2019). Furthermore, Burgdorf and colleagues (2019) discovered that greater reductions in parent stress predicted larger improvements in children's externalizing and cognitive outcomes with children displaying less externalizing behaviours and stronger cognitive outcomes. Additionally, Meppelink and colleagues (2016) implemented an 8-week mindfulness program for parents. After the program, they found that mindful parenting levels had increased, parents displayed less psychopathology and rated their children's externalizing behaviours to be lower (Meppelink et al., 2016). The above research is evidence that mindful interventions for parents can impact their own psychological functioning, as well as the psychological functioning of their children.

There has been limited research completed evaluating the impact of parent mindfulness programming on child outcomes for typically developing youth (Kill & Antonacci, 2020). Kill and Antonacci (2020) completed a review of such studies (6) in community, non-clinal populations. Across studies, parent report of child behaviours improved after participating in the mindfulness programs.

Recently, a mindfulness-based intervention was run for parents in a Latino community. This intervention introduced parents to mindfulness and self-compassion exercises to teach skills

to support parent-child attachment, self-regulation, adaptive skills and executive functioning. This program was found to be feasible in this community, as participant's showed changes in their own behaviours and emotions following the program, demonstrating positive preliminary outcomes. This suggests promise in mindfulness programming for parents in the community (Burns, Merritt, Chyu & Gil, 2019).

Making Mindfulness Matter

Making Mindfulness Matter (M3) is a universal mindfulness-based community program run in a community setting at a local family support and crisis centre. It is loosely based on a school-based mindfulness program, MindUP. MindUP includes 15 lessons on social-emotional and mindfulness concepts that teachers lead in their classrooms (Maloney, Lawlor, Schonert-Reichl, & Whitehead, 2016). MindUP has been found to be acceptable to children in the school setting (Schonert-Reichl & Lawlor, 2010).

The M3 curriculum includes mindful awareness concepts, social emotional learning, neuroscience and positive psychology. The primary objective of the program is to teach resiliency to families. M3 is offered concurrently for parents and children (aged 4-10-years). Each session is 90 minutes long and families attend 8 weekly sessions. Please see table 1 for a summary of each session's objective.

Table 1
M3 Session Objectives

Session	Objective
1. An Introduction to Breathing, the Brain and Mindfulness	The focus of session one is building a comfortable environment and introducing main concepts such as how the brain and our thoughts and feelings work together, mindful awareness and deep breathing. Parents also learn about neuroplasticity and the STOP model of mindful parenting.
2. How Our Brain Works Under Stress	Session two teaches how the brain works under stress. Children and parents learn to further identify which part of their brain is busy when they feel big emotions and how mindfulness and a brain break can calm their amygdala, so they can choose to respond, rather than react to stressful situations.

3. Mindful Awareness	The concept of mindfulness is further explored in session three, with children learning what is mindful or unmindful thinking and practicing how to be in the present moment. Parents learn about the effects of breathing on the brain and body and learn mindful techniques to use with their child.
4. Mindful Sensing	Further practice at being in the moment, through Mindful Sensing, is the focus of session four. Both parents and children participate in a variety of activities using the five senses mindfully.
5. Mindful Movement	Mindful movement is the topic of session five. Parents learn about the brain-body connection; and mindful awareness of their body and their children's body during parent-child interactions. Children also learn mindful awareness of their body including how good posture relates to good thinking.
6. Perspective Taking	Both parents and children learn how perspective taking is a skill they can practice and strengthen through mindful awareness. Parents explore their child's perspective through imagining their child is video recording all interactions and using that to understand how they should act in similar situations. Children learn perspective taking through games, books and video.
7. Choosing Optimism and Appreciating Happy Experiences	Choosing optimism and appreciating happy experiences are the focal points of session seven, with parents discovering that optimism can be learned and three techniques to be a more optimistic parent. Children learn about positive and negative thinking, how it affects how we feel and mindful ways to think more positive and have a growth mindset.
8. Expressing Gratitude and Acts of Kindness	Using mindful awareness to practice gratitude and kindness are explored, with children participating in activities that encourage being thankful, and doing acts of kindness for those around them. Parents similarly learn how gratitude and kindness are linked to better mental health and stronger family relationships and that kindness starts with being kind to ourselves.

Throughout the program, families learn and practice mindful awareness skills such as managing their thoughts, regulating their behaviour and emotions, perspective taking and gratitude. It is estimated that 80% of the M3 program includes mindful awareness concepts. Parents and children learn similar concepts, at developmentally appropriate levels. For example, children learn the concepts through games, crafts, songs or stories and parents learn through PowerPoint slides, discussion and applied practice.

The program begins by teaching families what happens to the brain under stress and moves forward to teach skills to deal with stress such as mindful sensing, mindful movement, breathing techniques and mind breaks. The last few weeks include several positive psychology concepts such as gratitude and spreading kindness. In both the parent and child sessions, several

self-regulation strategies are taught and practiced. Families are taught how to manage big emotions and behaviours through mindful awareness. For example, each week parents review the STOP model which reminds them how to respond to their child's big emotions instead of react to them. It starts with reminding them to Stop what they are doing, then Take a mind break, Observe what is going on, and Proceed mindfully. This is a strategy that parents can use to regulate their behaviours and demonstrate this for their children.

The M3 program is manualized and each week parents and children walk through planned content and a series of activities. Children learn the program material for themselves and parents learn the material to assist them in their own self-regulation during parenting as well as to further teach and reinforce the concepts at home for their children. Each week, parents receive resource cards that provide them with language and strategies to use around the home. Please see Table 2 for the main content and activities for each week of the program.

Table 2
M3 Session Overview

Session	Parent Group	Child Group
1	**An Introduction to the Brain, Breathing & Mindfulness**	**An Introduction to the Brain, Breathing & Mindfulness**
	Content & Activities: • Introduction to M3, Yarn Activity, and Group Rules • Introduction to the STOP Model • Mind Break • The Developing Brain/Neuroplasticity • Introducing the Three Brain Regions • Bringing it Back to Parenting/ Journal 1 • Distribute and discuss M3 Kit	Mindfulness Activities: • Check in/ Review • Mind Break • Yoga • Brain Lesson: Moving Snowballs • Book • Table or Group Activity: What is on your Mind?
2	**How Our Brains Work Under Stress**	**How Our Brains Work Under Stress**
	Content & Activities: • Mind Break • Discuss Parent Journal • Review Brain Regions • The Stress Response • Flipping Your Lid: Hand Model of the Brain • Amygdala Shake-Up • Bringing it Back to Parenting • STOP Model	Mindfulness Activities: • Check in/Review • Mind Break • Yoga • Brain Lesson: Parts of the Brain/Flipping Your Lid • Book • Group Activity: Which part of my Brain is Busy?/ Let's Vote • Brain Game: Mindful Tag/Table Activity: Amygdala Jar
3	**Mindful Awareness & Mindful Breathing**	**Mindful Awareness & Mindful Breathing**
	Content & Activities: • Mind Break • Discuss Parent Journal • What is Mindful Awareness (Read Mindful Monkey, Happy Panda) • Formal/Informal Mindfulness • Why Mindful Awareness? (Just Breathe video) • Breathing and the Brain • Mindful Breathing Activity • Bringing it Back to Parenting	Mindfulness Activities: • Check in/ Review • Mind Break • Yoga • Brain Lesson: Mindfulness and the Brain • Book • Brain Game: Mindful/ Unmindful • Table or Group Activity: Cotton Ball Blow

	• STOP Model	
4	**Mindful Sensing**	**Mindful Sensing**
	Content & Activities: • Mind Break • Discuss Parent Journal • Mindful Awareness in Parenting Scenarios • Mindful Sensing Activities (Tasting, Listening, and Smelling) • Bringing it Back to Parenting • STOP Model	Mindfulness Activities: • Check in/Review • Mind Break • Yoga • Very Hungry Caterpillar • Brain Lesson: Exploring our Senses • Table or Group Activity: Sense Stations • Book • Brain Game: Telephone
5	**Mindful Movement**	**Mindful Movement**
	Content & Activities: • Mind Break • Discuss Parent Journal • Mindful Awareness of the Body • Breath & Body as Anchors • Body Scan Meditation or Progressive Muscle Relaxation Exercise • Bringing it Back to Parenting • STOP Model	Mindfulness Activities: • Check in/ Review • Mind Break • Yoga • Brain Lesson: Active/Calm Bodies • Table or Group Activity: Choose at least 2 from the list • Book • Journal: Heart Rate
6	**Perspective Taking**	**Perspective Taking**
	Content & Activities: • Mind Break • Discuss Parent Journal • Understanding Perspectives • Taking Perspective • Why this child? Why now? • Parenting Double Take • Bringing it Back to Parenting • STOP Model	Mindfulness Activities: • Check in/ Review • Mind Break • Yoga • Brain Lesson: Perspective Taking with Feelings • Table or Group Activity: Perspective Taking Practice • Book/Video • Journal: How I think the story ends
7	**Choosing Optimism & Appreciating Happy Experiences**	**Choosing Optimism & Appreciating Happy Experiences**
	Content & Activities: • Mind Break • Discuss Parent Journal • Optimism & the Brain's Response to being Optimistic • Choosing Optimism Strategies 1-3 • Happiness and the brain • Happy Memory Movie Activity • Bringing it Back to Parenting • STOP Model	Mindfulness Activities: • Check in/ Review • Mind Break • Yoga • Brain Lesson: Turn Around Game/ Optimism vs Pessimism • Table or Group Activity: Thank a Farmer/Happy Memory • Book • Brain Game: Shaker of Emotions
8	**Expressing Gratitude & Acts of Kindness**	**Expressing Gratitude & Acts of Kindness**
	Content & Activities: • Mind Break • Discuss Parent Journal • Kindness, Gratitude and the Brain • Being Kind to Ourselves • Gratitude Video and Family Gratitude Ideas • Bringing it Back to Parenting • STOP Model • Closing Gratitude Circle	Mindfulness Activities: • Check in/ Review • Mind Break • Yoga • Brain Lesson: Wrinkles Heart • Table or Group Activity: Kindness Ripples/Kindness Science Activity • Book: Chrysanthemum • Brain Game: The Gratitude Game

Theoretical Model of Family Resiliency

The Applied Theory of Change model proposes the interconnectedness of the family system (Newland, 2015; Appendix J). This model builds upon Bronfenbrenner's Ecological Systems Theory (Bronfenbrenner, 1989) that identifies microsystems, such as family and peers that directly influence one's development, and macro and exo-systems that continuously impact microsystems. The Applied Theory of Change model builds on Bronfenbrenner's Ecological Systems Theory by placing more emphasis on the family system and the many factors that

impact it. The model explains direct and indirect ways in which changes in parent health, mental health and well-being can directly and indirectly affect children's well-being.

The Applied Theory of Change model has been adapted to focus on family resiliency rather than simply child well-being (See Appendix K). This was changed as the M3 program's goal is to build family resilience and have an impact on both children and their parents, improving the family dynamic. Each component of M3 aims to improve family resiliency, including ways for parents to improve their own well-being as well as parenting strategies. In targeting parent well-being, parenting and child well-being, the M3 program has the potential to impact all parts of the model and in turn, family resiliency.

The adapted model demonstrates a similar idea to the model created by Newland (2015), demonstrating that parent health as well as stress, impacts parenting, which then in turn impacts child well-being. It also highlights the direct impact that parent well-being can have on child well-being. The difference with the adapted model is that it also recognizes that directly influencing child well-being can have an impact on parent well-being, leading to many pathways of effecting family-resiliency.

Objective

This project implemented a mindfulness intervention, Making Mindfulness Matter (M3), to families at a local family support and crisis centre to measure areas of feasibility of the intervention in a community setting. Pacholec (2020) evaluated the acceptability of the intervention from a parents' perspective and found it to be a very acceptable program. The current study answers the following questions:

1) Is the M3 program acceptable to children? Is it engaging and suitable for them?

2) Does the M3 program show promise for effectiveness in improving self-regulation in children?

Chapter 2: Methodology

This chapter explains the methodology of this project. The general study design is reviewed followed by an explanation of the participants, study procedure and the M3 program. This chapter concludes with the measures used and a brief summary of the statistical analyses completed.

Study Design

The present study used a mixed method design to evaluate two key aspects of program feasibility: acceptability and preliminary evaluation of participants responses to intervention. The primary question was do children find M3 engaging? To answer this question, we examined children's qualitative responses when asked if they practiced an M3 skill since the last session. Secondly, we answered whether M3 is effective for children by examining if preliminary pre-post measurement of mindfulness knowledge and self-regulation showed change in the right direction. We examined the change in levels of children's mindfulness knowledge as well as parent reported change of child self-regulation.

Participants

Prior to recruiting participants, the study was approved by the Western Research Ethics Board (See Appendix L). Participants were referred to M3 through a staff member at a family support and crisis centre in southwestern Ontario. Families become clients at the centre when they need family-related support. Often clients at the centre receive services due to family stress, adversity and mental health challenges. After they reach out, an intake worker helps them to

determine what service may be beneficial to them. If families were struggling with parenting or had a child struggling with behaviour or emotion regulation, they were referred to M3.

Inclusion criteria included having both the child and their parent/guardian agree to attend the concurrent program, the child being between the ages of 3.50-10.99-years, and both the parent and child understanding English well enough to follow simple program instructions and complete the questionnaires.

Procedure

If parents and their children agreed to participate in the program and met inclusion criteria, they were told that the program was being evaluated and were asked if they could be contacted by the research coordinator to learn more about what is involved (See Appendix C). The research coordinator then connected with the parents over telephone to explain that the M3 program was being evaluated for research purposes. The research coordinator clearly explained that participating in research is optional and not dependent on attending the program (See Appendix D). In this explanation, the research coordinator also explained that the parent will be providing consent for their child to be part of the research (See Appendix E). They explained that children will complete measures at the beginning of the first session and at the end of the last session, after providing assent (See Appendix F).

After being informed about what they would be asked to do should they agree to participate in the research, the research coordinator set a time to meet with one of the parents to have them complete the informed consent form and the pre-intervention measures. After the explanation, if parents wanted time to think about consenting to research, they were invited to take the consent form home to think about their decision. If they verbally consented to participate in research, they were invited to complete the consent form, a demographic information

questionnaire (See Appendix G), an adverse experience questionnaire and the Behaviour Rating Inventory of Executive Functioning- 2nd Edition or Behaviour Rating Inventory of Executive Functioning- Preschool Version (BRIEF). As a part of a larger study the participants also completed the Behaviour Assessment Scale for Children- 3rd Edition and the Parenting Stress Index (Short Form). Given previous studies investigating mindfulness interventions for children indicate some improvement in self-regulation, the BRIEF was chosen to be included in this study to evaluate if parents saw improvement in their child's self-regulation after being taught the M3 skills and strategies.

During the completion of the measures, the research coordinator explained that the information the participants are providing is confidential and will be stored in a locked cabinet in a secure location. As well, parents were asked not to provide any identifying information on any of the measures. The only way the research team knew their identity was through a unique ID code that only the research team had access to. Following the completion of the measures, parents were provided with a link to help with stress management, created by the Child Development Institute.

Parents were compensated for the time they took to complete the research measures. They received a $25 grocery store gift card for agreeing to complete the pre-intervention measures and a second gift card for $25 for agreeing to complete the post-intervention measures.

The children completed their assent form prior to the first M3 session. The research coordinator explained the assent process in age appropriate language and children consented to participate in the program both verbally and in writing. As well, if their parent consented to them participating in research, they were asked to complete the Child Mindfulness Questionnaire (See

Appendix H) before the start of the program. Both the assent form and Child Mindfulness Questionnaire were completed at the first M3 session, prior to the program beginning.

Intervention

The M3 program was delivered at the family support and crisis center. It was run as a concurrent parent-child program, with parents and children completing the program at the same time, in separate rooms. The children's sessions were run in the gymnasium or children's large group room. There was a table in the group room for snack and table activities. As well, there was a carpeted area or yoga mats that were used for activities such as yoga and mind breaks. Children were provided with light refreshments and snacks. The parent session was run in a group room with a table so that parents could sit in a circle around the table. At the front of the room, a screen was present so that the parents could view a PowerPoint presentation to follow along the session. Parents were also be provided with light refreshments and snacks. Parent and children met at the end of each session to complete a family mind break together.

In both the parent and the child program, there were two facilitators running the sessions. These facilitators received a full-day standardized training session on the program. They were also provided with the program manual and a kit full of resources for the sessions. During each session, there was also a research assistant present. The research assistants were graduate students who had received a 2-hour training on proper data collection methods prior to participating in M3. Before the first session began, the research assistant introduced themselves to the group (both parent and child), explained any pre and post-group measures needing to be completed that day, and explained that the notes that they were writing were anonymous and no identifying information would be recorded.

Children-parent dyads attended 8 weeks of the M3 program, with a 90-minute session each week. Each group of children and parents consisted of 4-8 people. Separate sessions were run for children aged 4-6.99-years and children aged 7-10.99-years.

Measures/Data Collected

Child Measures. In order to assess children's level of mindfulness knowledge and skills, children completed a mindfulness questionnaire. This questionnaire was a researcher developed measure to determine how much children know about mindfulness and the concepts taught in M3 prior to M3, and to examine if they gained knowledge of this information following completion of the program. The questionnaire used faces as responses using a smiling face to represent "yes", a straight face to represent "I don't know" and a frowning face to represent "no". An example of some of the questions that were included are "I know what a breathing break is" and "I know how my brain works when I am angry or upset."

The questionnaire was completed before session 1 of the program and at the end of session 8. A research assistant was present in these sessions in order to help the children fill out the form accurately. They were able to assist children who could not write on their own to complete their answers. As well, they could reiterate what each of the options meant throughout the assessment. The research assistant explained that there were no right or wrong answers and encouraged children to answer as honestly as possible. They were not able to prompt the children to answer a certain way and copied their answers identically. If a child did not answer a question, the research assistant left it blank and made a note that the child did not answer.

The data collected from the mindfulness questionnaire was uploaded to a secure database. A random data check was completed on one-third of the data to confirm that no error was made in the scoring or uploading.

Throughout each M3 session, the research assistant made notes regarding attendance, participation, engagement and feedback from the participants and also wrote down quotes from children. These quotes were in response to the questions that the researcher asked at the beginning of each session (See Appendix I). Specifically, the quotes analyzed in the current study were responses from the children when the research assistant asked them "Did you practice (previous week's skill) since last session? When/how?" The research assistant asked this question, along with extended questions such as "Why not?" to the group of children at the beginning of each session. They recorded children's responses word for word in the research binder. The responses were recorded anonymously, without any identifying information included. Both positive and negative comments were recorded.

Parent Completed Measures. In order to assess children's self-regulation skills, parents completed a standardized measure of executive functioning, the Behaviour Rating Inventory of Executive Functioning-Second Edition (BRIEF-2) for children between the ages of 5.0-10.99-years, or the Behaviour Rating Inventory of Executive Functioning-Preschool Version (BRIEF-P) for children between the ages of 3.5-4.99-years. Parents completed the appropriate measure of the BRIEF at baseline and 8 weeks. The BRIEF took approximately 10-15 minutes to complete. On the form, parents were asked to rate behaviour occurrence of 86 items on a 3-point Likert scale choosing never, sometimes or often (Gioia, Isquith, Steven, Guy & Kenworthy, 2015). The BRIEF-2 was normed on child ratings from 3603 participants matched by age, gender, ethnicity and parent education level to the U.S. census data (Gioia et al., 2015). The BRIEF-2 displays clinical utility, high concurrent validity and high reliability (Gioia et al., 2015).

The BRIEF-P includes 63 items that measure different aspects of self-regulation. The BRIEF-P was normed on child ratings from 460 parents reflecting 1999 US Census estimates for

race, gender, socioeconomic status and age (Sherman & Brooks, 2010). It has been shown that the BRIEF-P demonstrates high internal consistency and moderate test re-test reliability. As well, it has demonstrated good construct validity (Sherman & Brooks, 2010).

For this study, common scales across both the BREIF-2 and BRIEF-P were used. These include the Global Measure of Executive Functioning (GEC), the Emotion Regulation Index and the Inhbit scale.

The data collected from the BRIEF-P and BRIEF-2 was uploaded to a secure database. A random data check was completed on one-third of the data to confirm that no error was made in the scoring or uploading.

Statistical Analyses

Qualitative Thematic Analysis. To analyze the quotes recorded during the child program, qualitative thematic analysis was completed. Thematic analysis is a widely used method to identify and analyze patterns in data (Braun & Clarke, 2006). In this study, a realist method was used as experiences, meanings and the reality of the participant were reported. As well, an inductive approach was used where codes and themes were drawn directly from the data. There were no pre-existing coding frame and preconceptions.

Within the thematic analysis, only the manifest data was coded. This was done at a semantic level and themes were identified at surface meanings of the data. Throughout the analysis, we set to describe the data and then compose interpretations. No further investigation into the quotes was completed.

The qualitative thematic analysis followed the phases outlined by Braun and Clarke (2006). Please see Table 3 for an overview of these phases.

First, the researcher became familiar with the data. To do this, the researcher transcribed the data so that it was all in one place. Following this, they read over the statements multiple times before any coding was completed. As a final step in this stage, the researcher read over all of the statements while making notes on potential codes or ideas that were had about each statement.

In phase two of the analysis, the researcher began to generate initial codes. Codes identify a feature of the data that are of importance to answer the research question (Braun & Clarke, 2006). These are considered to be the most basic piece of the data that can be assessed (Braun & Clarke, 2006). In this phase, the researcher reviewed all of the statements and prior notes and constructed a code for each one. This was completed after the statements had been organized in a manner in that related statements were located close to one another.

In the third phase of the analysis, codes were put together into potential themes. Themes demonstrate a patterned response within the data (Braun & Clarke, 2006). This phase began with the researcher making a separate table for each of the codes. These tables were then manipulated to organize codes in different manners to form larger themes. At this end of this stage, the researcher had 7 potential themes.

Phase four involved refining the themes created in the phase before. Through this phase, the researcher discussed the themes with others to gain feedback. In level one of this phase, the researcher reviewed all of the codes from each theme to confirm that they formed a coherent theme. Nothing was changed in this level. Following this in level two, the researcher reviewed the validity of each theme in relation to the entire data set. In this phase, two of the themes were combined with other themes that had been created as they represented a similar idea within the entire dataset.

Once the five themes were confirmed, the researcher moved to the fifth phase of the analysis. In this phase, the "essence" of each theme was defined by determining what each theme represents within the dataset. Next, names were constructed to represent each theme and give readers a quick sense of what each theme is about. This was done with support from the research team.

Finally, in the sixth phase of the model this analysis and report was put together to summarize the thematic analysis that was completed.

Table 3
Qualitative Thematic Analysis Procedure (Braun & Clarke, 2006)

Phase	Description
1. Familiarize yourself with your data.	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes.	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes.	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes.	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes.	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report.	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

Linear Mixed Models. To analyze the amount of mindfulness knowledge that children gained during the program, the change in responses on the Mindfulness Knowledge Questionnaire was assessed. A linear mixed model examined changes on the questionnaire

between pre-intervention and post-intervention. Covariates included in the model were child age, child sex, parent sex, attendance and any adverse experiences.

A linear mixed model examined changes on the BRIEF responses between pre-intervention measures and post-intervention measures. Specifically, changes in participants' scores on the Global Executive Composite, Emotion Control Index and Inhibit Scale were analyzed to see if there were significant changes. These scales were chosen because they were measured by both BRIEF versions. The BRIEF responses from both versions were collapsed for efficacy testing. Covariates included in the models were child age, child sex, parent sex, attendance and any adverse experiences.

Chapter 3: Results

The results chapter is separated into four sections. The first section describes the demographic information of the children that participated in the M3 program. The second section describes the qualitative thematic analysis that was completed to draw codes and themes from children's responses during the program. The third section presents the results from the linear mixed model that measured change on the Child Mindfulness Questionnaire from pre-intervention to post-intervention. Finally, the fourth section displays the results from the linear mixed models that were completed to analyze change in responses on the BRIEF between pre and post-intervention.

Section 1: Demographic Information

The intervention was delivered to 13 groups in total, comprising of 97 children between the ages of 3-10-years (M=6.25, SD=1.57). The demographic information collected from the parents of these children is presented in Table 4.

The majority of children participating in M3 were identified by their parents as male (n=56, 57.7%) and a large number of children were identified by their parents as female (n=33, 34.0%). A small number of children were not identified as either male or female (n=8, 8.2%).

Parents reported that the majority of children's first language was English (n=84, 88%). Other first languages learned were French/English (n=1, 1.0%), Hungarian/English (n=1, 1.0%), Mandarin (n=1, 1.0%) and Spanish/English (n=1, 1.0%). A minority of parents did not report their child's first language learned (n=9, 7.4%).

A large majority of the children that participated in M3 live in a household with their mother (n=84, 86.8%) and father (n=58, 59.8%). It was also common for the children to live with siblings: sister (n=39, 40.2%) and brother (n=37, 38.1). Additionally, parents reported that children lived with their stepfather (n=8, 8.2%), grandmother (n=7, 7.2%), stepmother (n=3, 3.1%), grandfather (n=2, 2.1%), aunt (n=2, 2.1%), aunt and cousin (n=1, 1.0%), two mothers (n=1, 1.0%), great aunt (n=1, 1.0%), and in custody with their mother (n=1, 1.0%).

Parents also reported their child's ethnic/cultural background. A majority of the children's background was white (n=63, 64.9%), as well as Aboriginal/First Nations/Metis/Inuit (n=2, 2.1%), Arab (n=2, 2.1%) and other (n=3, 3.1%). A large number of participants did not respond to this question (n=27, 27.8%).

Child attendance was recorded at the beginning of each M3 session. The majority of children attended all eight sessions (n=38, 39.2%) and a 22% only missed one session (n=22, 22.4%). A small number of children attended 4 or less sessions: (n=12, 12.3%). Some children attended 5 sessions (n=9, 9.3%) and some children attended 6 sessions (n=9, 9.3%). Finally, at the start of this program it was a nine-week program so 3 (3.1%) children attended all nine

sessions. Attendance was not completely tracked for four children (4.1%). The mean number of sessions attended was 6.6 and the median was 7.

At the beginning of each session, excluding session 1, parents reported how many times their child practiced an M3 skill since the last session with a choice between 1-3, 4-6, 7-10 or 10+. As well, they reported how many times they practiced an M3 skill with their child since the last session. In both reports, the amount of times that M3 skills were practiced throughout the week increased as the program went on.

Table 4
Demographic Characteristics

Characteristics	*n*	*%*
Child's sex		
Boys	56	57.7
Girls	33	34.0
Missing	8	8.2
First language learned		
English	84	88.6
French/English	1	1.0
Hungarian/English	1	1.0
Mandarin	1	1.0
Spanish/English	1	1.0
Missing	9	7.4
Child's living status		
Mother	84	86.6
Father	58	59.8
Stepmother	3	3.1
Stepfather	8	8.2
Grandmother	7	7.2
Grandfather	2	2.1
Sisters	39	40.2
Brothers	37	38.1
Other Relative		
Aunts	2	2.1
Aunt and Cousin	1	1.0
Two mothers	1	1.0

Great Aunt	1	1.0
Custody with mother	1	1.0
Child's ethnic/cultural background		
White	63	64.9
Aboriginal/First Nations/Metis/ Inuit	2	2.1
Arab	2	2.1
Other	3	3.1
Missing	27	27.8
Number of sessions attended		
Zero	1	1.0
One	3	3.1
Two	1	1.0
Three	3	3.1
Four	4	4.1
Five	9	9.3
Six	9	9.3
Seven	22	22.4
Eight	38	39.2
Nine	3	3.1
Missing	4	4.1

Number of times practiced (my child)	1-3x	4-6x	7-10x	10+
Session 2	33	10	3	0
Session 3	25	15	6	1
Session 4	23	22	5	2
Session 5	25	12	7	3
Session 6	24	15	9	1
Session 7	28	17	4	1
Session 8	20	24	6	1

Number of times practiced (me and my child)	1-3x	4-6x	7-10x	10+
Session 2	31	14	1	0
Session 3	27	10	5	1
Session 4	25	18	7	2
Session 5	29	13	7	2
Session 6	30	11	5	2
Session 7	28	18	5	2
Session 8	25	20	3	1

Section 2: Qualitative Thematic Analysis

To begin each M3 session, the research assistant asked the children "Did you practice (previous week's skill) since last session? When/how?" Over the 8 weeks of the M3 program, one hundred and seventeen responses were collected from the children. An inductive qualitative thematic analysis was completed to draw codes and themes from the responses. First, responses were categorized into codes of similar concepts which were then combined into more general themes. The analysis resulted in five themes: Knowledge of Concepts, Application of Skills, Application of Tools, Recognizing the Benefits of Mindfulness and Reasons Not to Engage. These five themes provide an overview of children's engagement in the M3 program.

Theme 1: Knowledge of Concepts. The first theme was composed of statements that reflect the knowledge gained throughout M3. It was made up of codes representing different areas of knowledge that are taught in the M3 program.

A central concept in M3 is mindful awareness. Throughout all eight weeks of the M3 program, children are taught about mindful awareness and different ways to practice mindful awareness at home and at school. Children's responses suggested that they were able to recognize mindful awareness in others outside of the program.

I go in my mom's room at night and it's mindful because it's quiet and dark.

I see other kids use mindfulness at school.

Through recognizing mindful awareness in others, children showed that they understood what the concept is. Within their responses, children also further explained what it meant to be mindful or mindfully aware.

Mindfulness means focusing on one thing.

I focus on lots of stuff but one thing at a time. That is mindful.

Also throughout M3, children are taught about optimism and strategies to implement it in their daily life. Responses demonstrated that children took away knowledge about optimism.

I remembered optimism is positive.

Displaying knowledge of concepts in M3 demonstrated that M3 is engaging to children as they were attentive in the program and were taking away knowledge. Not only did they conceptually understand what was being taught to them, they were able to remember it and recognize it in others.

Theme 2: Application of Skills. Theme 2 was composed of statements that children made about using the skills that they learned in M3 in their everyday life. The codes that made up this theme were focused towards how or when children used certain skills that they learned in M3, as well as the application of these skills in various situations.

There were multiple responses that displayed the numerous environments and times that children used mindfulness outside of M3.

I practice at night when it was bedtime.

Every single night I use the chime.

I practiced a lot, everywhere.

Yes, when I woke up I did breathing.

I did some breathing at school.

I practice mindfulness at random times.

When I hear the door bell, it reminds me to breathe.

Some responses also focused on the opportunity to use M3 skills anytime.

I just breathed because I felt like it.

In addition to recognizing when they practiced central M3 skills like breathing and mindfulness, some children also demonstrated that they were practicing more specific mindful awareness skills. When asked if they practiced the skill from that week, they were able to recognize the use of a specific strategy (e.g. mindful sensing).

My mommy snuggles with me to help me calm down.

I ate mindfully when eating an oreo. I could tell different things about the oreo like it was crunchy.

Went on a walk at school, really smelled the breeze.

Another central skill learned in M3 is recognizing what is going on in your brain in order to help children understand why they, or those around them, may be acting the way that they are. Children are introduced to three brain characters: the wise owl, guard dog, and huge hippo to represent three brain areas: the prefrontal cortex, amygdala and hippocampus. As well, they read the story *Puppy Mind* which explains that sometimes our minds jump from one thing to another and we can use mindful awareness to bring it back to the present. Several responses demonstrated the children understood these concepts as well as what was happening in their own brain.

Sometimes in class my mind wanders, I have a puppy mind.

I know when my watchdog goes and barks because I'm scared.

The hippo makes me remember what makes me scared.

Today I almost flipped my lid, but I calmed down.

The responses demonstrated that not only were children able to recognize what is going on in their brain, they were also able to recognize when they need to practice a learned skill in order to become more mindfully aware.

When we get angry, we take a breath.

Used breathing buddy at school to focus.

I used breathing at lunch recess because I was frustrated but then I felt good.

I use it when I am angry or frustrated.

Applying M3 skills outside of program demonstrated that M3 is engaging to children as they showed interest in the material and chose to use it when it was beneficial. The responses demonstrated that children were utilizing the learned skills outside of the M3 program.

Theme 3: Application of Tools. This theme was comprised of various responses that demonstrate that children are using the tools introduced in M3 in their daily lives. Throughout M3, children are given various tools that they are taught how to use and then encouraged to use at home or school. These tools are meant to be a fun and engaging way to remember concepts but also practice them in various environments. The codes within this theme focused on using specific tools as well as recognizing when to use these tools to practice mindful awareness. The chime is used multiple times in each session of M3 to take a mind break. The chime is rung and children are encouraged to listen to the sound, and when they can no longer hear it, focus on their breath. The chime is rung again to signal the end of each mind break. Throughout M3, children and parents are encouraged to take a mind break this way both in program and outside of program. Multiple responses demonstrated the multiple ways that children used the chime in various settings.

Every single morning my mom brings the chime in the car and we do it before school.

Every night I use the chime.

My cousin slept over and we laid down and did the chime.

As well, in the second M3 session, children are introduced to taking a mind break using an amygdala jar. An amygdala jar is a jar with sparkles and glue inside that can be shaken up. Children are encouraged to shake up their jars and then take a mind break as all of the glitter settles. They then practice this with their parents during the family mind break and are encouraged to use the tool at home. Several responses demonstrated multiple ways to use the amygdala jar outside of M3.

I used the stuffy at the hospital and made a new amygdala bottle for fidgeting.

I always use the amygdala bottle. I take it everywhere.

Along with showing the use of the chime and amygdala jar at home, children's responses suggested that they used the tools to practice mindful awareness.

I used the chime at home to relax myself.

Me and my grandma use the chime at home and breathe. It helps us calm down.

When I am mad or sad I go to my room and ring the chime.

I used it at lunch when someone made me mad. I felt good.

I shook the bottle and it made me calm.

The third theme, Application of Tools, explored the use of M3 tools outside of the program. The responses demonstrated that the M3 program is engaging to children as they were interested in using the tools introduced in M3 in their personal time. The responses also suggested that children recognized the best time to use these tools appropriately.

Theme 4: Recognizing the Benefits of Mindfulness. Theme four was composed of responses from one code. The statements within this code all suggested that children are seeing the benefits of practicing mindful awareness outside of M3. The statements appear to be reflections on how practicing makes them feel.

Makes me calm at school.

It made me feel a little bit better.

I felt calmer.

I liked breathing because it helps me.

I felt happy after (breathing break).

Children's reflections reveal that the M3 program is engaging as practicing the skills learned made children feel better, happier and calmer. This displays their interest in the program through the positive feelings M3 skills were associated with.

Theme 5: Reasons Not to Engage. This theme was comprised of responses that explain why children are not practicing the concepts learned in M3 outside of the program. While the majority of children's responses were positive, some children reported that they did not practice and were asked why.

Some responses demonstrated not having access to the proper tools. Although all children were provided with the proper tools, they may have not had them available.

No I didn't have my animals.

I can't bring my chime to school.

My parents thought the chime was irritating.

As well, a couple of responses suggested that children felt that they did not have the time to practice M3 skills outside of the program.

No I didn't have time.

My mom wouldn't let me practice because we were busy.

The fifth theme, Reasons Not To Engage, gives an explanation of reasons why children may not have engaged with the M3 program. The main reasons for disengagement were that they did not have the proper tools or they felt that there was not enough time.

Section 3: Analysis of Mindfulness Questionnaire

The mindfulness questionnaire was completed by 33 of the child participants. It was not completed by all of the M3 participants because it was added part way through the evaluation when creating new feasibility measures. Linear mixed models were created to estimate the mean change in mindfulness self-assessment scores between pre-intervention and post-intervention. Covariates controlled for were child's age and sex, parent's sex, attendance and adverse family experiences. The method used restricted maximum likelihood estimation and a Gaussian distribution. Satterthwaite's method was used to approximate the degrees of freedom.

Results of the linear mixed model are presented in Table 5. Significant improvements were found on the mindfulness questionnaire ($p<0.05$). The score on the mindfulness questionnaire improved an average of 0.9 points (95% CI 0.1, 1.5) after the intervention. Results remained similar after adjusting for child's age and sex, parent's sex, attendance and adverse family experiences (B=1.1 95% CI 0.5, 1.8).

Table 5
Mindfulness Questionnaire Linear Mixed Model

Raw Score	Baseline Mean (95%CI)	Unadjusted Mean Change (95% CI)	n	Adjust Mean Change (95% CI)	n
Mindfulness Questionnaire	2.9 (2.45, 3.4)	0.9 (0.1, 1.5)	33	1.1 (0.5, 1.8)	29

Table 6 provides a detailed summary of the linear mixed model. This summary shows that girls had lower scores on their mindfulness questionnaire (B=1.2 95% CI 1.7, 0.4), while controlling for other factors.

Table 6
Mindfulness Questionnaire Detailed Summary

Mindfulness Questionnaire	Child
Change over time	**1.1 (0.5, 1.8)**
Child's age	0.2, (-0.4, 0.2)
Child sex, girls	**-1.2 (-1.7, -0.4)**
Parent sex, female	-0.4, (-1.2, 0.4)
Attendance	0.1, (-0.4, 0.5)
Adverse Family Experiences	0.2 (-0.1, 0.5)

Bolded p<0.5

Section 4: Analysis of BRIEF Questionnaire

The BRIEF questionnaire was completed by parents of 86 participants between the ages of 3-10-years. Linear mixed models were created to estimate the mean change in BRIEF scores between pre-intervention and post-intervention. Covariates adjusted for were child's age and sex, parent's sex, attendance and adverse family experiences. The method used restricted maximum likelihood estimation and a Gaussian distribution. As well, Satterthwaite's method was used to approximate the degrees of freedom.

Results of the linear mixed model are presented in Table 7. Significant improvements were found across the Global Executive Composite, Emotional Control Index and Inhibit scale ($p<0.05$). The Global Executive Composite T-score improved an average of 3.3 points (95% CI 5.1, 1.5). The adjusted mean change (controlling for child's age and sex, parent sex, attendance and adverse family experience) was similar (B=3.3 95% CI 5.2, 1.5). The Emotional Control Index T-score improved an average of 5.4 points (95% CI 7.7, 3.3) after the intervention. The adjusted mean change was similar (B=5.2, 95% CI 7.4, 3.0). The Inhibit Scale T-score improved an average of 3.4 points (95% CI 5.2, 1.7) after the intervention. The adjusted mean change was similar (B=3.6, 95% CI 5.4, 1.8).

Table 7
BRIEF Linear Mixed Model

BRIEF T score	Baseline Mean (95%CI)	Unadjusted Mean Change (95% CI)	n	Adjust Mean Change (95% CI)	n
Global Executive Composite	67.6 (65.1, 70.0)	-3.3 (-5.1, -1.5)	86	-3.3 (-5.2, -1.5)	77
Emotional Control	70.2 (67.8, 72.7)	-5.4 (-7.7, -3.3)	86	-5.2 (-7.4, -3.0)	77
Inhibit	66.1 (63.6, 68.5)	-3.4 (-5.2, -1.7)	86	-3.6 (-5.4, -1.8)	77

Chapter 4: Discussion

The purpose of this study was to assess specific areas of feasibility of the M3 program. This was done through analyzing three different outcome measures. First, children's responses throughout sessions to the question "Did you practice (previous week's skill) since last session? When/how?" were analyzed using a qualitative thematic analysis. Then, linear models were created to analyze changes in responses in the mindfulness questionnaire from pre-post intervention. Finally, linear models were created to analyze the pre-post intervention data collected from the children's parents through the BRIEF. Specifically, change in children's T-score on the Global Executive Composite, Emotion Control Index and Inhibit Scale were analyzed.

The above data demonstrates the feasibility of the M3 program within two domains. The qualitative data suggests that the program is acceptable as children find the program engaging. The quantitative data suggests that the program is effective as children are showing improvements in both mindfulness knowledge and parent rated self-regulation after the program.

This chapter will begin with a discussion of the results from the qualitative and quantitative analyses and will continue into exploring the way these findings compare with previous literature. Finally, the limitations and future directions will be discussed.

Program Acceptability

The primary feasibility question of this study: "Do children find M3 engaging?" was used to explore the acceptability of the M3 program. To answer this question, children's responses to the question "Did you practice (previous week's skill) since last session? When/how?" were used. This question was chosen based on the definition of engagement: "attending to draw favourable attention or interest" (Merriam-Webster, n.d.). We believed that responses to this question would demonstrate whether children were choosing to pay attention to the material in the program and whether they were interested in the tools and skills that they were learning.

Children's responses to this question were analyzed using thematic analysis. From this analysis, five themes were composed to summarize children's responses: Knowledge of Concepts, Application of Skills, Application of Tools, Recognizing the Benefits of Mindfulness and Reasons Not To Engage. The majority of these themes demonstrate ways that children engaged with the program.

Knowledge of Concepts. The responses in the theme, Knowledge of Concepts, demonstrate that children learned information from the M3 program. The responses suggest that they took away knowledge in several areas. For example, the central concept in the M3 program is mindful awareness. This concept is introduced in the first week of the program and explored throughout each following week. Children learn several ways to practice mindful awareness such as managing their thoughts, regulating their emotions, taking the perspective of others and gratitude. The responses in this theme suggest children thoroughly understood these concepts.

First, the responses suggest that children are able to recall several definitions of mindful awareness. This demonstrates that not only are participants paying attention to the information that they are gaining throughout the program, they are retaining it from week to week. Retaining

the information suggests that children may be showing favourable interest to the material and engaging in it.

Other responses within the Knowledge of Concepts theme suggest that children are recognizing mindful awareness practice in others outside of the group setting. Responses include children pointing out when others around them are practicing mindful awareness in several settings. Such responses demonstrate that not only are children remembering what mindful awareness is, they are also able to recognize how people may practice the skill differently, suggesting they also understand the flexibility in mindful awareness. These responses suggest that children are showing interest in the topic as they are seeking the behaviour out and noticing it in others around them.

The mindfulness questionnaire was chosen to be included in the evaluation as the M3 program is a mindfulness-based program. Therefore, it is important to know whether children are gaining mindfulness knowledge from attending the program.

The mindfulness questionnaire (See Appendix H) asked children six questions regarding their knowledge in different areas of mindfulness. Only the first five items on this questionnaire were analyzed as the sixth question collects qualitative data. The items on this questionnaire were related to central mindfulness-based concepts that were taught in the program to examine if children understood the program concepts but were also able to retain the knowledge until the completion of the program.

Results from the linear mixed model analyzing change on this measure from pre to post-intervention demonstrated that children scored significantly higher on this questionnaire after the program. This finding suggests that children gained mindfulness knowledge from the M3

program. As the M3 program is a mindfulness program and taught the mindfulness skills that were asked about in the questionnaire, this was expected to be found.

This prediction was supported by results from other mindfulness programs for children and families. For example, a meta-analysis of randomized control trials of mindfulness-based interventions for children completed by Dunning and colleagues (2019) reported that increases in mindfulness knowledge were found after mindfulness interventions.

When evaluating a concurrent mindfulness program for children with ADHD and their parents qualitatively, Haydicky and colleagues (2017) found that children reported having more self-awareness and present-moment awareness after the program. Through children's reports it appeared they seemed to better understand mindfulness and have developed a deeper value of the process after the program. This is further support for children's ability to grasp mindfulness knowledge and bring skills into their day-to-day life.

Furthermore, when evaluating a concurrent mindfulness program implemented with youth with ASD and their parents, children's mindfulness knowledge was measured through a standardized, 10-item self-assessment entitled the Child and Adolescent Mindfulness Measure (Salem-Guirgis et al., 2019). There were no significant changes in children's mindfulness knowledge from before the mindfulness program to after the mindfulness program. However, the sample of this study was different than the current study. Salem-Guirgis and colleagues (2019) suggest that this null finding may be explained by the population of this study, with the researchers reporting that the measure may not be the most effective in evaluating children with ASD or that children with ASD may struggle to learn mindfulness skills from their program. Therefore, the difference in findings between this study and the current study may be explained by the differing populations.

Overall, some literature has found that mindfulness programming is able to teach mindfulness knowledge and skills to children. The program evaluated in the current study, M3, appears to increase children's mindfulness knowledge. This study provides promising preliminary evidence that children gain mindfulness knowledge from concurrent mindfulness programming in a community setting.

Application of Skills. The responses within the theme, Application of Skills, demonstrate the multiple ways that children use the skills that they learn in M3 outside of the program. Several responses included the numerous times and locations that children practice their skills. These included locations like in their home and at school and times like before bedtime, when they're bored, when the doorbell rings and at random times. The report from the children that they are practicing at many times and in different locations demonstrates their engagement and interest in the program. It seems that they enjoy using the skills that they are taught, if they are choosing to practice them outside of the program.

Children were able to describe specifically what mindful awareness skill they were using outside of the program. For example, they were able to describe when they used mindful sensing as opposed to mindful movement. This is another demonstration of children showing interest in the skills but also confirms their knowledge of the several ways to practice mindful awareness.

One skill that is central to M3 is understanding what is going on in your own and in other's brains. This is important for children to learn as it helps them to understand why them or those around them may be acting a certain way. Children's responses suggest that they understand the different parts of their brain and how they work. Furthermore, it seems that they are able to recognize in themselves when each part of their brain is working. Having the ability

to understand what is going inside of their brain has the potential to help children make the proper choices on how to think or act

Understanding children's brains also helps them to know when to use their mindful awareness skills. For example, in M3 children are taught that when their guard dog or amygdala is going off and they are angry and frustrated, it is a good time to practice mindful awareness to help themselves calm down. Children demonstrated knowledge of this concept by sharing that they use their M3 skills when they are angry or frustrated outside of the program. In this sharing, they demonstrated that they know when the right times are to use their skills and they are choosing to use them then. Children choosing to use the learned skills outside of M3 suggests that they are engaged with the material.

Application of Tools. Responses in this theme demonstrate the multiple times and ways that children use the tools that they are introduced to in M3 in their lives. There were two tools that came up multiple times in children's responses: the chime and the amygdala jar. Both of these tools are central to the M3 program and are used to practice mindful awareness. Children reported using these tools at numerous times throughout the day such as in the morning, at night and at bedtime. They also reported using their tools in various locations like in the car, at the hospital and at school. Their engagement with the tools demonstrates their interest in the program and their choice to use the program outside of program time.

Responses within this theme also suggest that children are using the tools for the purpose that they are meant for. Children reported that they were using the tools to relax themselves, to breath, and to feel calm. These are exactly the reasons that these tools are introduced in the M3 program. As well, they are recognizing the right time to use them, and successfully using them to

feel better. This is important because the success of the tools will encourage continued use by children.

Recognizing the Benefits of Mindfulness. Responses within the theme, Recognizing the Benefits of Mindfulness, suggest that children are enjoying using the mindful awareness skills and strategies that they learn in M3. Reponses in this theme included that mindful awareness makes children feel calmer, better and happier. In a feasibility study, such findings are important as participants need to enjoy and see purpose in what they are learning in order for them to continue to use the skills over time (Bowen et al., 2009).

These responses are similar to children's responses to another community-based mindfulness program (Coholic et al., 2011). In the current study and the study by Coholic and colleagues (2011), children recognized the positive feelings that the concepts learned in group brought them. Coholic and colleagues (2011) suggest that children enjoying themselves allowed them to better learn self-regulation skills and strategies. Therefore, children's enjoyment of mindful awareness skills may have facilitated their growth in self-regulation in the current study. Furthermore, recognizing the benefits that mindful awareness has on them could potentially explain why we are seeing such a strong engagement with M3 skills and tools. This will need to be further explored in future studies.

An Acceptable Mindfulness Program

The above four themes and improvements seen on the mindfulness questionnaire suggest that children find the M3 program engaging. The results demonstrate that children are taking away knowledge from the program, specifically mindfulness knowledge, as well as choosing to use the skills and tools introduced in M3 outside of the program. It also appears that children may be feeling better, happier, and calmer when using these skills.

The evaluation of the M3 program is the first to the researcher's knowledge that evaluated a concurrent mindfulness program in a community setting. However, based on the literature from mindfulness programs for children, it was expected that this program would be acceptable for children.

First, Burke (2011) completed a literature review assessing the feasibility of mindfulness interventions for children. The papers included in this review used quantitative measures to measure children's characteristics and abilities. It was concluded that there was a reasonable base of support for the acceptability of mindfulness-based approaches for children. The results of this study are different from the current study as they used quantitative outcomes to determine acceptability and there were no concurrent programs included. However, the findings do support the current study findings that mindfulness programming may be engaging to children.

Furthermore, Coholic and colleagues (2011) measured the acceptability of an art-based mindfulness program for children from a local mental health centre and child protection agency. The data collected in this study differed from the current study as they completed post-group interviews with the children. However, they reached a similar conclusion to the current study, that mindfulness programs are acceptable for children. They also, like the current study, found that children found the program fun and felt better after the program. Although the program in this study was not concurrent, it was run in a similar study setting to the current study so suggests the potential of acceptable mindfulness programming for children in a community setting.

The current study found M3 to be an acceptable program for children as they were highly engaged with the program and gained mindfulness knowledge. In relation to the Adapted Theory of Change Model for Family Resiliency, it appears that the M3 intervention is a viable way in

which children learn concepts of mindful awareness such as managing their thoughts and regulating their behaviours, in order to potentially increase their well-being. Improvement in child well-being could potentially impact other areas of the model, as well as overall family resiliency.

Adjustments to the M3 Program

Although the majority of children's responses suggest that they were highly engaged with the M3 program, few responses suggested that children were not engaging with M3. These responses made up the final theme, Reasons Not to Engage.

Reasons Not to Engage. Responses in this theme explain reasons why children are not using the concepts taught in M3 outside of the program. There were two main reasons that were reported by multiple children. The first is that they did not have time to practice the concepts. Children reported that they were too busy or that they were doing other things. In the M3 program, children are taught and reminded that the concepts learned in M3 can be integrated into their everyday life so that they do not necessarily need to make extra time for them. The importance of finding small moments where mindful awareness can fit into their lives is continuously emphasized. However, there is potential that even more emphasis needs to be put on specific ways to use skills outside of M3. For example, facilitators could support each child in picking a way to practice their mindful awareness skill each week. As well, it may be difficult for young children to practice M3 skills without the support of their parents. Therefore, it may be beneficial to continuously emphasize the importance of practice, even in small moments, to parents in their session.

The second reason that practice did not occur was that children reported that they did not have the tools that they needed to practice. For example, children reported that they did not have

their breathing buddies or chime that they wanted to practice with. This reason is of interest because all children that participate in the M3 program are provided with a program kit that contains all of the items used in the M3 program. Therefore, children should have both a breathing buddy and chime that they can use at home. However, facilitators may need to check in with children about the location of their tools in order to remind them to interact with them. As well, explicitly reminding children and their parents what tools they need to practice that week as well as different ways to use that specific tool may be beneficial. This could incorporate suggesting other ways to practice strategies if a specific tool is not available.

Preliminary Evaluation of Participant Response to Intervention

The secondary feasibility question of this study: "Does the M3 program show promise for effectiveness in improving self-regulation in children?" was used to explore the preliminary outcomes of the M3 program. The BRIEF questionnaire was included in this evaluation as teaching self-regulation skills to families is a primary objective of the M3 program. Therefore, if the program is successful, children should show an increase in self-regulation skills after the program. As well, not all children in M3 were able to complete the mindfulness questionnaire so the BRIEF data was evaluated to explore outcomes for a larger number of children.

The BRIEF is a parent completed measures that assesses children's level of self-regulation skills and abilities. Results from the linear mixed model completed on the BRIEF T-scores demonstrate that children had higher levels of self-regulation abilities after the M3 program. Children's scores improved on the Global Executive Composite, Emotional Control Index, and Inhibit Scale.

The Global Executive Composite includes all of the scales on the BRIEF. This suggests that after the M3 program, parents observed children to have improved executive functioning,

including self-regulation. There is potential that children gained these self-regulation skills from the M3 program as the program teaches several mindful awareness strategies that would support improvement in these areas.

Studies evaluating children and concurrent mindfulness programming, similar to the current study, have also seen improvements in self-regulation after the intervention. A recent meta-analysis of randomized controlled trials of mindfulness-based interventions for children concluded that interventions led to an increase in children's self-regulation (Dunning et al., 2019). Interestingly, Dunning and colleagues (2019) found that this increase in children's self-regulation was moderated by their age. This was not found in the current study, however, the participants in the current study did not have as wide of an age range as the meta-analysis so the moderation may have been missed.

In concurrent mindfulness programming, Haydicky and colleagues (2017) found that a concurrent mindfulness program for children and their parents had an impact on children's self-regulation in different areas. First, they reported improvements in children's attention regulation after the intervention. Children reported that they were better able to focus their attention on a single experience or sensation. As well, children reported improvements in their behaviour regulation after the intervention, feeling as if they had more control over their own behaviour. These findings are similar to the current study and further support the finding that mindfulness programming may be helpful in increasing children's self-regulation. The current study adds to these findings suggesting that parents may see these changes along with children.

The Emotional Control Index on the BRIEF measures emotional expression as well as children's ability to regulate emotional responses (Giaia et al., 2015). Improvement on this scale suggests that children are gaining emotion regulation skills. Throughout M3, children are taught

several strategies to increase their emotional awareness and regulation. Therefore, the increase in emotion regulation after the program suggests that these skills may be helping the children.

Studies evaluating concurrent mindfulness programming, similar to the current study, have also seen improvements in emotion regulation after the intervention. Based on this literature, it was predicted that the children would have higher emotion regulation skills after the M3 program.

Salem- Guirgis and colleagues (2019) evaluated a concurrent mindfulness program run for youth with ASD and their parents. Parents reported that children improved in emotion regulation after the program. In this study, emotion regulation was measured using several measures of self-regulation: The Ruminative Response Scale, The Emotion Regulation Checklist and the Emotion Regulation Questionnaire. Although this study evaluated mindfulness programming in a clinical population as well as used different measures than the current study, it demonstrates further support for mindfulness programming positively impacting children's emotion regulation.

The above study and the current study measured emotion regulation ability from a parent's perspective of their child. There is also literature supporting that this improvement in self-regulation is seen from a child perspective as well. Haydicky and colleagues (2017) ran a concurrent mindfulness program for older youth (13-18) with ADHD and found that children reported feeling stronger at implementing emotion regulation strategies after the intervention. As well, they felt as if they had reduced emotional reactivity. This finding, along with the current findings and that of Salem-Guirgis and colleagues (2019), suggest that emotion regulation improves after mindfulness programming with youth.

The finding that children had increased emotion regulation after the M3 program is promising. Children that struggle with emotion regulation are more likely to develop psychological disorders such as anxiety, depression and bipolar disorder (Dvir et al., 2014). Therefore, the preliminary results on the BRIEF suggest that M3 may be decreasing the likelihood of developing negative outcomes for children.

Finally, the Inhibit Scale on the BRIEF assesses inhibitory control and impulsivity (Giaia et al., 2015). It assesses children's ability to resist their impulses and to control and stop behaviour at an appropriate time. This could potentially impact their social intrusiveness or personal safety. Previous studies evaluating concurrent mindfulness programming similar to the current study have also seen improvements in inhibitory behaviours after the intervention. Based on these findings, it was predicted that children would show improvements on this scale after the M3 program.

In the study by Haydicky and colleagues (2017), participants reported that they were better able to reduce their emotional reactivity after the intervention. As well, they reported that they were able to reduce their intensity in conflicts as well as the duration of the conflicts after the intervention. These findings suggest that children may gain inhibitory skills through mindfulness programming. The findings from the current study support this finding, adding to the literature that parents also see this improvement in their children after mindfulness programming.

As teaching self-regulation skills to families is a primary objective in M3, seeing the increase in children's self-regulation abilities after the intervention suggests that parents see the M3 program as helpful to their child. This is important because children are referred to the M3 program when they are struggling with self-regulation. With the negative consequences affiliated

with low self-regulation such as poor psychological, academic and social outcomes, it is crucial that these children are supported in increasing their self-regulation abilities. The preliminary results from the BRIEF demonstrate promise that the M3 program may be effective for children and their families and the potential that this program can improve children's outcomes.

Overall, in assessing the fit of M3 within the Adapted Applied Theory of Change model for Family Resiliency, it appears the program is acceptable to children, that they are learning concepts and skills and applying them to their life. Further, this study indicates that M3 has the potential to directly impact child self-regulation. Impacting children's self-regulation can improve their overall well-being and in turn, impact family resiliency. In the future, M3 will be evaluated with all aspects of the model to explore the impact of the program on all areas related to family resiliency.

Limitations

A limitation of this study is that there was not a matched comparison group included as part of the study design. Therefore, it cannot be claimed that the improvements in mindfulness knowledge and self-regulation skills found in this study are due to participation in the M3 program. However, the pre-post results demonstrate positive preliminary evidence of the program that will be further explored through more rigorous research methods.

Additionally, the conclusions that can be drawn from this efficacy testing are limited because only parent report of change in children's self-regulation was collected. Throughout the M3 program, a decrease in parent stress was found which could potentially explain why they saw their child's behaviour as more favourable. It would be useful to collect other measures of children's self-regulation such as teacher report and independent observations to strengthen this finding.

Furthermore, there are a couple of limitations of this study that are related to the data collection process. First of all, children were asked the question about practicing in front of the M3 program facilitators. This could have potentially led to demand bias as the children may have answered how the facilitator wanted them to, not honestly. Additionally, in regard to the BRIEF questionnaire, the parent that is a part of the M3 program is the parent that completed the measure. This could also have led to bias in the parent's responses as they know what is being taught in the program as well as the goals of the program.

Finally, in reviewing the literature that supported the development of this study, it was difficult to compare mindfulness programs with the current program. Some of the mindfulness program reviewed contained other components such a cognitive behavioural therapy or acceptance commitment therapy. Therefore, it was difficult to know the contribution of the mindfulness components of the program to the results and therefore, compare to the current study. It would be useful for future research studies to include the amount of mindfulness in their programs in order to make comparisons and develop future programs.

Future Directions

This study supports the feasibility of the M3 program for children in a community setting. It is the first evaluation known by the researcher, to find a feasible, community concurrent mindfulness program for families. This study explored feasibility from several different perspectives, using data collected from both the parents as well as the children that participated in M3. The findings suggest that both children and their parents find the M3 program helpful to children.

The conclusions of the current study along with the finding that the M3 program is feasible from a parent perspective (Pacholec, 2020), demonstrate the promise of the M3 program

with larger and varying populations. Often, feasibility studies are conducted prior to randomized control trails, to improve the intervention effectiveness (Orsmond & Cohn, 2015). With the success of M3 in two separate feasibility studies, next steps could include using more rigorous research methods to evaluate outcomes of the program, such as a randomized control trial.

As well, this study focused on a specific population of children that struggle with self-regulation challenges. The population was homogenous, with several of the participants being white, with English as their first language. Therefore, feasibility of the M3 program with other populations could be evaluated to determine the generalizability of the program to different backgrounds and challenges.

Finally, the popularity of mindfulness programming has surpassed the research that supports the programming. Current research demonstrates the possibility of experiencing adverse events when practicing mindful awareness and the importance of exploring such events (Wong, Chan, Zhang, Lee & Tsoi, 2018). Future studies should evaluate if any such events occur within the M3 program in order to better understand the impact of the intervention on individuals and families.

Conclusion

This study contributes to the scant literature on community-based mindfulness interventions for both children and their parents. The findings support the feasibility of M3 from a child's perspective and from parent-report of their child's self-regulatory behavior. The study shows strong support for the acceptability of the program as well as demonstrates promising preliminary findings for targeted outcomes.

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Appendices

Appendix A: Codes By Theme

Theme 1: Knowledge of Concepts

- Knowledge of mindfulness
- Knowledge surrounding optimism

Theme 2: Application of Skills

- How/when they practice
- How/when they used breathing
- Using mindful sensing
- Using mindful movement
- Using perspective taking
- Application of breathing
- Recognizing what is going on in their brain

Theme 3: Application of Tools

- Use of chime
- Use of tools
- Use of amygdala jar
- Application of chime
- Application of amygdala jar

Theme 4: Recognizing the Benefits of Mindfulness

- Recognizing the benefits of mindfulness

Theme 5: Reasons Not To Engage

- Reasons not to engage

Appendix B: Meaning Units By Code

Theme 1: Knowledge of Concepts

Knowledge of mindfulness
I go in my moms room at night and its mindful because it's quiet and dark
Mindfulness means focusing on one thing
I see other kids use mindfulness at school
My dad has a chime on his phone, we use it to be mindful
I focus on lots of stuff but one thing at a time. That is mindful

Knowledge surrounding optimism
I remembered optimism is positive

Theme 2: Application of Skills

How/when they practice
I did it yesterday!
I practiced breathing at night when it was bedtime
Every single night I use the chime
I do it every day at night
I do it before bed
In my bed with mom and dad
Yes - in my bed
Yes, when I woke up I did breathing - my tummy moved up and down in bed
In my bedroom with my sister
At home I use my big dog for breathing on the couch. Mom uses the chair
During the day
I did a lot at the gym
At school at break
I did some breathing at school
We always do it with my class
I do mindfulness at school
I used it at night and at school
I practiced my mindfulness at random times
I practiced a lot, everywhere
I practiced whenever I needed to
I practice everyday with an app
I use headspace (app)
When I'm bored
I play Xbox
I practice in my bedroom (I just lie down on my bed and close my eyes. I dream of fun)

How/when they used breathing
I did a breathing break twice a day
We breathe in with the ball

I was doing a breathing break
I use the breathing ball to breathe
When I hear the door bell it reminds me to breathe
I did a breathing break at home with my stuffy
I usually don't share with my brother but this week I shared my stuffy
I used a breathing buddy on my tummy
I breathed with my teddy

Using mindful sensing
At school we learned about senses that is mindfulness
My mommy snuggles with me to help me calm down
I ate mindfully when eating an oreo. I could tell different things about the oreo like it was crunchy
Went on a walk at school, I really smelled the breeze

Using mindful movement
We practice breathing games
I like the games
I balanced on my pool floatie to see how long I could hold it
I did a mindful walk
I checked it after my teacher told me she was getting surgery (heart rate)
I did it at gym class and it was going very fast (heart rate)
I did exercise…running
I blew bubbles. Huge bubbles. Huge!

Using perspective taking
When something is hard to do at school (practice perspective taking)
When my brother was hurting me (practice perspective taking)

Application of breathing
When my brother was bugging me
Mindbreaks at school - felt not good after
I just breathed because I felt like it
When we get angry we take a breath
I probably could've practiced because I had a bad day at school
Used breathing buddy at school to focus
Tried breathing after outburst at school!
I used breathing at lunch recess because I was frustrated but then I felt good
My dad made me do a mindful moment but I don't know why
I use it when I'm angry and frustrated
Wanted to try like scaredy squirrel
I don't get angry at home so I don't need to breathe

Recognizing what is going on in their brain
I knew about the watch dog already because my mom taught me
The PFC is your lid!

I have to be nice to my puppy mind
Sometimes in class my mind wanders. I have a puppy mind
I know when my watchdog goes and barks because I'm scared
The hippo makes me remember what makes me scared
Today I almost flipped my lid, but I calmed down

Theme 3: Application of Tools

Use of chime
We're getting back into the chime
I did the chime, the ball, and the books
Every single morning my mom brings the chime in the car and we do it before school
I used the chime and breathed
I have been using the pinwheel and the chime before bed
What do you do with the chime?
Mom did the chime
Been using the chime and the ball thingy
Every night I get to use the chime
I did the bell two time
My cousin slept over and we laid down and did the chime
I like using my chime at home

Use of tools
Use dragon the most, I Spy bottle the least
I've used all my tools

Use of amygdala jar
I used stuffy at the hospital and made a new amygdala bottle for fidgeting
I always use my amygdala bottle. I take it everywhere

Application of chime
I used the chime at home to relax myself
Me and my grandma use the chime at home and breathe. It helps us calm down
When I'm mad or sad I go to my room and ring the chime
I practice when grandma and grandpa were fighting
I didn't get upset over the break so I didn't need my chime
My mom sends it to school for when I'm mad
Chime in bed with mom and dog - made me tired

Application of amygdala jar
Got mad at my brother so I used my amygdala bottle and breathed
I used it at lunch when someone made me mad, I felt good (amygdala jar)
I bring my amygdala jar to school and use it when I'm mad/sad
I shook the bottle and it made me calm

Theme 4: Recognizing the Benefits of Mindfulness

Recognizing the benefits of Mindfulness
Makes me calm at school
My dog makes me calm
I felt happy
I felt better
I felt calmer
It helps
I liked breathing because it helps me
It made me feel a little bit better
I felt happy after (breathing break)

Theme 5: Reasons Not to Engage

Reasons not to engage
No
I forgot because my mom is in charge of this
No - didn't have time
No I don't have any animals
I can't bring my chime to school
I don't have one
Same like always, I was busy being sad because I was dog sitting
My parents thought the chime was irritating
My mom wouldn't let me practice because we were busy

Appendix C: Research Coordinator Introduction to M3 Script

Hello, may I please speak with (*insert potential participant name here*).

[If potential participant is not home, ask if there is a better time to call. Do not leave a message as it may be a confidential matter you are calling about that may not be apparent to you].

This is *[name of caller]* and I'm calling to speak to you about a study being conducted by Dr. Claire Crooks and her colleague, Dr. Karen Bax at Western University about the child and parent group called MindUP that you have signed up for through Merrymount. Your name was provided to us by *[name of Merrymount staff]*. Is this an okay time to tell you a bit more about the study and see if you are interested in participating?

[If potential participant says, no, then ask when would be a good time to call back].

The purpose of this study is to look at whether and how the MindUP™ program can improve children's social and emotional skills and the ability for parents to support these skills in their families. There is very little research available that describes how this program may support the social and emotional wellbeing of both children and parents in a community group setting.

Appendix D: Research Coordinator Voluntary Research Script

I am calling to see if you would be interested in learning more about the study and potentially being a participant in the study. If you do, I can set up a time for you and your child to meet me at Merrymount to explain the study, and if you are comfortable at that time, have you complete some surveys and have your child participate in some activities with the researcher. Or if, after hearing more about the study, you would like more time to consider if you would like to participate in the study, that is fine too. You can participate in the MindUP group regardless of whether you participate in the study.

[if potential participant says no, they would NOT like to meet to learn more, then say thank you for your time, have a good day]

[if potential participant says they would like to meet to learn more]:

There are some possible times I have for us to meet at Merrymount:

[Indicate dates, times, and locations available]. Which would work best for you and your family?

[Write down chosen date, time, and location]

Would you like a reminder call about the appointment the day before?

[Check off yes or no}

Do you have any questions? All right, I will see you on [*Restate date and location*]. Thank you so much for taking this call and have a great day. Goodbye. *[End of call]*

Appendix E: Parent Consent Form

CONSENT LETTER FOR PARENTS/GUARDIANS

Study Title: MindUP for Young Children

September 2019

Invitation to Participate

I am a professor in the Faculty of Education at Western University who is conducting a research project with my colleague Dr. Karen Bax titled "MindUP for Young Children". I am writing to invite you to be part of it.

I am evaluating a program called Making Mindfulness Matter or M3 that your community service provider, Merrymount, is implementing in a group format. M3 is an educator-led curriculum designed to enhance children's social skills (e.g., taking the point of view of another person), support their engagement in prosocial and responsible behavior (e.g., sharing, helping), increase their focus and attention, and support their engagement in emotional self-regulation (e.g., helping them learn how to manage anger, excitement, and frustration). The Making Mindfulness Matter program was adapted from the school-based MindUP program and includes a child version and a parent version The purpose of this study is to examine whether and how the implementation of the M3 program can enhance children's social skills along with the ability for parents to support these skills in a family environment. There is very little research available that describes how this program may support the social and emotional wellbeing of both children and parents in a community group setting. This letter outlines the procedures for the study. If you agree to participate, please sign the consent form at the end of this letter.

I am seeking your permission to have you complete five questionnaires: three about your child, one about you as a parent, and a demographic questionnaire. The demographic questionnaire is to be completed prior to starting the M3 group. The Adverse Family Experiences questionnaire is to be completed after completion of the group. The Adverse Family Experiences questionnaire asks yes/no questions about possible adversity that your child might have experienced. The other three questionnaires are to be completed at two separate times: before the M3 group is implemented and after you and your child have been part of the M3 group. The Behavioural Assessment Scale for Children, Third Edition (BASC-3), asks questions about your child's behavior and feelings. The Behaviour Rating Inventory of Executive Functioning (BRIEF-P) is a questionnaire that asks about your child's behaviours related to executive functions (e.g., problem solving, planning, and reasoning). The last questionnaire is called the Parent Stress Index (PSI), which asks about possible sources and types of stress that you as a parent may experience.

We will also be asking parents some questions during each group session to gather additional feedback about the Making Mindfulness Matter program and your experience with mindfulness. Some examples include, “Did you or your child practice mindful breathing since our last session?” and “Were there any parts of the session you felt were confusing?” Responses to these informal questions will be written down without any identifying information (e.g., name).

This study will take place over eight weekly sessions. We request that you attend at least 6 of the 8 weekly group sessions. In the first session of the M3 group, you will be asked to complete the questionnaires mentioned earlier through paper and pencil format. The questionnaires you complete will not contain any personal information (e.g., name, birthdate) that could be used to identify you or your child. At the end of the study, you will be asked to complete three of those questionnaires again; however, if you have missed more than 2 weekly group sessions, we may not be able to use your responses.

We are asking for your consent to participate in a parent follow-up questionnaire, three months after the end of the program to see whether you have continued to practice the skills you learned and whether you found the group was a benefit to you and your child. If you agree to participate in the follow up questionnaire, you will receive an invitation with the online survey link either through email or mail, depending on your preferred method of contact 3 months after completing the program. You can change your mind at any time and decline to fill out the follow-up questions. To ensure anonymity of your responses, you will not be asked to provide any identifying information. If you choose to complete the questionnaire, your survey responses will be collected through a secure online survey platform called Qualtrics. Qualtrics uses encryption technology and restricted access authorizations to protect all data collected. In addition, Western’s Qualtrics server is in Ireland, where privacy standards are maintained under the European Union safe harbour framework. The data will then be exported from Qualtrics and securely stored on Western University's server. Once the questionnaire is submitted online, responses cannot be withdrawn. If you choose to exit the survey prior to submission, any responses entered prior to withdrawal will not be stored.

I am seeking your permission to have your child participate in some activities before and after participating in the M3 program. At the first and last session of the program the children will be asked to complete a feeling face questionnaire in a paper and pencil format about topics discussed in the group such as how our brain works when we are upset and what mindfulness is. The questions will be read to the children by the researcher and the children will then respond with the feeling face that best represents how they feel.

Your identity and that of your child will be kept confidential in any reports or presentations that result from the study. According to Western University’s Research Ethics policy, collected information will be kept for 5 years and then the computer file will be permanently deleted and the consent forms in the file will be shredded. Representatives of the University of Western Ontario Non-Medical Research Ethics Board may require access to your study-related records to monitor the conduct of the research.

The risks associated with participation in the present study are low. If you experience stress while participating in the present study, you may find it beneficial to access this website describing strategies for handling stress: https://childdevelopmentinfo.com/family-

living/stress/#.WJtAdG8rK70. A benefit of this study is that it provides an opportunity to have a greater understanding of the potential benefits of mindful awareness for both you and your child.

Participation in this project evaluation is voluntary and you may withdraw your participation and/or your child's at any time without any negative consequences or having to leave the M3 group. Your child's participation is also voluntary, and they may choose not to complete the feeling faces questions at any time, without consequences or having to leave the M3 group. If you decide to withdraw your own and/or child's participation from the study, you will have the choice of whether the information that was collected prior to you leaving can still be used in the study. However, no new information will be collected without your permission. You have the right to not answer individual questions about you and your child. You do not waive any legal rights by signing this consent form.

Should you choose to participate in filling out the measures at the start of the study, you will receive a $25.00 gift card. You will receive these gift cards even if you choose to not complete the whole task. Should you choose to also participate in filling out the measures at the end of the study, you will receive an additional $25.00 gift card. You will also receive a $10 electronic gift card via email for participating in the online follow-up survey 3 months post-program.

If you would like more information about this project, or your role in it, please contact me by phone [redacted] or by email [redacted]. Concerns about your participation in this study can be forwarded to Western University's Office of Research Ethics at [redacted], [redacted]

Please complete the attached form on Page 5 and return it to one of the facilitators, even if you do not wish for your child and/or yourself to participate in this study.

Sincerely,

Claire Crooks

Study Title: MindUP for Young Children

I have read the attached Letter of Information regarding the study entitled, "MindUP for Young Children". All questions have been answered to my satisfaction. I have kept a copy of the letter describing the study and this permission slip.

□□**I agree that <u>both myself and my child</u> will participate in the study "MindUP for Young Children".**

□□**I agree that <u>just myself</u> will participate in the study, "MindUP for Young Children".**

□□**I agree that <u>just my child</u> will participate in the study, "MindUP for Young Children".**

□□**<u>I do not agree for either myself or my child</u> to participate in the study, "MindUP for Young Children".**

□□ **I agree to participate in the 3 month follow-up survey about the group**
I prefer that you contact me this way (e-mail or mailing address):

_____

Parent's Signature: _____

Date: _____

PLEASE KEEP A COPY OF THE LETTER (ABOVE) FOR YOUR RECORDS

Study Title: MindUP for Young Children

I have read the attached Letter of Information regarding the study entitled, "MindUP for Young Children". All questions have been answered to my satisfaction. I have kept a copy of the letter describing the study and this permission slip.

☐☐**I agree that <u>both myself and my child</u> will participate in the study "MindUP for Young Children".**

☐☐**I agree that <u>just myself</u> will participate in the study, "MindUP for Young Children".**

☐☐**I agree that <u>just my child</u> will participate in the study, "MindUP for Young Children".**

☐☐**<u>I do not agree for either myself or my child</u> to participate in the study, "MindUP for Young Children".**

☐☐ **I agree to participate in the 3 month follow-up survey about the group**
I prefer that you contact me this way (e-mail or mailing address):

_____

Parent's Signature: _____

Date: _____

My child's name is (print):_____

Their birth YEAR is (print): _____

Their birth MONTH is (print):_____

Please provide an email or permanent address to receive a summary of results. Address or

Email:

Appendix F: Child Assent Form

INFORMATION LETTER FOR CHILDREN

Study Title: MindUP for Young Children

Assent Letter:

1. **Why are you here?**
   You will soon be participating in a group called MindUP. We are doing a research study about the MindUP group, to learn more about children, their families, and how mindful awareness effects their wellbeing. A research study is a way to learn more about people. Your parent agreed to be part of the study and now we are also asking you if you would like to participate.

2. **What will happen to you?**
   If you want to be in the study, the following things will happen:
   a) We will ask you questions on a piece of paper with feeling faces about what you know and what you've learned from the group.
   b) You will do this at the first week of the group and again at the last week of group.
   c) The researcher will put your answers into a computer. All of your answers will be kept private.

3. **Will it be hard?**
   No, you just need to circle the feeling face that best shows how you feel. The questions will be read to you by the researcher.

4. **How will this study help?**
   A benefit means that something good happens to you. Some benefits of this study might be that we learn how MindUP can help children and families feel better. When we are finished the study, we will write a report about what we have learned. This report will not include your name, or that you were in the study. Your name and all of your answers will be kept private.

5. **What if you have any questions?**
   You can ask questions at any time- now or later. You can ask the researchers questions, or talk to your parents at any time.

6. **Do you have to be in this study?**

You do not have to be part of the study if you do not want to be, and you can still participate in the group. If you agree to be part of the study and want to stop at any time, you may.

Do you have any questions?

Study Title: MindUP for Young Children

ASSENT FORM FOR CHILDREN

I want to be part of this study.

☐☐**Yes**
☐☐**No**

Name of Child (please print): _____

Date: _____

Signature of Child: _____

Child's Birthdate: _____

Name of Person(s) Obtaining Assent (please print):
_____

Signature:
_____

Date:
_____
__

Appendix G: Parent Demographic Questionnaire

Parent Demographic Form

Study Title: MindUP for Young Children

My child is a BOY or GIRL (circle one)

Her/his birth month is (print) : _____

Her/his birth year is (print): _____

Her/his first language learned: _____

My child <u>lives in a home</u> with her/his (check all that apply):

___ Mom
___ Dad
___Step-mother
___Step-father
___ Grandma
___ Grandpa
___ Other relative: _____
___ Siblings
    ___ Brother(s)
    ___ Sister(s)

___ Other (Please Specify): _____

_____

<u>Education level:</u>

Parent/Guardian 1:

___ Completed High School or GED
___ Completion of an apprenticeship or trades certificate or diploma
___ Completed a College Diploma (program/specialization)

___ University Bachelor's Degree
___ University Master's Degree
___ University Ph.D.
___ No completion of a certificate, diploma, degree
___ Completed Other (Please Specify): _____

Parent/Guardian 2 (if applicable):

___ Completed High School or GED
___ Completion of an apprenticeship or trades certificate or diploma
___ Completed a College Diploma (program/specialization)
___ University – Bachelor's Degree
___ University Master's Degree
___ University Ph.D
___ No completion of a certificate, diploma, degree
___ Completed Other (Please Specify): _____

My child's ethnic/cultural background is (check all that apply):

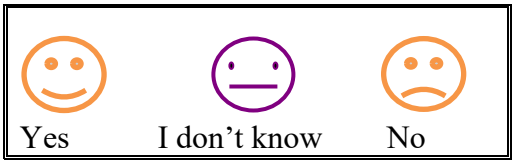
___ White
___ Aboriginal/First Nations/Métis/Inuit
___ Chinese
___ South Asian
___ Black
___ Filipino
___ Latin American
___ Southeast Asian
___ Arab
___ West Asian
___ Japanese
___ Korean
___ Pacific Islander
__Other (Please Specify) _____
Thank-you very much!

Appendix H: Child Mindfulness Questionnaire

Pre/ Post
(M3- Making Mindfulness Matter)

Date: _____

ID Code: _____



1. I know how my brain works when I am angry or upset.

2. I know what a breathing break is.

3. I use breathing breaks to calm my big feelings.

4. I have lots of great ideas to help me when I have a problem.

5. I know how to be kind to others.

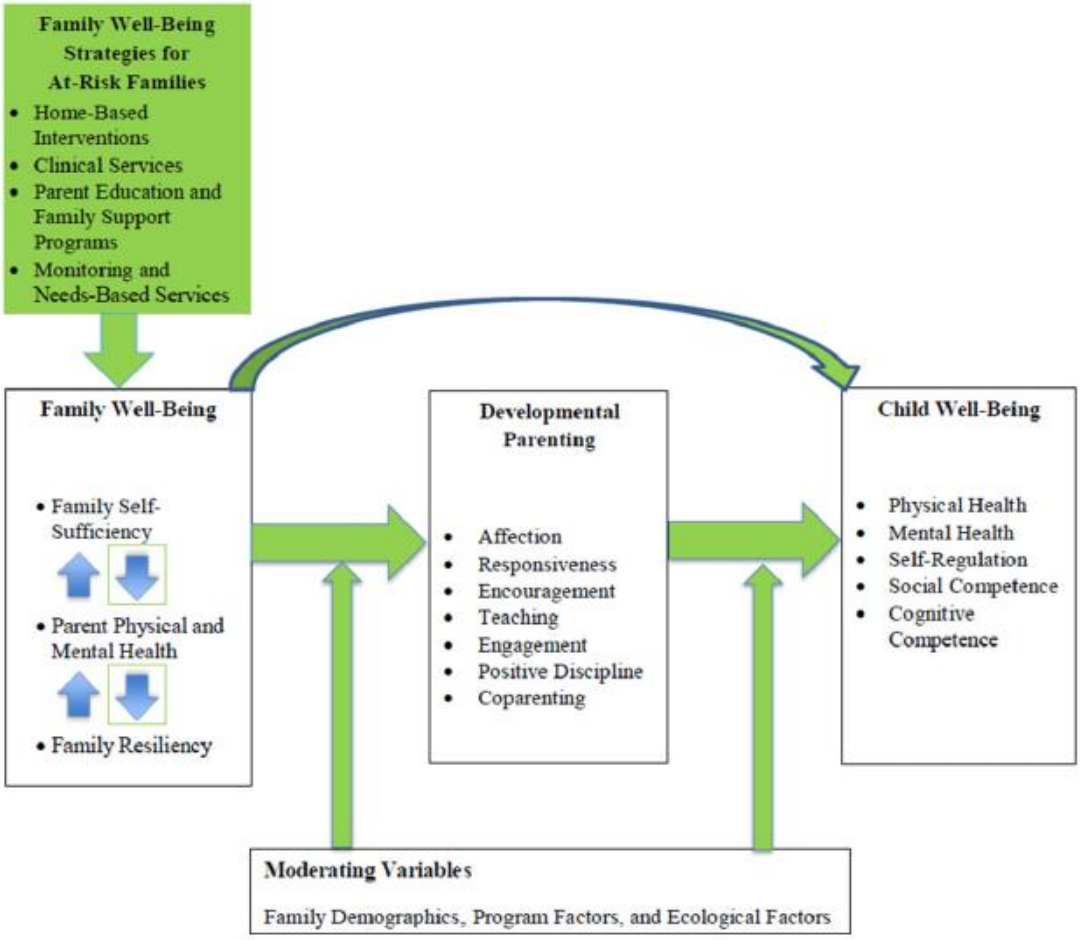
6. Mindfulness is…

_____

Appendix I: Child Research Assistant Script

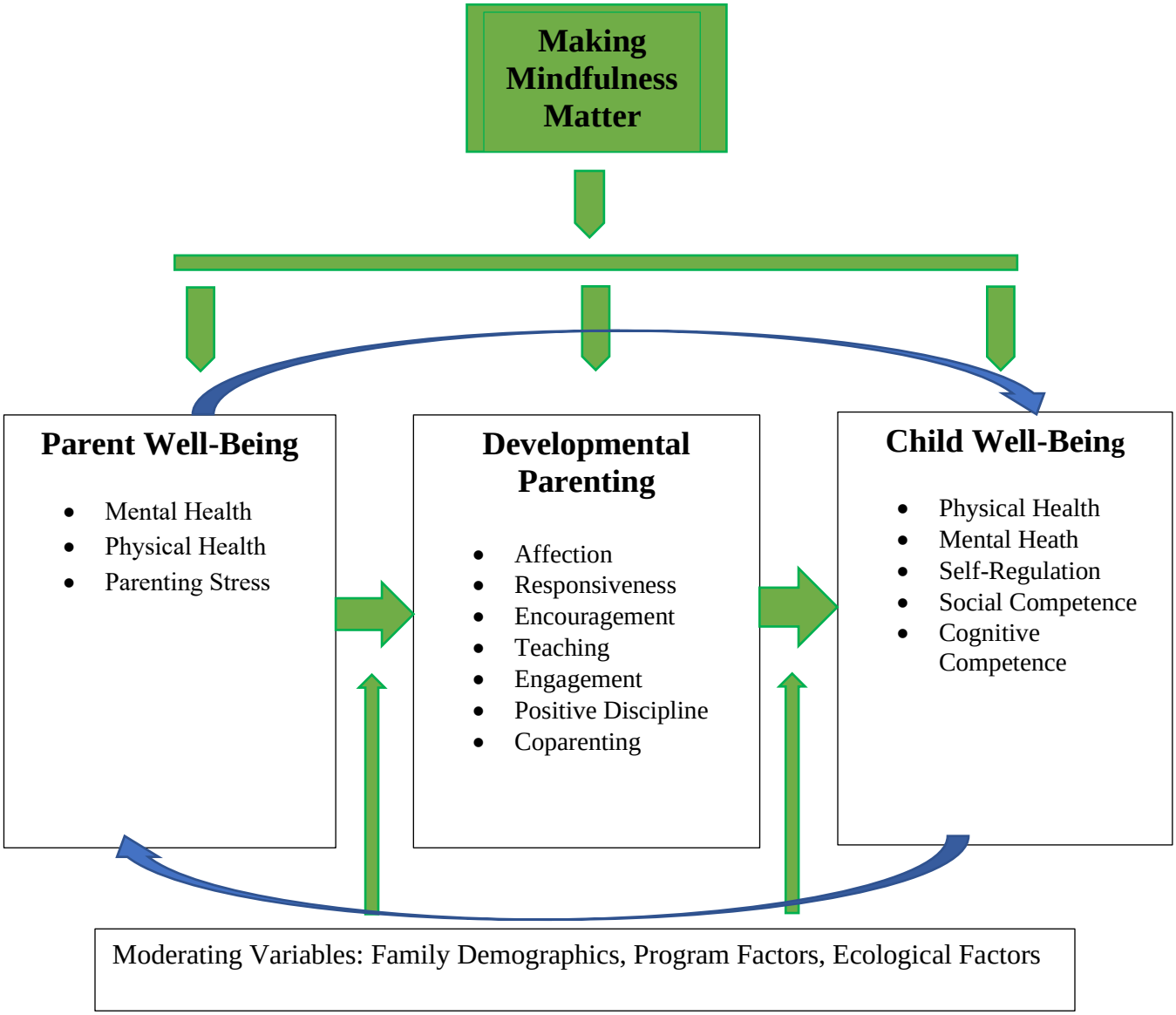
Before session starts:	**Responses**
Did you practice (previous week's skill) since last week's session? (show of hands)	
If yes, get examples about when/how they practiced (previous week's skill), what was the outcome?	
If no, why not? Were there times you could have? What kept you from practicing?	
At the end of session:	
Other than dinner/snack time, what was your favourite thing/activity you learned today? Why?	
What was your least favourite thing/activity you learned today?	
Do you think you'll be able to practice anything we learned today at home? (show of hands), how/why/what situations?	
Did you find any activities or things we talked about today hard to understand? Probe further if anyone says yes	

Appendix J: Applied Theory of Change Model for Child Well-being

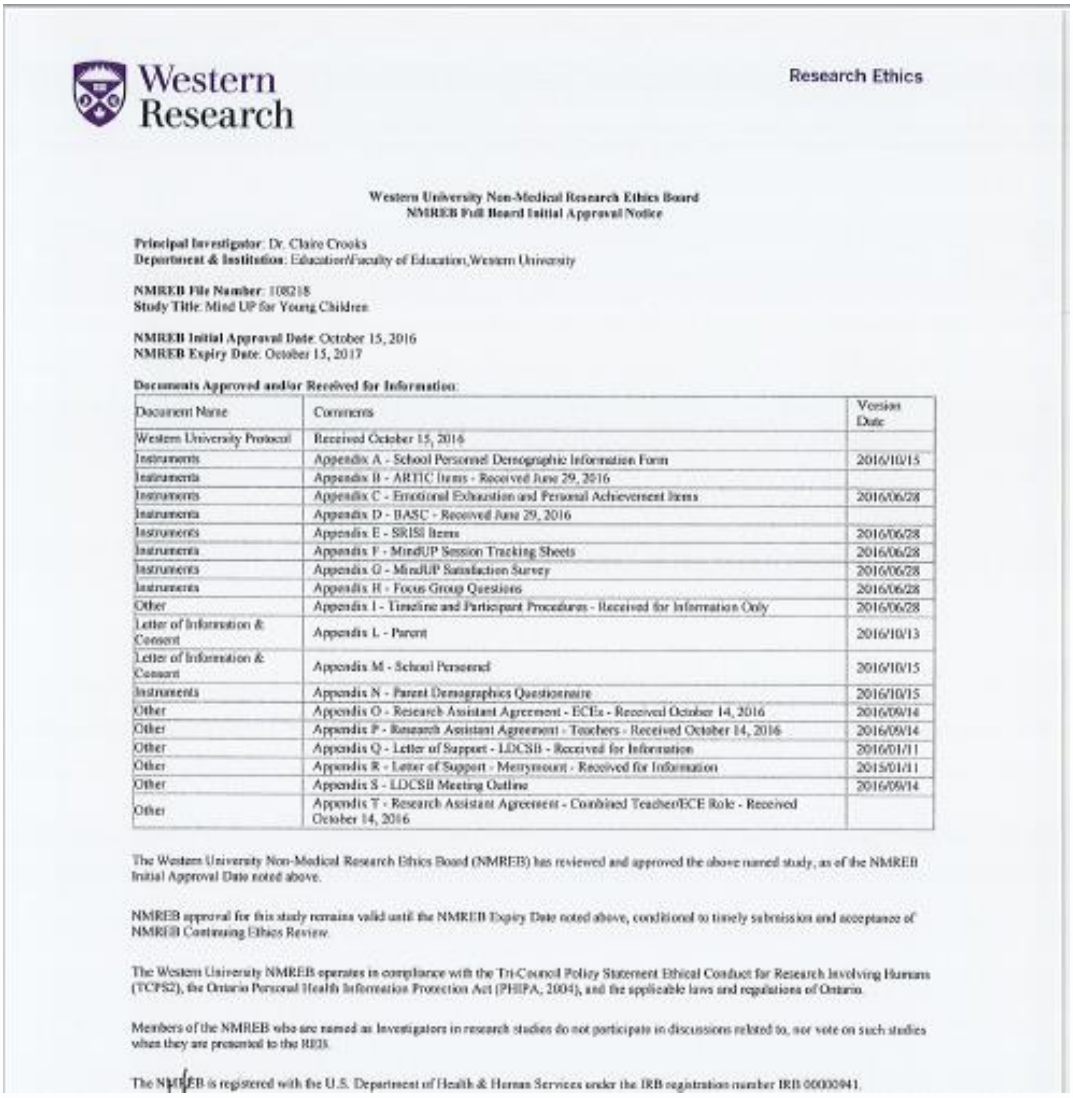


Newland, 2015

Appendix K: Adapted Applied Theory of Change Model for Family Well-being



Appendix L: WREM Ethics Approval



Western Research

Research Ethics

Western University Non-Medical Research Ethics Board
NMREB Full Board Initial Approval Notice

Principal Investigator: Dr. Claire Crooks
Department & Institution: Education\Faculty of Education,Western University

NMREB File Number: 108218
Study Title: Mind UP for Young Children

NMREB Initial Approval Date: October 15, 2016
NMREB Expiry Date: October 15, 2017

Documents Approved and/or Received for Information:

Document Name	Comments	Version Date
Western University Protocol	Received October 15, 2016	
Instruments	Appendix A - School Personnel Demographic Information Form	2016/10/15
Instruments	Appendix B - ARTIC Items - Received June 29, 2016	
Instruments	Appendix C - Emotional Exhaustion and Personal Achievement Items	2016/06/28
Instruments	Appendix D - BASC - Received June 29, 2016	
Instruments	Appendix E - SRISI Items	2016/06/28
Instruments	Appendix F - MindUP Session Tracking Sheets	2016/06/28
Instruments	Appendix G - MindUP Satisfaction Survey	2016/06/28
Instruments	Appendix H - Focus Group Questions	2016/06/28
Other	Appendix I - Timeline and Participant Procedures - Received for Information Only	2016/06/28
Letter of Information & Consent	Appendix L - Parent	2016/10/13
Letter of Information & Consent	Appendix M - School Personnel	2016/10/15
Instruments	Appendix N - Parent Demographics Questionnaire	2016/10/15
Other	Appendix O - Research Assistant Agreement - ECEs - Received October 14, 2016	2016/09/14
Other	Appendix P - Research Assistant Agreement - Teachers - Received October 14, 2016	2016/09/14
Other	Appendix Q - Letter of Support - LDCSB - Received for Information	2016/01/11
Other	Appendix R - Letter of Support - Merrymount - Received for Information	2016/01/11
Other	Appendix S - LDCSB Meeting Outline	2016/09/14
Other	Appendix T - Research Assistant Agreement - Combined Teacher/ECE Role - Received October 14, 2016	

The Western University Non-Medical Research Ethics Board (NMREB) has reviewed and approved the above named study, as of the NMREB Initial Approval Date noted above.

NMREB approval for this study remains valid until the NMREB Expiry Date noted above, conditional to timely submission and acceptance of NMREB Continuing Ethics Review.

The Western University NMREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the Ontario Personal Health Information Protection Act (PHIPA, 2004), and the applicable laws and regulations of Ontario.

Members of the NMREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB.

The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.

Curriculum Vitae

Name:	Alyssa Mueller
Post-secondary Education and Degrees:	Western University London, Ontario, Canada 2019-2021 M.A. School and Applied Child Psychology McMaster University Hamilton, Ontario, Canada 2015-2019 Honours B.Sc. Psychology, Neuroscience and Behaviour
Honours and Awards:	Canada Graduate Scholarship- Masters 2019 Graduate with Distinction- McMaster University 2019
Related Work Experience	Tutor Learning Disabilities Association 2020-2021 Program Facilitator The Mary J. Wright Centre for Research and Education 2019-2021 Volunteer Crisis Responder Kids Help Phone 2017 – 2021 IBI Therapist Behaviour Innovations 2018 – 2019
Research Experience	Research Assistant Mary J. Wright Centre for Research and Education 2019 – 2021 Research Student Developmental Neuroscience Lab 2018 – 2019 Research Assistant St. Joseph's Healthcare Hamilton 2018

Research Student
Offord Centre for Child Studies
2018

Research Student
Cognitive Science Lab
2017-2018

Publications:

Foglia, V., Mueller, A., & Rutherford, M. (in press). Separate Face Templates for Christian and Muslim Faces. *Religion, Brain & Behaviour.*

Peer-reviewed Abstracts:

Bax, K., Wells, S., Read, M., Pacholec, E., Mueller, A**.** (May 2020). Making Mindfulness Matter: Creating A Culture of Resiliency in the Family. Mindful Society (Presentation)

Bax, K., Wells, S., Read, M., Amico, C., Mueller, A., Baobaid, A. (March 2021). Making Mindfulness Matter for Preschool Educators. Robert Macmillan Symposium in Education (Round Table Presentation)

Bax, K., Wells, S., Read, M., Pacholec, E., Mueller, A., Amico, C., Baobaid, A. (March 2021). Making Mindfulness Matter: An Initial Evaluation. Canadian Psychological Association (Poster)