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# Association of Mindful Parenting Dimensions, Positive Parenting, Child Reactivity, and Parent Stress

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# Walden University

College of Social and Behavioral Sciences

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Carmen Dodsworth

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Walden University  
2018

Abstract

Association of Mindful Parenting Dimensions, Positive Parenting, Child Reactivity, and  
Parent Stress

by

Carmen Dodsworth

MA, Trinity Western University, 2006

BSc., Trinity Western University, 1999

Dissertation Submitted in Partial Fulfillment  
of the Requirements for the Degree of  
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Psychology

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## Abstract

The quality of caregiver-child interactions influences child, parent, and family wellness. Although the existing body of literature links mindfulness to positive outcomes within the family, little is known about how specific dimensions of mindful parenting are associated with parenting practices or child behavior reactivity. Based on a mindful parenting model and differential susceptibility model, this quantitative study used an online survey method to examine how specific dimensions of mindful parenting are associated with parenting practices and child behavior reactivity among a sample of 152 parents of elementary-age children. This study also explored how parent life stress modifies the relationship between mindful parenting dimensions and parenting practices and child reactivity. A model estimation was calculated using least squares regression-based path analysis to test the strength and direction of the association between the 5 dimensions of mindfulness and child behavioral reactivity through mediation and moderated mediation models. Results revealed that the mindful parenting dimensions of acceptance and attention had significant positive associations with child behavior reactivity. Emotional awareness and attention were mediated by positive parenting; however, no moderated mediation of any dimension of mindfulness and child behavior reactivity was found. The results from this study may be used to promote positive social change by helping service providers develop effective parenting programs and properly identify parents who might benefit from mindfulness interventions and stress reduction techniques.

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## Chapter 1: Introduction to the Study

### **Introduction**

It is a common understanding that stress is an unavoidable part of being parents in the 21<sup>st</sup> century, and stress may negatively affect parents' health. While stress exposure can have positive effects on an individual's ability to quickly and accurately deal with a task at hand, individual differences in stress reactivity moderate whether stress has negative or positive influence on individual's health and performance (Kohn, Hermans, & Fernandez, 2017). Stressor-specific molecular responses have been found to alter gene expression and underlie inflammation pathways, resulting in a change to an individual's gene expression, a finding that links stressors to poor health outcomes (Murphy, Slavich, Chen, & Miller, 2015). Stress is also known to have psychological and behavioral implications for parents and caregivers to young children (Black & Slavich, 2016; Lupien, McEwen, Gunnar, & Heim, 2009). What may be less commonly understood is the way in which perceived life stress influences the family unit. The effects of life stress within the caregiver-child dynamic, which are discussed in further detail in Chapter 2, include increased parent distress, caregiver inconsistency, anxiety, and greater perceived child behavior reactivity (Moreira & Canavarro, 2016; Nonterah et al., 2016; Zaidam-Zait et al., 2014). Although stress itself is unavoidable, learning to change individuals' responses to stress may help reduce the deleterious effects of stress on parents (Slavich, 2016; Kohn et al., 2017).

Meditation has the potential to support family health by improving the way parents are able to participate in caregiver-child interactions. Mindful parenting may help parents adapt to parenting stressors and support positive parenting approaches that can lead to improved family functioning (Parent, McKee, Rough, & Forehand, 2016). Mindfulness research has expanded into the family wellness domain, with positive results demonstrated in reduced parent stress, parenting style, and decreased child behavior reactivity (Gouveia, Carona, Canavarro, & Moreira, 2016; Parent et al., 2016). Little is known about underlying mechanisms involved in mindfulness parenting; however, it is known that mindful parents have more responsive parenting approaches due to lowered parenting stress (Campbell, Thoburn, & Leonard, 2017). Research is needed to uncover additional parent behaviors associated with mindful parenting, how this relates to child behavioral reactivity, and the role of broader life stress. The dimensions of mindful parenting and associated mediating factors are discussed in greater detail in Chapter 2. Understanding how various dimensions of mindful parenting relate to behavioral outcomes will help identify parents who may benefit from mindful parenting classes, streamline program development, and identify caregivers less likely to be served by mindful parenting support.

In this chapter, I provide a brief summary of the literature in providing a background of the study, address the problem of needing to find effective and well-understood ways to support parents, and explain the purpose and nature of this study. The research questions and hypothesis are stated, and the theoretical foundation are provided.

Definitions of terms used are provided, along with the theories selected as a foundation for this study. Finally, the assumptions, limitations, and scope and delimitations of the study are discussed, as is the significance the study.

### **Background**

Reducing perceived stress and parent emotional reactivity have been linked to increased quality of life and positive stress reappraisal among parents (Rayan & Ahmad, 2016). Mindfulness has been identified as an effective way to promote the health of increasingly burdened families as a moderator of stress outcomes (Morganson, Rotch, & Christie, 2015). Mindful parents have been found to report increased life satisfaction and decreased parenting stress (Neece, 2014), and mindful parenting practices are associated with positive youth outcomes (Parent et al., 2016). Mindful parenting is understood to be associated with improved caregiver-child dynamics through decreased parental stress (Campbell et al., 2017); however, the specifics of how different dimensions of mindful parenting are associated with these findings is poorly understood (Townshend, 2016).

Research in the field of mindful parenting is still in its infancy, and although a large amount of attention has been given to outcome studies, there is limited research into the specific dynamics of mindful parenting associated with changes in parenting style, parent stress perception, and child behavioral reactivity. Duncan, Coatsworth, and Greenberg (2009a) suggested that mindful parenting consists of specific dimensions that promote increased cognitive flexibility, awareness, and self-regulation of parents. Exploration of these dimensions is needed in order to understand how specific

dimensions of mindful parenting are involved in behavioral and perceptual changes observed within families where parents engage in mindful parenting practices (Bögels, Lehtonen, & Restifo, 2010; Harnett & Dawe, 2012). Further research is also needed to understand whether there are specific dynamics of mindful parenting that are more or less associated with positive parenting practices and reduced child behavioral reactivity than other mindful parenting dimensions (Townshend, 2016). The influence of perceived life stress, an unavoidable reality for many parents, on the dimensions of mindful parenting is poorly understood at this time. This study addressed this gap in the literature by exploring which dimensions of mindful parenting are most associated with positive parenting practices and decreased child behavioral reactivity in elementary-aged children. I also explored how the associations between mindful parenting dynamics, positive parenting practices, and child behavioral reactivity change due to perceived life stress.

### **Problem Statement**

Promoting effective strategies to support parent health is important for the wellness of parents, children, and society. Adaptive parenting has been linked to increased prosocial behavior in youth while maladaptive parenting is associated with increased antisocial behavior and anger reactivity in adolescents (Houltberg, Sheffield, Cui, Henry, & Criss, 2016; Kim, Gilman, Hill, & Hawkins, 2016). The natural tendency or internal drive towards mindful behavior is known as dispositional mindfulness, and it is associated with higher levels of psychological wellbeing (Hanley & Garland, 2017). Mindful parenting corresponds with positive parenting approaches and lower parent



related stress (Guertzen, Scholte, Engels, Tak, & van Zundert, 2015; Moreira & Canavarro, 2016) and is known to be a separate construct from dispositional mindfulness (Duncan, 2007). Mindful parenting is understood to encompass five dimensions: (a) listening with full attention, (b) nonjudgmental acceptance of the self and the child, (c) emotional awareness of the self and the child, (d) self-regulation in the parenting relationship, and (e) compassion for the self as the parent and the child (Duncan et al., 2009a). The developmental stage of the child is thought to be influential in determining which dimensions of mindful parenting may be more or less associated with behavioral outcomes in children (Duncan et al., 2009a). Duncan et al. (2009a) noted that parents of adolescents are not able to provide the same degree of supervision as they did in earlier developmental stages, and therefore listening with full attention may be a particularly influential dimension due to the facilitation of adolescent disclosure. However, only nonjudgmental acceptance was found to be significantly negatively associated with adolescent anxiety and depression (Guertzen et al., 2015). No exploration of the specific dimensions of mindful parenting's association with child reactivity in elementary-aged children has been done to date. Higher levels of mindful parenting are associated with decreased youth psychopathology (Parent et al., 2016), less dysfunctional parenting (de Bruin et al., 2014; Parent et al., 2016), and decreased parent stress (Bögels, Helleman, van Deursen, Römer, & van der Muelen, 2014). In this study, I explored how each specific dimension of mindful parenting is related to parent or child outcomes, or how the associations of mindful parenting dimensions with parenting behavior or child reactivity

are modified by the presence of life stress. Clarification of these relationships is important to identify parents who might benefit from mindfulness interventions and stress reduction techniques and to support effective program development.

### **Purpose of the Study**

Mindfulness in parenting may be an effective way to promote family wellness. In this correlational design, I explored which dimensions of mindful parenting are most associated with positive parenting behavior, and indirectly, with levels of child behavior reactivity. Perceived life stress was also explored as a modifier of the mediated relationship between mindful parenting dimensions and child behavior reactivity. I collected data online from caregivers of elementary-age children through self-report survey instruments that measured mindful parenting dimensions, positive parenting behavior, child behavioral reactivity, and perceived life stress. Online surveys have been identified as a convenient way to collect data that may reduce social desirability and allow parents to report on parent behavior honestly (Cocco & Tuzzi, 2013). The correlational design and survey method of data collection were chosen because it allowed for the measurement of internal constructs and the moderated mediation model to be explored. I further explain the research design in Chapter 3.

### **Research Questions and Hypotheses**

In this study, I addressed the relationships among mindful parenting dimensions, positive parenting behavior, child behavior reactivity, and perceived life stress. In this study, the predictor variables were the dimensions of mindful parenting, and the criterion

variable was child behavior reactivity. I explored which dimensions of mindful parenting were most associated with reduced child behavior reactivity indirectly through positive parenting behavior. Positive parenting behavior was the mediating variable, and perceived life stress was the moderating factor. In the present study, no specific dimension of mindfulness was proposed to be more associated with decreased child behavior reactivity than another; however, I assumed that the relationship between all dimensions of mindfulness and child behavior reactivity would be inverse. Overall, I hypothesized that parent mindfulness was directly related to positive parenting strategies and inversely related to child behavior reactivity. I also hypothesized that stress would weaken the relationship between mindful parenting and child behavior reactivity through positive parenting. In Chapter 3 I provide a more in-depth explanation of the research questions, hypotheses, and analysis strategies that were used. The research questions and hypotheses for this study were as follows:

Research Question 1: Which dimensions of mindful parenting are most associated with decreased child behavior reactivity?

$H_1$ : One or more dimensions of mindful parenting will be more associated with decreased child behavioral reactivity.

$H_0$ : All dimensions of mindful parenting will be equally associated with decreased child behavioral reactivity.

Research Question 2: To what extent does positive parenting behavior mediate the relationship between each dimension of mindful parenting and child behavior reactivity?

*H<sub>12</sub>*: Positive parenting behavior will mediate the relationship between each dimension of mindful parenting and child behavior reactivity.

*H<sub>02</sub>*: Positive parenting behavior will not mediate the relationship between each dimension of mindful parenting and child behavior reactivity.

Research Question 3: To what extent does life stress influence the indirect effect of mindful parenting dimensions on child behavior reactivity through positive parenting behavior?

*H<sub>13</sub>*: Life stress will moderate the indirect effect of mindful parenting dimensions on child behavior reactivity through positive parenting behavior.

*H<sub>03</sub>*: Life stress will not moderate the indirect effect of mindful parenting dimensions on child behavior reactivity through positive parenting behavior.

### **Theoretical Framework**

The differential susceptibility model is an evolutionary-developmental theory that explains the reciprocity that exists between caregivers and children (Ellis, Shirtcliff, Boyce, Deardoff, & Essex, 2011). Children are understood to be influenced by environmental and biological contexts differently through diverse reactions in children's automatic physiological responses (Ellis & Boyce, 2011). In the differential susceptibility model Boyce and Ellis (2005) suggested that parent and child reactivity to environmental factors, such as life stress, will differ across situations while remaining closely linked to each other. Parental stress responses may serve to heighten child stress and reactivity when it is developmentally advantageous to do so and down-grade a child's physiological

response in other situations (Laurent, Duncan, Lightcap, & Khan, 2017; Rutter, 2012). Within this model, various stressful situations have different cascading effects within the parent-child dynamic. Boyce and Ellis proposed that the phenotype expression of some individuals is extremely sensitive to both positive and negative contextual input from their environment. This means that some children benefit or suffer exponentially in response to circumstances in their home environment (Boyce & Ellis, 2005). The positive or negative impact is known to have long term effects on child development (Boyce & Ellis, 2005). Parents who are more reactive or sensitive to stress in their environment are less likely to engage in adaptive parenting, and therefore, are more likely to have children with increased behavioral reactivity (Gouveia et al., 2016). High levels of parent mindfulness are linked to lower child behavior reactivity, and parents with lower mindfulness have been found to have children with higher level of stress reactivity (Laurent et al., 2017). This relationship is thought to be indirect through the increased positive parenting behavior associated with parent mindfulness (Parent et al., 2016). In the differential susceptibility model Ellis and Boyce linked together parent reactivity (a biological influence), parenting behavior (an environmental context), and child behavioral reactivity (development).

Mindfulness has grown as a conceptual framework within social science research in the last decade. While many different definitions, or conceptualizations, exist, a unifying core theme is that mindfulness is a way of being conscious and paying attention to the present moment (Kabat-Zinn & University of Massachusetts Medical

Center/Worcester, 1991). Mindfulness also includes nonjudgment, which lowers the reactivity an individual may feel to disappointing or stressful events. Together attention, nonreactivity, and nonjudgement reduce stressful reactions to situations, promote awareness and insight, and increase personal insight (Guertzen et al., 2015). Although mindfulness includes an acceptance of the interdependent nature of things, the concept of mindfulness in the literature is first and foremost an intrapersonal dimension.

The mindful parenting model developed by Duncan et al. (2009a) includes mindfulness as both an intra and interpersonal process. Duncan et al. theorized that mindful parenting includes dimensions that are similar yet unique from mindfulness. The dimensions of mindful parenting include (a) listening with full attention, (b) nonjudgmental acceptance, (c) parent self-regulation, (d) emotional awareness, and (e) compassion. The dimensions of mindful parenting, therefore, promote parent well-being, and increase positive parenting practices and consistency, and therefore improve youth outcomes such as well-being and behavior (Duncan et al., 2009a). I provide detailed explanations of these models in Chapter 2.

### **Definition of Terms**

The following terms and phrases are used in this study:

*Adaptive parenting:* An individual's ability to fulfill parenting duties in a consistent manner suited to the developmental needs of the child (Gouveia et al., 2016; Parent et al., 2016).

*Caregiver:* Individual who fulfills functional parenting duties for a child, with or without legal status, through day-to-day activities intended to provide physical, emotional, educational, financial, and/or medical care to the child (Ruffini, 2017).

*Child behavior reactivity:* Childhood behavior that is difficult to manage for parents and falls within descriptive labels such as schizoid, depressed, somatic problems, hyperactivity, aggression, undercontrolled conduct issues, and anxious withdrawal behavior (Boggs, Eyeberg, & Reynolds, 1990).

*General (dispositional) mindfulness:* A way of being that allows for awareness, acceptance, and description of both inner and outer experience, which allows for a position of acceptance and emotional stability (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006).

*Life stress:* Stressors in the environment that individuals must adapt to and are presumed to have an impact on their functioning. Sources of life stress include school, work, relationship, children, family, dwelling, crime and legal, financial, social participation, and health (Laurent et al., 2017; Marulanda & Addington, 2016).

*Mindful parenting:* A model of parenting that incorporates mindfulness practice to the parenting role, therefore allowing parents to shift awareness between their inner state and the child's reality in such a way that parents are able to see the present-moment interaction within the long-term relationship with their child, identify the child's emotional needs, exercise self-regulations, and make intentional parenting choices (Duncan et al., 2009a).

*Parental wellness:* Personal indicators of psychological well-being experienced by individuals fulfilling parental duties for at least one child (Hollis-Walker & Colosimo, 2011).

*Positive parenting behavior:* A group of several parenting practices that encompass proactive guidance, appropriate reinforcement, emotional warmth, and parental support (Parent, 2017).

### **Assumptions**

I assumed that participants were truthful about reporting their demographic information. I also assumed that all participants possessed self-awareness to accurately answer the surveys. I also assumed that participants were truthful and accurate in rating their child's behavior.

### **Scope and Delimitations**

In this study, I focused on the associations of the dimensions of mindful parenting with child behavior reactivity through positive parenting behavior. I also explored how life stress affects the strength and direction of the indirect relationship between each of the five dimensions of mindful parenting and child behavior reactivity through positive parenting behavior. I chose this focus because the dimensions of mindful parenting proposed by Duncan et al. (2009a) have not been explored in relation to specific outcomes such as parenting behavior and child reactivity for elementary-aged children. Mindful parenting is thought to indirectly affect child outcomes through parenting behavior (Parent et al., 2016); however, it is not yet known which specific dimensions of



mindful parenting are most associated with changes in parenting behavior. It is also not known if these associations hold true as life stress increases (Laurent et al., 2017). I selected these variables for this study in order to expand on the existing literature. This was the first study that addressed the associations of specific dimensions of mindful parenting in elementary-aged children, and the selection of mediating and moderating variables relied on prior research. Systemic factors such as culture, ethnicity, and socioeconomic status are also thought to influence parenting success and parental stress (Algood, Harris, & Hong, 2013); however, inclusion of these variables was beyond the scope of this study. This study did not include additional contextual factors such as relationship satisfaction, parent attachment history, or birth information (e.g., adoption, surrogate, primigravida, multigravida), which could influence mindful parenting, because these are similarly beyond the scope of this study. This study included caregivers who were over the age of 18 with children who were 6 to 12 years of age. Data are generalizable to parents of children in this age range who share similar demographic characteristics of participants in this study.

### **Limitations**

This study was limited by the convenience sampling strategy I selected. The participants volunteered for this study, and there was no way for me to ensure that the sample matched the sociodemographic characteristics of the broader parenting population. This study was also limited due to the correlational nature of the design, which allowed for exploration of the associations between predictor, criterion, mediator,

and moderator variables but did not allow me to infer causation. This study was also limited by the self-report nature of the survey instruments selected. Survey instrumentation selection is supported by previous researchers and is discussed in depth in Chapter 3.

### **Significance**

This study may contribute to the field of psychology by deepening current understanding of how mindfulness in parenting is associated with positive gains in positive parenting, parental wellness, and reduced child behavior challenges as demonstrated in prior literature (Guertzen et al., 2016; Neece, 2014; Parent et al., 2016). Identification of specific dimensions of mindful parenting most associated with positive changes parenting approach and child behavior reactivity can help clinicians correctly identify who may benefit from mindful parenting intervention and can support effective program development. Likewise, the results from this study can help clinicians to correctly identify which parenting clients are not in need of mindfulness intervention, which may reduce obstacles to parents getting the support they need.

### **Summary**

Promotion of health and positive interactions within the family unit is an important way to encourage children's healthy development and mental health (Townshend, 2016). In this chapter I included a description of the five dimensions of mindful parenting model, which are the predictor variables of this study: (a) listening with full attention, (b) nonjudgmental acceptance of the self and the child, (c) emotional

awareness of the self and the child, (d) self-regulation in the parenting relationship, and (e) compassion for the self as the parent and the child (Duncan et al., 2009a). The purpose of this study was to explore which of these dimensions are most associated with child behavior reactivity, which is the criterion variable. In this study, I probed how these associations are mediated through positive parenting behavior and moderated by life stress. In Chapter 2 I provide detailed information about existing literature relating to this study's variables, and I discuss the theoretical and conceptual foundation for this study.

## Chapter 2: Literature Review

### **Introduction**

Health promotion of individuals within the family context is an important focus that may aid in effective utilization of interventions and promotion of children's healthy development. Mindfulness in parenting is associated with less parental stress, adaptive parenting, decreased parent stress, and less child behavior issues (Beer, Ward, & Moar, 2013; Meppelink, de Bruin, Wander-Mulder, Vennik, & Bögels, 2016); however, more research is needed to understand how the dimensions of mindful parenting relate to positive changes in order to guide intervention and further research (Townshend, 2016). Duncan et al. (2009a) proposed a model of mindful parenting that identified five unique dimensions of mindfulness within the parent-child context; however, this model has not been sufficiently explored to date. Although mindful parenting is thought to indirectly effect child behavior through parenting practices (Parent et al., 2016), no exploration of various dimensions of mindful parenting has been undertaken in this context. In the mindful parenting model Duncan et al.'s suggested that mindful parenting reduces child behavioral reactivity indirectly through positive parent behavior. Increased levels of mindfulness in parenting is associated with decreased parent stress (Gouveia et al., 2016), but the effect of life stress on parent or child behavior is not known. The purpose of the current study was to examine which dimensions of mindful parenting are associated with child behavioral reactivity through specific parenting practices. I also explored whether

life stress moderates the association of each dimension with parenting practices and child behavior reactivity.

In this literature review, I discuss the theoretical foundation of the study through an exploration of mindfulness, biological sensitivity to context, and mindful parenting theory. I then describe the connection between dispositional mindfulness and mindful parenting to provide clarity regarding the constructs examined in the study. Mindful parenting effects and the relationships between mindfulness and various stress and health outcomes are discussed as a way of supporting the idea that mindfulness may be able to help parents in their daily interactions within the family unit. This also provides justification for the current study through the exposition of the gaps in the mindfulness literature. Next, I address the deleterious impact of stress on individuals and within parent-child interactions as a way to further justify the connection of the variables in the current study and provide rationale of the need for the current research.

### **Literature Search Strategy**

The purpose of the literature review was to clarify definitions of constructs, measures, and gaps within the existing literature. Databases used included PsycINFO, PsycARTICLES, and Google Scholar. Keyword serve as descriptors of the general concepts to be studied. As such, *mindfulness*, *presence*, *mindfulness AND parenting*, *mindfulness AND relationship*, *mindfulness AND health*, and *dispositional AND mindfulness* were all keywords that defined the key constructs. Main theoretical constructs were also searched through *mindfulness*, *differential susceptibility*, and *mindful*

*parenting*. Each theory (*name of theory AND mindfulness AND parenting*) were used as searches to open up the literature to reveal research focused on mindfulness and parenting through the lens of each specific framework. A search of *parenting AND stress* and *parenting AND reactivity* revealed research relating to the impact of stress and reactivity on development. The literature review began in May of 2015 and continued through to October 2018. Peer reviewed scholarly sources were searched, and an emphasis was placed on studies published in the last 5 years in order to stay current. Older literature on key theory and background information, such as living systems theory and mindfulness, were included. Through the literature review, there was sufficient current scholarly and peer-reviewed research articles available.

### **Theoretical Foundation**

There are several frameworks that explain why supporting parent mindfulness is connected to positive parent and child outcomes and improved family interaction. Mindfulness as a concept, the differential susceptibility to context (Ellis & Boyce, 2005), and the mindful parenting model (Duncan et al., 2009a) help to explain the context within which mindfulness may contribute to positive outcomes within the integrated family unit.

#### **Differential Susceptibility Model**

The differential susceptibility model is an evolutionary-developmental theory focused on how the interaction between biological sensitivity and environmental contexts of early family environment and psychobiological reactivity to stress affects subsequent development (Ellis & Boyce, 2011). This theory was developed in response to empirical

observation of differences that exist in children's autonomic and adrenal responses, which in turn effects their susceptibility to environmental factors (Ellis & Boyce, 2011; Ellis, Essex, & Boyce, 2005). The differential susceptibility model is based on the assumption that some individuals are disproportionately altered by either positive or negative influences in the environment, a difference based on genetic make-up (Ellis & Boyce, 2011). There is a further assumption of environmental heterogeneity that causes strategies to differ in effect depending on the environmental parameters and interaction with individual development (Ellis & Boyce, 2011).

Differential susceptibility model provides a connection between self-regulation, nervous system interpersonal reactivity, and developmental outcomes. Complex and complimentary interactions between psychological, mental, and hormonal processes are involved in the promotion of resilience (Rutter, 2012). Ellis and Boyce (2011) suggested that nervous system reactivity is varied between individuals, is interactive between child and family, and has significant effect on development.

In this model, there are developmental contexts when the dampening of environmental input (via lowered parental stress activation) is needed and other contexts in which sensitivity to input (heighted child stress activation) is adaptive in order to promote children's psychological adjustment (Laurent et al., 2017). The mindful parenting model suggests that mindful parenting supports healthy parental response to stress and may buffer the negative effects of stress on parent-child interactions (Duncan et al., 2009a; Laurent et al., 2017). Laurent et al. (2017) studied mother and infant

hypothalamic-adrenal-pituitary activity during dyadic stressors. They found that infants in raised in low life-stress environments demonstrated slightly higher cortisol levels than infants in high life-stress environments (Laurent et al., 2017). Mothers who experienced high parent-specific stress and were highly mindful as parents had prolonged stress activation during disrupted communication with their infant, which was understood to represent a heightened sensitivity to their infant's need (Laurent et al., 2017). Different types of stress have distinctive effects on mother and children, and it is assumed that there are behavioral mediators of these effects (Laurent et al., 2017).

One way to promote the health of caregivers and children is to dampen negative effects of stress on individuals and family interaction patterns. Parents who are more mindful report less stress and anxiety (Neece, 2014) and report fewer behavioral challenges in their children (Beer et al., 2013). In the differential susceptibility model Boyce and Ellis (20015) linked together stress reactivity and child outcomes; however, more research is needed to understand the mediators and moderators of this relationship. There is also room in the differential susceptibility model for various types of stress to have a unique impact on the parent and parent-child interaction. Links between parent-specific stress, parent behavior, and child reactivity have been made (Gouveia et al., 2016); however, further research is needed to examine how broader perceived life stress affects the parent-child system. In the present study, I relied on self-report of stress, which is a limitation of the current study. Previous researchers found that self-report measures correlated with physiological stress responses (Laurent et al., 2017). Self-report



measures of mindful parenting have also been found to match observed scores (Duncan, Coatsworth, Gayles, Geier, & Greenberg, 2015).

### **Mindful Parenting Model**

Duncan et al. (2009a) proposed a model that applies mindfulness principles to parenting and suggested that within this context, mindfulness promotes well-being through increased parenting coping. The mindful parenting model expands on the dispositional mindfulness (Baer et al. 2006; Brown & Ryan 2003), and mindfulness-based ideas are commonly used as stress-reduction strategies (Kabat-Zinn, 2003; Kabat-Zinn & University of Massachusetts Medical Center/Worcester, 1991). Duncan et al. identified five dimensions of mindful parenting: (a) listening with full attention, (b) nonjudgmental acceptance, (c) parent self-regulation, (d) emotional awareness, and (e) compassion. Factors of general mindfulness are separated out to include consideration of the parents' ability to apply these dimensions to themselves and also to their child (de Bruin et al., 2014). Nonjudgmental acceptance includes being aware of expectations and attributions that one has placed on the child and encompasses both tolerating and supporting the child (Duncan et al., 2009a). Acceptance in parenting also involves being aware of subconscious judgements one is making about the child, understanding that struggles in parenting are expected, and addressing behavior through clear and realistic expectations of both parent and child (Duncan et al., 2009a). Listening with full attention is the extension of acting with awareness to include active listening to the child and correct perception and interpretation of the cues given by the child (Duncan et al.,

2009a). The foundation of mindful parenting is comprised of emotional awareness and compassion. The awareness of emotions incorporates awareness of emotions in self and other, whereas compassion involves active demonstration of concern and intention to comfort self and other (Duncan et al., 2009a). Self-regulation in the caregiver role refers to low reactivity to normative child behavior and also to the caregiver's ability to experience anger without expressing it where it is not appropriate (Duncan et al., 2009a). Duncan et al. suggested that these dimensions have an impact on parent well-being, parenting practices, and, therefore, child behavioral and wellness outcomes.

In the model proposed by Duncan et al. (2009a), there is an assumption that behavior, considered a result of reinforcement in previous operant models, is actually a changeable target. Coping and self-regulation are assumed to be enhanced by creating a momentary pause for the parent that builds overall awareness. Furthermore, Duncan et al. suggested that parents who are present, aware, and accepting of child needs will experience increased satisfaction with the parent-child relationship.

Duncan, Coatsworth, and Greenberg (2009b) tested the model through a family-focus preventive intervention pilot study in which mindfulness was added to an existing parenting class. Thematic analysis of focus group discussions revealed that parents perceived themselves to be less reactive during interactions with their child, more aware of their child's needs, and increasingly able to demonstrate compassion in parenting after participating in mindfulness classes designed to teach the five dimensions of mindful parenting (Duncan et al., 2009b). Duncan and Baradacke (2010) explored the impact of

mindfulness-based childbirth and parent education on birth outcomes, family relationship quality, and child development outcomes and found that an increase in overall mindful parenting was associated with decreased anxiety, depression, and negative affect. One current limitation in the mindfulness parenting research is the lack of investigation into the association of specific dimensions of mindful parenting to different aspects of parent-child interaction (Townshend, 2016). The current literature is also missing investigation of the effects of life stress on the mindful parenting model. The framework provided by Duncan et al. (2009a) provided the needed structure to systematically investigate the relationship of specific dimensions of mindful parenting to positive parenting practices and child behavior. I structured the current research to fill the gap in the existing parent-child mindfulness research and therefore required a mindful parenting construct to provide the structure for this study.

Dispositional mindfulness and parent mindfulness operate as separate constructs with the former being associated with reduced parental stress and the latter correlated with decreased childhood pathology (Laurent et al., 2017; Meppelink et al., 2016; Parent et al., 2016). Parents with higher levels of dispositional mindfulness reported higher levels of mindful parenting, and mindful parenting was found to be associated with an authoritative parenting style and decrease parental stress (Gouveia et al., 2016). Mindful parenting includes a vast number of emotional, attentional, and cognitive processes and each may have a unique predictive power in relation to specific parenting practices and child behavior. In the mindful parenting model Duncan et al. (2009a) connected

mindfulness, parent behaviors, and child outcomes; however, more research is needed to explore contextual mediators and moderators.

### **Mindfulness**

Mindfulness-inspired approaches to medicine, education, and mental health are based on Buddhist philosophy in a way that removes the perceived barrier of spirituality for the purpose of promoting wellbeing (Crane, Brewer, Feldman, Kabat-Zinn, Santorelli, Williams, & Kuyken, 2017; Kabat-Zinn, Lipworth, Burney, 1985). Within psychology mindfulness based practices are considered the third wave of empirically tested theories of human development and psychotherapies developed within this context focus on metacognition, acceptance, and connection to experience (Crane et al., 2017). Within Buddhist tradition mindfulness is defined as a state of awareness regarding the interconnected nature of things and a decreased false sense of separation from each other and nature (Ekman, Davidson, Ricard, & Wallace, 2005). The ability to hold focus on the present, the world, and nature of life the interdependent elements of mindfulness (Hofmann, Grossman, & Hinton, 2011). The development of wellness should be accessible through each of the elements; although, it is not yet understood how the type of meditative practice influences the development of each element.

Within the literature mindfulness is conceptualized as a state, disposition, and an intervention (Vago, & Silbersweig, 2012). The unifying underpinning is the ability to pay attention and focus on the present moment without judgement (Kabat-Zinn, & University of Massachusetts Medical Center/Worcester, 1991). State, dispositional, and general

mindfulness are operationalized as being aware and observant of inner experience in a way that enables description, nonjudgment, and nonreactivity (Baer et al., 2006).

Individuals have different levels of dispositional mindfulness and also vary in their ability to utilize mindfulness as a strategic response to life events (Hanley, & Garland, 2017).

Attitudes of nonjudging, patience, a beginner's mind, trust, nonstriving, acceptance, and letting go are utilized in mindfulness practice (Kabat-Zinn, & University of Massachusetts Medical Center/Worcester, 1991).

### **Mindful Parenting's Association With Dispositional Mindfulness**

Mindful parenting is the application of mindfulness to the parenting role and is related to improvements in family functioning through a complex relationship with parent stress, parent behavior, and childhood reactivity. Dispositional mindfulness increases the likelihood that parents will use mindful parenting strategies (de Bruin et al., 2014; Gouveia et al., 2016), but is not a sufficient predictor of childhood psychopathology (Meppelink et al., 2016). Dispositional mindfulness and mindful parenting have different effects on parent and child outcomes. Increases in mindful parenting after mindful parenting training were found to be associated with decreased child psychopathology (Meppelink et al., 2016), and parent dispositional mindfulness was found to be associated with decreased parental distress (Laurent et al., 2017). Jones, Hastings, Totsika, Keane, and Rhule (2014) similarly found that psychological acceptance of children's behavioral difficulties, dispositional mindfulness, and mindful parenting were negatively associated with maternal stress, anxiety, and positively associated with wellbeing. Fathers' survey

scores also indicated an inverse relationship between acceptance and depression (Jones et al., 2014). Psychological acceptance is a dimension of mindfulness and mindful parenting. Understanding the association of the remaining dimensions of mindful parenting with adaptive parenting and child reactivity may help aid in program development for caregivers of elementary-aged children.

Gouveia et al. (2016) investigated the relationship between compassion, mindfulness in parenting, dispositional mindfulness, and stress. Results from a sample of 333 parents revealed that higher dispositional mindfulness was associated with mindful parenting (Gouveia et al., 2016). Child behavioral measures were not used in this study; therefore, further exploration is needed to uncover how mindful parenting and parent style are linked to behavioral reactivity in children. Mindful parents also reported more self-compassion and lower parent related stress (Gouveia et al., 2016). It is not known if mindful parents similarly perceive less life related stress. When explored through physiological stress activation, overall mindful parenting was identified as a mediator of life stress on parent and child stress reactivity (Laurent et al., 2017). Behavioral mediators of reactivity to life stress, as opposed to parent related stress, have not been examined. It is also not clear whether specific dimensions of mindful parenting are more strongly associated with adaptive parenting behavior as noted by Gouveia et al.

Parent et al. (2016) studied the association of dispositional mindfulness, mindful parenting, parenting behavior, and youth outcomes. Mindful parenting mediated the relationship between dispositional mindfulness, decreased ineffective parenting, and

increased parental warmth (Parent et al., 2016). Positive parenting behavior was associated with decreased youth internalizing behavior but was not associated with youth externalizing behavior (Parent et al., 2016). Negative parenting practices such as coerciveness, intrusiveness, hostility, and ineffective discipline strategies were found to be directly associated with mindful parenting, youth internalizing behavior, and youth externalizing behavior (Parent et al., 2016). Researchers suggested that this relationship could likely be explained by the inclusion of additional mediating or moderating variables, such as life stress, that influence parenting practices (Parent et al., 2016).

### **Dispositional (General) Mindfulness in Parenting**

Within the realm of parenting much interest has been shown in understanding how general dispositional mindfulness benefits the parent population. People who fulfill parenting duties for young children are traditionally considered to be dealing with frequent and repetitive stressors. Individuals with higher levels of intrapersonal mindfulness are more likely to adopt mindful parenting styles (de Bruin et al., 2014; Parent et al., 2016). Mindfulness has been studied in numerous parenting contexts with the general goal of reducing parent stress to improve coping, parental interaction, and childhood outcomes. Parent self-reports from those who have received general mindfulness training prior to giving birth showed that increased general or dispositional mindfulness scores were associated with decreased parental stress and improves family relationships (Duncan & Bardacke, 2010). Benn, Akiva, Arel, and Roser (2012) found that increases in general mindfulness were associated with reductions in anxiety and

stress along with an increased sense of personal growth and self-compassion for parents of children with developmental disabilities. Comparison of survey scores of breastfeeding mothers ( $N = 26$ ) randomly assigned to a general mindfulness class or a no treatment control group researchers found that increases in general mindfulness scores were associated with less stress, anxiety, and depression (Perez-Blasco, Viguer, & Rodrigo, 2013). Perez-Blasco et al. (2013) also found that mothers with higher levels of general mindfulness reported more self-compassion and self-efficacy. Perez-Blasco et al. did not examine if there were any differences in childhood outcomes as a result of the parental changes in mindfulness. Parenting practices associated with general mindfulness were not addressed by Perez-Blasco et al.

Campbell et al. (2017) studied a national sample of 128 parents of children under the age of 18 and found that parents who scored higher in dispositional mindfulness were more responsive to their children. This relationship was found to be mediated by decreased parental stress that is associated with general mindfulness (Campbell et al., 2017). Van der Oord, Bögels, and Peijnenburg (2012) compared pre and posttest scores before, immediately after, and 8-weeks after general child and parent mindfulness training. When general mindfulness scores increased parents reported decreased parenting stress and less permissiveness (van der Oord et al., 2012). Parents and teachers completed questionnaires rating the child's attention deficit hyperactivity disorder (ADHD) and oppositional defiant disorder symptoms. Parents also reported on their perception of parenting stress, mindfulness, permissiveness, and parenting over activity



(parent symptoms of ADHD) before, immediately after, and 8-weeks after treatment (van der Oord et al., 2012). Significant reductions in parent ratings of childhood behavior, parent ADHD symptoms, parent reactivity, and teacher ratings of child's inattention were found in the mindfulness group compared to the waitlist control group; however, no decrease in behavioral challenges were identified by teachers (van der Oord et al., 2012). van der Oord et al. addressed general mindfulness; however, further research is needed to study how mindful parenting is associated with parent behavior and child reactivity. Investigation of specific dimensions of mindful parenting with parenting behavior and child reactivity is needed to deepen understanding of how mindful parenting relates to parenting practices and child outcomes.

### **Mindful Parenting**

Researchers have explored the effects mindful parenting on both parent and child outcomes in order to deepen understanding of how mindfulness acts within the integrated family unit. Research to date is promising. Previously researchers have found that mindful parenting is negatively correlated with certain negative parent behaviors such as laxity, exaggerated reactivity, and talkativeness (de Bruin et al., 2014). Mindful parenting is associated with increased adolescent disclosure; however, this is mediated by the affective quality of the parent-teen relationship, parent negative reactivity, and adolescent perceptions of parent-control (Lippold, Duncan, Coatsworth, Nix & Greenberg, 2015). It is not yet known how various dimensions of parent mindfulness are associated with positive parenting style or childhood outcomes. Further research is also needed to

investigate the role life stress has in effecting the relationship between dimensions of mindful parenting, parenting behavior, and child reactivity.

Mindfulness is emerging in the literature as a useful way to understand the relationship between stress and different elements of parent-child interactions. Beer et al., (2013) found that parents with high levels of mindful parenting reported less parental stress and fewer child behavioral challenges. Coatsworth et al. (2015) found that a mindfulness plus skill-based parenting support, called mindfulness based strengthening families program, was as effective as skill-based parent training in supporting positive changes in behavior management, parent-child relationship, and parent mindfulness. Fathers of children with developmental disabilities who were more mindful were found to have less avoidance and physiological arousal when providing care for their child (MacDonald & Hastings, 2010). In the study MacDonald and Hastings (2010) focused on the benefit of parental mindfulness; however, it is not yet known which dimensions of parent mindfulness within Duncan et al.'s (2009a) mindful parenting model are most associated with parenting behavior and child behavior reactivity.

Mindful parenting is thought to indirectly effect child outcomes through parenting practices (Parent et al., 2016). Laurent et al. (2017) studied mothers' and infants' hypothalamic-pituitary-adrenal activation during dyadic stressors in order to investigate the physiological underpinnings of the relationship between mindful parenting and stress reactivity. In line with the differential susceptibility model (Boyce & Ellis, 2005) mindful parenting was found to moderate the effects of life stress on mother and child cortisol

recovery (Laurent et al., 2017). In high life stress contexts mindful mothers maintained higher levels of stress activation in order to remain engaged with their infants (Laurent et al., 2017). Infants in low stress settings whose mothers scored higher on mindfulness surveys were found to have higher levels of cortisol (Laurent et al., 2017). Laurent et al. suggested that higher scores of infants' cortisol levels were a result of the up-regulating affects in situations where children benefit from amplification of cues. Behavioral mediators of the mindful-parenting moderated effect of life stress have not been identified to date, therefore, research is needed to explore how life stress effects parent behavior, and the association with child reactivity. Greco, Baer, and Smith (2011) noted that as the empirical support for mindfulness in parenting builds there is an increased need to examine how mindfulness promotes positive change within the family unit. Identification of the strength of association between mindful parenting dimensions and parenting practices will aid the selection of individuals who may be more likely to benefit from a mindfulness class. It is also important to explore how life stress influences the relationship between mindful parenting dimensions and positive parenting, so that parents may be appropriately assigned to stress management or mindful parenting classes.

### **Mindfulness Effects on Stress and Health**

Helping individuals discover effective means of reducing physiological stress reactions is an important undertaking for policy makers, health care professionals, and researchers. Increased mindfulness, achieved through mindful meditation, has been positively associated with psychological benefit. Hollis-Walker and Colosimo (2011)

found that mindfulness practice increased personal indicators of psychological wellbeing, specifically self-compassion and psychological adaptive personality attributes based on the five factor model of personality. Although many researchers in the field of mindfulness have included participants with privileged identify factors, results from a small pilot study that included people of low economic status and/or people of color demonstrated that marginalized individuals reported an increased sense of wellbeing after 5-weekly mindfulness classes (Blum, 2014). Research results of mindfulness practice and health outcomes have been positive; however, ongoing research is needed to continue building scientific understanding. Hoge et al. (2013) analyzed blood and genomic DNA samples from 15 meditators and 20 control group nonmeditators and reported that the relative telomere length of the meditation group was significantly longer. Although the sample size is small the results from this study demonstrated the possible connection between loving-kindness meditation and biophysical indicators of longevity. Holt-Lunstad, Steffan, Sandberg, and Jensen (2011) demonstrated through regression analysis that higher levels of spiritual connectivity were associated with lower cardiovascular risk independent of age, gender, or church attendance. More importantly, the researchers found that these results were independent of smoking, alcohol use, stress, smoking and depression (Holt-Lunstad et al., 2011). While the physical benefits of spirituality on blood pressure, fasting glucose, and inflammation were also seen only marginal impact on blood lipids was reported (Holt-Lunstad et al., 2011). The results from this study were useful in that they allowed researchers to make specific identifications of the health

benefits of spiritual connectivity. However, the research question itself was vague and left open the possibility of incorrect correlation because spiritual connection and spirituality may have encompassed many variables, including compassion, forgiveness, hope, or purpose. It could certainly be possible that these elements are present in spiritual connection; however, they may also have produced benefits outside of spirituality.

Increased mindfulness through meditation practice has been linked to positive shifts in physiological and immune response systems (Nyklíček, Mommersteeg, Van Beugen, Ramakers, & Van Boxtel, 2013). Pace et al. (2009) examined self-report of stress and blood markers of stress response in participants who had undergone a 6-week training class in meditation ( $n = 33$ ) compared to a health discussion control group ( $n = 28$ ). The authors found that meditation group participants reported significantly less stress reactivity (Pace et al., 2009). Within the meditation group increased meditation time was associated with decreased blood plasma levels of interleukin (IL)-6 indicating a reduced stress-induced immune response (Pace et al., 2009). Watford and Stafford (2015) found that increased mindfulness scores reported by mindfulness group participants were associated with improved heart rate variability, left brain activation, and self-reported state of mindfulness compared to control group participants' scores. Nyklíček et al. (2013) found participants randomly assigned to a mindfulness based stress reduction group showed a statistically significant decrease in heart rate, heart rate variability, and blood pressure compared to the control group participants. Mindfulness practice supports reduced physiological reactivity to stress (Pace et al., 2009), which is associated with

positive health outcomes in individuals who face persistent environmental stressors (Conway, Rutter, & Brown, 2016).

Meditative practice has also been shown to mitigate the psychological burden of stress. Fredrickson, Cohn, Coffey, Pek, and Finkel (2008) examined the influence of loving-kindness meditation on psychological and physical resources. One hundred and thirty-nine participants were randomly assigned to begin loving-kindness meditation or a control group (Fredrickson et al., 2008). The meditation group reported that over time they increased in positive mood, and this led to increased assessment of personal resources and a decrease in depressive mood (Fredrickson et al., 2008). Although Fredrickson et al. did not control for variability in meditative practice they asserted that mind-training may exert effect through improved mood.

## **Stress**

### **Stress Effects on the Individual**

Exposure to acute stress may have positive or negative effects on cognitive functioning of an individual depending on the individual's level of reactivity to stressors (Kohn et al., 2017). Although long-term stress is damaging short-term stress can be helpful to promoting the survival of the individual through adaptive responses (Dhabar, 2014). Laurent et al. (2017) found that in high-stress contexts a heightened stress response helped mothers maintain their focus on their infant. However, stress is known to be a risk factor for negative health outcomes, emotional difficulties, and accelerated aging (Slavich, 2016). The results from a longitudinal study of 163 people demonstrated

that an individual's health at age 32 was predicted by childhood and adolescent stress ratings (Farrell, Simpson, Carlson, Englund, & Sung, 2017). One promising finding was that maternal sensitivity had a buffering effect of childhood stress (Farrell et al., 2017). Stress is also associated with changes in perception. Increased parent stress was found to predict decreased perception of partner's humility during the transitional period to parenthood (Nonterah et al., 2017). Higher levels of parenting stress in mothers was found to be directly related to heightened negative perception of ability to parent and of the worthiness of others to receive help (Moreira & Canavarro, 2016). Moreira and Canavarro (2016) also noted that increased levels of avoidance was found in mothers with higher levels of parenting stress.

### **Parent Stress and Child Behavioral Reactivity**

Parenting stress and general life stress operate as two separate factors associated in a bidirectional relationship with both internalizing and externalizing childhood behavior (Zaidman-Zait et al., 2014). Mackrell et al. (2014) established that increased parental stress reactivity was directly related to increased reactivity in children; which therefore, perpetuates stress cycles within the family. Increased sympathetic nervous system response is associated with higher stress reactivity, and increased negative affect in mothers during challenging parent-child interactions (Miller, Kahle, Lopez, & Hastings, 2015). The stress response of the parent during a parent-child interaction has an effect on the parent, their partner, and child. Researchers discovered that increased cortisol reactivity in children, a sign of stress system activation, was positively associated

with parental depression (Mackrellet al., 2014). Parents who had difficulty adapting to and managing childhood behavior had increased levels of anxiety and depression (Tellegen, & Sanders, 2014). Improvements in parental mindfulness are associated with improved parent functioning. Neece (2014) explored the impact of stress reduction on parent depression and life satisfaction for parents with a child diagnosed with a developmental disability ( $N = 46$ ). The impact of differences in parental stress, depression, and life satisfaction on child behavior outcomes was also examined (Neece, 2014). Compared to a wait list control group parents who received mindfulness based stress reduction training demonstrated significantly reduced parental stress and depression (Neece, 2014). Parents with reduced stress perception also reported lower levels of their child's ADHD symptoms and behavioral problems (Neece, 2014). The results of Neece's (2014) study demonstrated a relationship between parental stress and childhood behavior, and that mindfulness influenced the relationship between parental stress and childhood behavior.

Parental support is positively associated with increased anger regulation and prosocial behavior in early adolescence (Houlberg et al., 2016). Ellis and Boyce (2011) found that children raised in highly reactive stressful contexts had less favorable outcomes than children raised in highly supportive environments. Parenting stress, anxiety, and dysfunctional parenting mediated the demonstrated relationship between stressful life events and child anxiety (Platt, Williams, & Ginsburg, 2016). Parent support can also have a buffering effect for children with increased behavioral and emotional



volatility. Reactive children generally experienced poorer health outcomes; however, were found to demonstrate more pro-social behavior when raised in highly supportive families (Ellis & Boyce, 2011). Consistent family bonding has been identified as a protective factor associated with decreased odds of violence in late adolescence that reduced the odds of more serious violence in later developmental periods (Kim et al., 2016). This study highlighted the importance of reducing factors that interfere with bonding and availability within families; stress is a factor considered to cause such interference.

### **Summary and Conclusion**

In summary, in this chapter I included a review of the current literature on mindfulness and parenting. I described the gap in the literature along with a rationale for the utility of the proposed study in filling the gap. I discussed mindfulness, differentially susceptible theory of development, and mindful parenting. The mindful parenting model presented by Duncan et al. (2009a) was described along with a discussion of the application of this model in current research. Mindful parenting's association with dispositional mindfulness, mindful parenting effects, mindfulness and health outcomes, and stress were described through a summary of peer reviewed studies. Parental stress and childhood reactivity, mindfulness and health, and mindfulness in parenting were also described. I identified current literature that is lacking in research of the relationship between different dimensions of mindful parenting, child behavioral reactivity, and parenting behavior. Another limitation I identified was the lack of research on the effect

of life stress on the relationship between mindful parenting, positive parent behavior, and child behavioral reactivity.

In chapter 3 I discuss the methods selected for this study, including the research design, materials, data collection, and analysis. I provide a description and justification of all survey measures. I will also explain the protection of participants, data, and dissemination of findings from this study.

## Chapter 3: Research Method

### **Introduction**

The purpose of the present study was to explore which dimensions of mindful parenting were most associated with positive parent behaviors and reduced child behavioral reactivity. I designed this study to examine the effects of perceived stress on the relationships between mindful parenting dimensions and both parent and child outcomes. Laurent et al. (2017) found that life stress moderated the relationship between mindful parenting and parent-child stress reactions, and Parent et al. (2016) reported that parent behavior mediated the relationship between mindful parenting and child outcomes; however, these authors did not explore dimensions of mindful parenting. Therefore, there is a gap in the literature relating to the exploration of the association of dimensions of mindful parenting with positive parent behavior and child outcomes. The association between mindful parenting dimensions and positive parent behavior and decreased childhood behavioral reactivity has been suggested by Duncan et al. (2009a) in their model of mindful parenting; however, further research is needed to understand mediating behaviors and situational contexts of mindful parenting within the family unit.

Understanding the specific dimensions and functional mechanism through which mindful parenting acts within the family unit have been identified as important next steps in advancement of the field of mindfulness (Townshend, 2016).

In this chapter, I explain the methodological approach for this study, including population information, data collection strategies, and statistical analysis. I include

information about instrumentation and ethical considerations. Chapter 3 also includes a rationale for the research design and methodology selection.

### **Research Design and Rationale**

In this study, I used a correlational design. The five dimensions of mindfulness were the predictor variables, and child behavioral reactivity was the criterion variable. Positive parenting behavior was tested as a mediator variable, and perceived life stress was explored as a moderator of the indirect relationship between mindful parenting and child behavioral reactivity through positive parenting. Least squares regression-based path analysis was used as it allowed for a test of the strength and direction of the association between the five dimensions of mindfulness and child behavioral reactivity to be identified; however, due to the nature of this design, no causal inferences were made. The PROCESS Version 3 macro (Hayes, 2017) for IBM SPSS was used for analysis as it provides estimates of path coefficients, *t*- and *p*- values, standard errors, and coefficients (Hayes, Montoaya, & Rockwood, 2017). I chose the correlational design and path analysis in order to understand how positive parenting behavior intervenes in the relationship between mindful parenting dimensions and child behavioral reactivity. This design also allowed for investigation of how the association between mindful parenting and child behavioral reactivity is conditional on perceived life stress. The use of this design facilitated exploration of the strength of the relationship between different dimensions of mindful parenting and child behavior reactivity. Mindful parenting is not

thought to directly cause child behavioral reactivity; therefore, there was no independent variable to manipulate as in an experimental design.

I collected all data through online self-report survey instruments advertised through Qualtrics, social media pages targeting parents, and flyers distributed locally near play areas. Qualtrics is a widely used on-line survey host site and panel for researchers to access participants effectively. Internet recruitment and online surveys are convenient ways to gather data; however, these methods do present challenges in recruiting individuals who are willing to complete a survey. Moderated mediation analysis requires complete data sets. The specific survey used is described in detail in the instrumentation section of this chapter. There is a strong reliance on self-report measures in the current literature on mindfulness and parenting. This study contributed to the existing body of literature because it addressed the association of specific dimensions of mindfulness with child behavioral reactivity and positive parenting behavior. I also explored to what degree life stress moderates the relationship between mindful parenting, positive parenting behavior, and child behavioral reactivity.

## **Methodology**

### **Population**

The target population for this study was caregivers of children in elementary school. Diversity in the conceptualization of what constitutes being a parent is important for social justice, and as such, the participants were not required to be legal parents of the child they identified as providing care for. Ruffini (2017) expanded the definition of

caregivers to include individuals who fulfill functional parenting duties for a child, with or without legal status, through day-to-day activities intended to provide physical, emotional, educational, financial, and/or medical care to the child. Similarly, I used this inclusive definition of caregiver for the current study. I selected this population to add to the existing body of literature by exploring Duncan et al.'s (2009a) model on a developmental stage in childhood that has not been well researched in the mindfulness literature. A convenience sampling strategy was used. Based on G\*Power 3.1 analysis with five predictor variables, a total sample size of 92 was required to detect a medium effect size (.15) with a power of .80 and probability of error at .05.

I recruited participants through Qualtrics, parenting social media pages, and flyers placed in local indoor play areas. The inclusion criteria I used was anyone who was over the age of 18 and a caregiver to at least one child in elementary school. Exclusion criteria was individuals who were under the age of 18 and not a caregiver to at least one child in elementary school. I provided participants with information regarding the voluntary nature of the study, contact information in case they had any concerns, and an informed consent form to read and acknowledge prior to beginning the study. Participants had the opportunity to receive a summary of the findings of the study if desired, in which case they were required to provide an e-mail address.

## **Instrumentation**

### **Sociodemographic Questionnaire**

I developed a sociodemographic questionnaire for participants to complete. A copy of the questionnaire is located in Appendix A. Participants were asked to disclose their age, gender, relationship status, number of children, ethnicity, and level of formal education. I also asked participants for information regarding the nature of their relationship with the child they held in mind as they answered the questionnaire. This was done to allow for inclusive consideration of what consists being a parent. Participants were also asked to identify the age and gender of a specific child (6 - 12 years old) who they focused on as they completed the remainder of the survey. This information was needed to describe and define the population so that confounding variables could be identified, and future researchers can understand how their population relates to the current sample.

### **Interpersonal Mindfulness in Parenting Scale (IM-P)**

The Interpersonal Mindfulness in Parenting scale (IM-P) was designed by Duncan (2007) as a measure of the interpersonal dimensions of mindfulness in parenting. Prior to the IM-P's development, mindfulness measures were restricted to assessment of intrapersonal dimensions, which are understood to be complimentary and yet unique to mindful parenting dimensions (Duncan, 2007). The original scale consisted of 10 self-report items rated on a 5-point Likert-type scale, and provided a global measure of mindful parenting, along with five subscales that reflect various mechanisms of

mindfulness: (a) listening with full attention, (b) present-centered emotional awareness, (c) nonjudgment of child's experience, (d) self-regulation during parenting, and (e) compassion. Negatively formulated items are reverse coded; therefore, higher scores on the IM-P reflect higher levels of mindful parenting or a specific dimension of mindful parenting. These five subscales measure the dimensions identified in the model of mindful parenting developed subsequent to this assessment tool (Duncan et al., 2009a). The original IM-P scale was expanded and translated to Dutch by de Bruine et al. (2014), in collaboration with Duncan, who gave final approval. The Dutch version of the IM-P was translated back to English and once again received approval from Duncan and colleagues (Guertzen et al., 2015). IM-P has demonstrated internal consistency ( $\alpha = .85$ ) and good internal and discriminatory validity against several general mindfulness measures in American and Dutch populations (de Bruin et al., 2014; Duncan, 2007). de Bruin et al. reported that the IM-P total score was positively correlated with the Freiburg Mindful Inventory,  $r = 0.445$ ,  $p < .001$ . Coatsworth, Duncan, Greenberg, and Nix (2010) used the original 10-item IM-P as a measure to detect treatment effects of mindfulness in parenting.

In the Dutch sample, a sixth factor, emotional awareness of self, was determined to be a separate factor (de Bruin et al., 2014). Internal consistency of the 29-item expanded form was good ( $\alpha = .89$ ) for the overall measure and subscales: (a) listening with full attention ( $\alpha = .83$ ), (b) compassion for child ( $\alpha = .78$ ), (d) nonjudgmental acceptance of parent ( $\alpha = .73$ ), (e) emotional nonreactivity in parenting ( $\alpha = .74$ ), and (f)



emotional awareness of the child ( $\alpha = .78$ ) as reported by de Bruin et al. (2014). The additional factor, emotional awareness of self, had a low Cronbach's alpha of .54 (de Bruine et al., 2014). Guertzen et al. (2015) reported similar internal consistency of the 29-item English version of the IM-P. Cronbach's alpha for all items was good ( $\alpha = .89$ ) and internal consistency for the subscales were (a) listening with full attention ( $\alpha = .84$ ), (b) compassion for child, ( $\alpha = .79$ ), (c) nonjudgmental acceptance of parent ( $\alpha = .72$ ), (d) emotional nonreactivity in parenting ( $\alpha = .74$ ), and (e) emotional awareness of the child ( $\alpha = .76$ ) as reported by de Bruin et al. Emotional awareness of self once again had a low Cronbach's alpha of .54 (Guertzen et al., 2015). In order to align with the model proposed by Duncan et al. (2009a), only the original five factors are included in the current study.

The IM-P scale was appropriate to use for the current study as it is the only measure of the dimensions of mindful parenting that currently exists. It provides a reliable measure of overall mindful parenting and allows for examination of specific dimensions of mindful parenting in accordance with the mindful parenting model suggested by Duncan et al. (2009a). A copy of the IM-P scale is included in Appendix B.

### **Multidimensional Assessment of Parenting Scale (MAPS)**

The Multidimensional Assessment of Parenting Scale (MAPS; Parent & Forehand, 2017) was developed to allow for assessment of specific parenting components rather than set groupings of parenting typologies. The MAPS instrument includes 35 items as a self-report measure on a 5-point Likert-type scale ranging from *never* (1) to

*always* (5). Parent (2017) reported a total of seven subscales and one overall estimate of positive parenting as follows: (a) proactive parenting ( $\alpha = .80$ ), (b) positive reinforcement ( $\alpha = .83$ ), (c) warmth ( $\alpha = .83$ ), (d) hostility ( $\alpha = .85$ ), (e) lax control ( $\alpha = .85$ ), (f) physical control ( $\alpha = .91$ ), (g) supportiveness ( $\alpha = .77$ ), and (h) broadband positive parenting ( $\alpha = .90$ ). Test retest reliability of the subscales ranged from  $r = .81$  to  $r = .91$  (Parent, 2017). Brassell et al. (2016) selected the positive parenting, negative parenting, harsh discipline, and lax discipline subscales of MAPS to assess adaptive parenting in a study of psychological flexibility and child and parent wellbeing ( $N = 615$ ) by parent assessment of children aged 3 to 17 years. Brassell et al. reported acceptable reliability of the positive parenting ( $\alpha = .90$ ), negative parenting ( $\alpha = .83$ ), harsh discipline ( $\alpha = .90$ ), and lax discipline ( $\alpha = .86$ ) subscales. In a study of parent mindfulness across three different developmental stages, the MAPS demonstrated excellent reliability for the positive parenting ( $\alpha = .90$ ) and negative parenting ( $\alpha = .90$ ) scales (Parent et al., 2016). This instrument was appropriate to the current study because of its ability to measure overall positive parenting, which was analyzed as a possible mediator of the relationship between mindful parenting dimensions and child behavior reactivity. A copy of the MAPS scale is included in Appendix C.

### **Eyberg Child Behavior Inventory (ECBI)**

The Eyberg Child Behavior Inventory (ECBI; Eyberg & Ross, 1978) consists of 36 items that rate the occurrence and intensity of externalizing behavior in children aged 2-16 as observed by a parent. The EBCI produces an Intensity Scale that identifies

whether externalizing behavior is occurring, and a Problem Scale that measures how much the child's behavior is an issue for the parent (Eyberg & Ross, 1978). Parents rate behavior on a frequency scale of *never* (1) to *always* (7), which produces a rating in which the higher score reflects more problematic externalizing behavior (Boggs et al., 1990; Burns & Patterson, 1990). Parents also indicate whether the behavior in question is a problem through a *yes-no* scale (Boggs et al., 1990). The *yes* responses are totaled so that a higher number reflects a greater problem with child behavior for the parent (Boggs et al., 1990). The EBCI is established as a reliable parental measure of childhood behavior (36 items;  $\alpha = .93$ ) in the literature (Axberg, Hanse, & Broberg, 2008; Sweenie, Mackey, & Streisand, 2014). Holtz and Fox (2012) found the ECBI to have good discriminate validity and demonstrated internal consistency (.92). The ECBI has demonstrated test-retest consistency (.88) and no significant differences between mother and father's reports on the scales (Axberg et al., 2008). Funderburk et al. (2015) reported an alpha of 0.94 to 0.96, and a re-test correlation of 0.82 to 0.86 in a sample 330 parent-child dyads who participated in a study of live video treatment as an intervention for children exhibiting behavioral challenges. Furthermore, the ECBI is significantly better at discriminating between problem inattention and hyperactivity than the Strength and Difficulties questionnaire, which is a parallel test often used in research studies (Axberg et al., 2008). The ECBI is appropriate to the current study because it allowed for a quantifiable measure of current childhood behavior reactivity as observed by the parent.

A copy of the ECBI scale is included in Appendix D. The ECBI may be used for educational or research purposes without written permission.

### **Perceived Stress Scale-Revised (PSS-R)**

The Perceived Stress Scale-Revised (PSS-R; Wickrama et al., 2013a) is based on the Perceived Stress Scale (PSS) developed by Cohen, Karmack, and Mermeistein, (1983), which is one of the most commonly used measures of the perception of stressfulness of life events (Andreou et al., 2011). Benediktsson, MacDonald, and Tough (2017) validated the use of the PSS for the pregnant and parenting population. Benediktsson et al. (2017) reported Pearson correlation coefficients between the PSS and related constructs, anxiety with depression ( $r = .73$ ,  $r = .72$ ,  $r = .77$ ), and stress and depression ( $r = .75$ ,  $r = .75$ ,  $r = .77$ ). Benediktsson et al. (2017) reported Cronbach Alpha's for the PSS of .88, .88. and .89. revised scale was constructed from a confirmatory factor analysis of the original PSS (Cohen et al., 1983). There are 12 self-report items, each rated on a 5-point Likert-type scale ranging from *never* (0) to *very often* (4), which result in two scales: psychological competency and psychological vulnerability (Wickrama et al., 2013a). Positive items found in the psychological competency scale are reverse scored, so that the higher the overall score, the greater level of perceived stress. Cronbach's alpha coefficients for the two scales are .80 and .85, respectively (Wickrama et al., 2013b). Wickrama et al. (2013b) also found that the PSS-R had good discriminate validity as shown by nonstatistically significant correlation

between factors ( $r = -.10, p = .22$ ). A copy of the PSS-R scale is included in Appendix E. The PSS-R may be used for educational or research purposes without written permission.

### **Data Analysis**

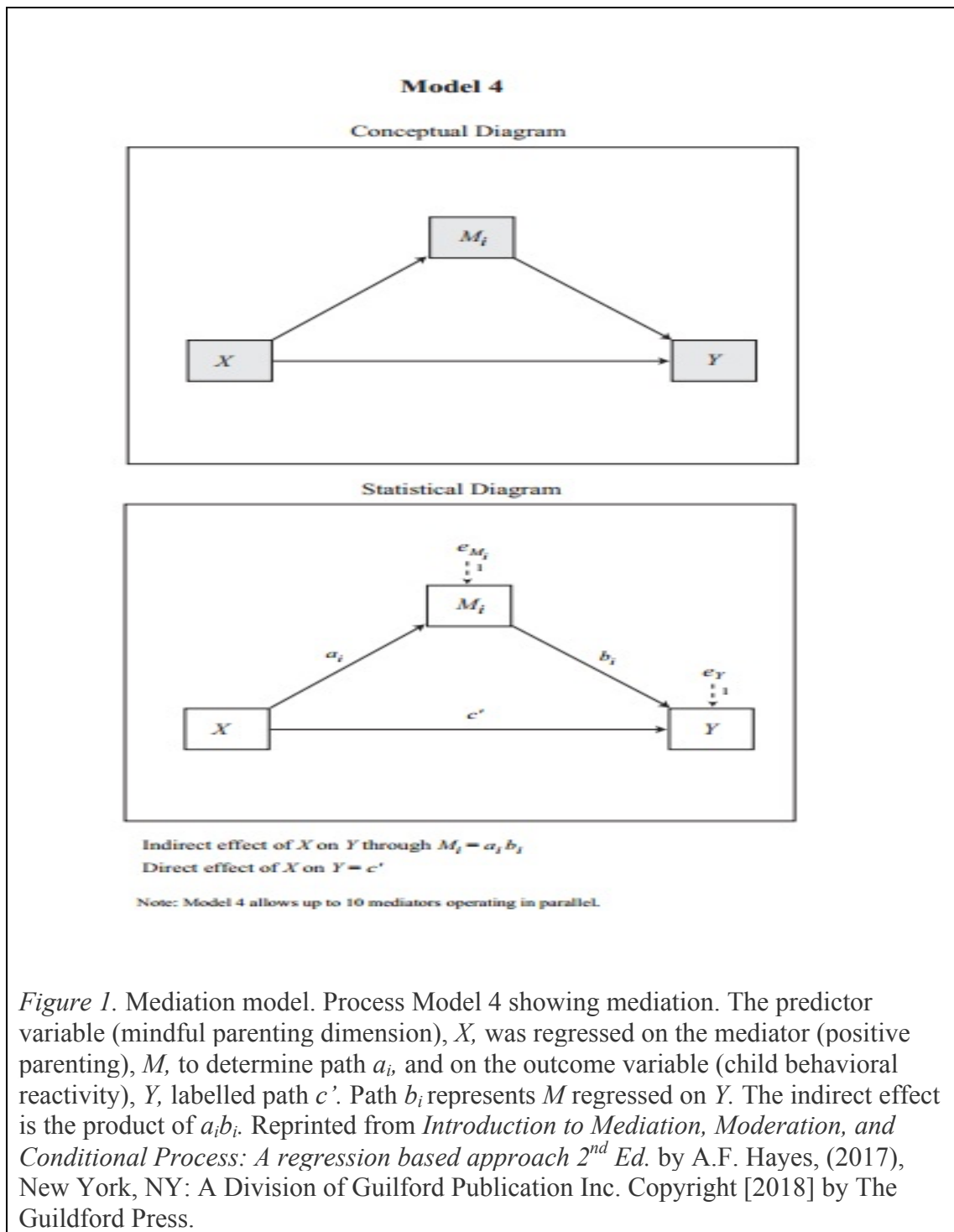
Statistical analysis was completed using IBM SPSS Version 24. Survey data that was incomplete or completed by individuals who did not meet inclusion criteria was excluded. Prior to testing the moderated mediation model variables that could impact the individual and interaction effects were examined for influence.

The PROCESS Version 3 macro, written by Andrew F. Hayes (2017), was used to estimate the moderated mediation model, and allowed for effect size estimation of individual paths and interaction effects. I used the PROCESS macro to implement bootstrap and Monte Carlo confidence intervals. I examined data during coding and addressed acceptable levels of missing data through elimination and editing. Previous researchers have suggested that comparative analysis of variance, covariance, and means for data sets be reviewed before and after editing was made ensure that no significant differences in the data were found (Young, Houston, Harris, Hoffman, & Wise, 1990). I examined data before and after editing and found that no significant differences were found. Editing and elimination strategies are reported along with the findings.

### **Mediation Analysis**

Mediating variables partially explain how predictor variables are related to criterion variables (Karazsia, Berlin, Armstrong, Janicke, & Darling, 2014). Previous researchers suggested that parenting behavior may mediate the relationship between

mindful parenting and child outcomes (Parent et al., 2016). To determine the possible mediation effect of positive parenting on the association of each mindful parenting dimension and child behavior reactivity, an estimation of the indirect effect was produced using the SPSS macro, PROCESS Version 3, Hayes' (2017) Model 4 (see Figure 1). Preacher and Hayes (2004) noted that in order to test the indirect of  $x$  on  $y$ , identified as path  $c$ , there must be an effect to be tested ( $c \neq 0$ ), and that the effect be statistically significant. The indirect effect is through two linear models using estimated regression coefficients, regression intercepts, and errors in estimation (Hayes, 2015). The product of  $ab$  is taken as a measure of the indirect effect of  $x$  on  $y$  (Hayes, 2015). Researchers have used bootstrapping as a nonparametric approach to estimate effect size of the indirect effect predictor variables on outcome variables through mediating variables (Hayes, 2015; Preacher & Hayes, 2004). I used bootstrapping to estimate mindful parenting on child behavioral reactivity through positive parenting (Hayes, 2015; Preacher & Hayes, 2004). This method was selected because it does not make assumptions about the shape of the distribution, or require a large sample size as is the case with the Sobel test (Hayes, 2009).



### **Moderation Analysis**

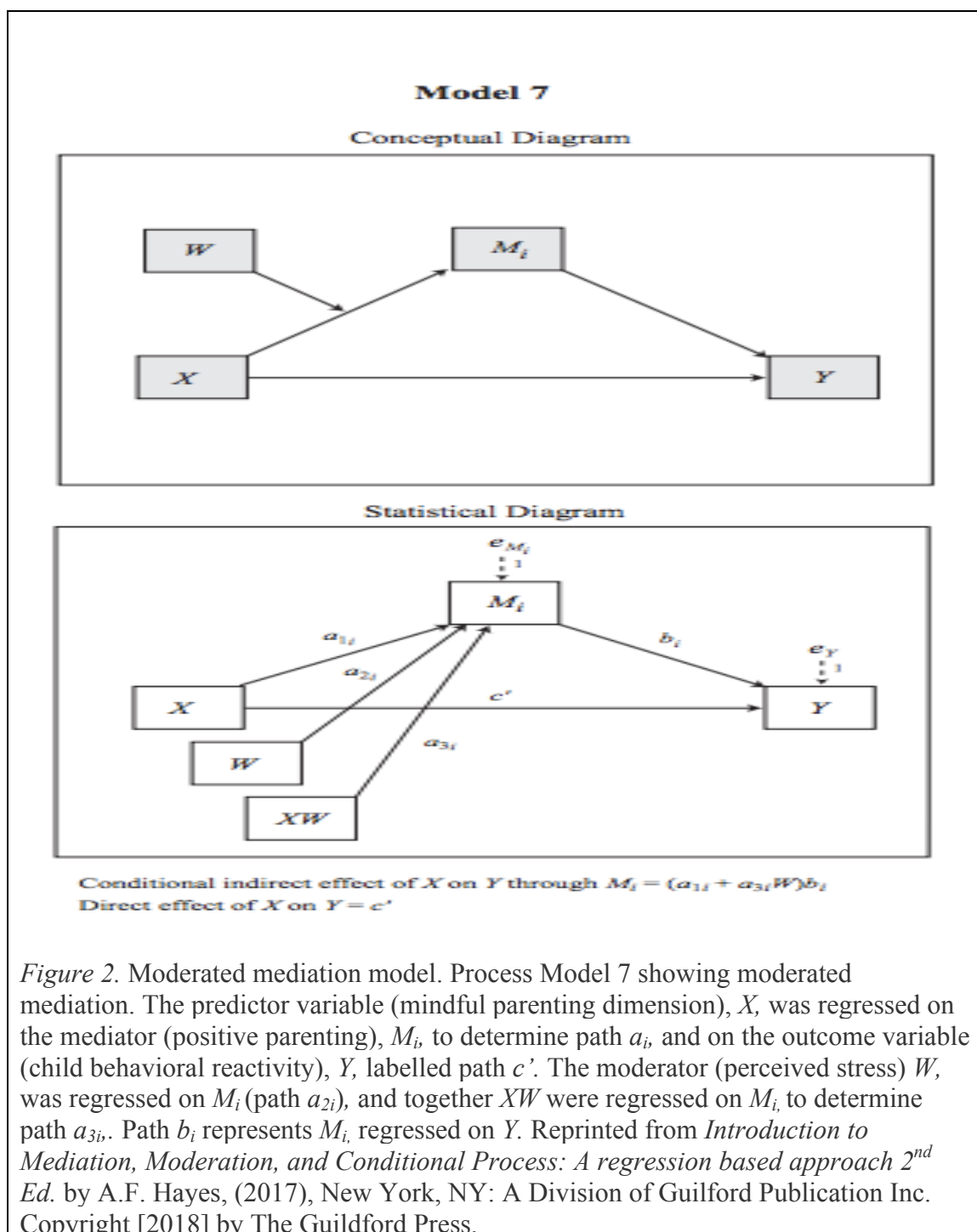
A moderating variable ( $M$ ) changes the strength or direction of the relationship between predictor ( $X$ ) and criterion ( $Y$ ) variables, through influence on variables and on the relationship between variables (Karazsia et al., 2014). The analytic strategy of the moderating effect of stress depends on the nature of predictor variables and moderating variable (Baron & Kenny, 1986). Previous researchers have suggested that when variables are both continuous and it is assumed that the criterion varies linearly with respect to the moderator, the product variable approach should be used (Baron & Kenny, 1986). In this study, the variables are continuous and I assumed that the mindful parenting dimensions varied linearly with respect to positive parenting; therefore, I used the product variable approach. The PROCESS Version 3 macro (Hayes, 2017) computed statistical analysis of moderation through the estimation of  $Y$  as a weighted function of  $X$ ,  $M$ , and  $XM$  (Hayes, 2012). The conditional effect of  $X$  on  $Y$  was estimated through analysis of how much the effect of  $X$  on  $Y$  changed as  $M$  changed by a single unit (Hayes, 2012). The measure of slope between  $XM$  and  $Y$ , was tested for statistical significance and the conditional effect of  $X$  on  $Y$ , was examined at different points of  $M$  in order to identify if the effect was statistically different from zero through null hypothesis testing (Hayes, 2012).

### **Moderated Mediation Analysis**

The moderated mediation Model 7 from Hayes' (2017) PROCESS macro was tested (see Figure 2). The predictor variables were each dimension of mindful parenting ( $X$ ), the mediator was positive parenting ( $M$ ), the moderator was perceived life stress ( $W$ ),



and the outcome variable was the level of child behavior reactivity ( $Y$ ). Once I computed moderation of the relationship between mindful parenting dimensions and child behavioral reactivity by life stress, and the mediation of mindful parenting dimensions and child behavioral reactivity by parent behavior had also been explored, I determined if a moderated mediation relationship existed. Edwards and Lambert (2007) presented an analytical framework that integrated moderated regression analysis and path analysis to allow for estimation and interpretation of relationships in which the mediation of the relationship of a predictor and a criterion varies depending on the presence of a moderator. The first stage moderation model conceptually is one in which the moderator influences the relationships between the predictor and the mediator, and the predictor and the criterion. Hayes (2015) suggested that the coefficients of the predictors in the model be estimated using a least squares regression program. I used Hayes' PROCESS macro, which uses a least squares regression program, to estimate coefficients of mindful parenting dimensions.



### **Threats to Validity**

Threats to the validity of this study were introduced through the uncontrolled nature of survey testing and response error. Survey research is a cost effective way to study relationships among the variables of this study in a high number of participants (Deville, 2012; Groves et al, 2009). The social nature of language itself introduced a risk of miscommunication or misinterpretation of test questions (Bradburn, Sudman, & Wansink, 2004). Participants may have perceived similarities among questions that were not intended, or may have misread questions and recalled information incorrectly (Deville, 2012). Researchers who use surveys to collect data must be aware that low response rate and error could have increased the risk of bias in results, and lead to a nonrepresentative study (Krosnick, 1999). The validity of the current study was threatened by the possibility of low response rate and error. Careless or random responses by participants may inflate the correlation between scales and increased the Type I error (Huang, Liu, Bowling, 2015). Manson and Robbins (2017) noted that participant self-selection introduced the possibility that the participants differed in a meaningful way from the broader population, and caused a nonrepresentative samples. Each of the variables in this study were measured through subjective reporting, which also limits the external validity of this study. I addressed threats to validity through careful selection of testing material, solid exploration of theory and research questions, and appropriate recruitment strategies (Creswell, 2013; Deville, 2012).

### **Ethical Procedures**

The purpose of this study was to explore the association of five dimensions of mindful parenting with positive parent behaviors and child behavioral reactivity, and to further explore whether life stress moderates the relationship. I obtained approval from Walden University's Institutional Review Board (IRB; Approval # 02- 16-18-0437757) prior to participant recruitment and data collection.

Participants were presented with an informed consent page when they initially accessed the study in Qualtrics, which included statements about the voluntary nature of the study. The instructions I included in the informed consent page explicitly told participants that they were not required to finish the questionnaires. I did not ask participants to provide any personally identifying information as a participant of the study; however, they were asked to provide an e-mail address if they were interested in receiving a summary of the study's findings. Participants were asked to answer sociodemographic questions on age, gender, number of children in their care, education, type of caregiving relationship, and the age and gender of the child they thought of as they answer survey questions. Participants were told that they were free to end their participation at any time if they became emotionally upset due to questions regarding mindfulness, perceived life stress, parent behavior, or child behavioral reactivity. Informed consent was documented as each participant was asked to click "Agree" on the page of the electronic version of the informed consent prior to beginning the online survey.

All data were anonymous, collected electronically, and password protected. All data remained only accessible to myself, the dissertation committee, and the Walden University IRB. After the successful defense of this dissertation study, the data will be stored in this manner for 5 years and then destroyed.

### **Summary**

My goal in conducting this study was to build current understanding of dimensions of mindful parenting association with child behavior reactivity, positive parenting behavior, and how these relationships differ in amount or intensity by perceived life stress. I used the online survey method to collect data from caregivers of at least one elementary-aged child. Surveys were used to quantify mindful parenting dimensions, positive parenting, child behavior reactivity, and perceived life stress. Data was analyzed with IBM SPSS, including the SPSS macro, PROCESS Version 3, Hayes (2017). I ran a least squares regression analysis in order to test the strength of association between mindful parenting dimensions, positive parenting practices, and child behavior reactivity. I also analyzed the moderating effect of the indirect relationship between mindful parenting and child behavior reactivity, through positive parenting using least square regression analysis computation in PROCESS (Hayes, 2017). The identification of specific mindful parenting dimensions associated with positive parenting practices and child behavior reactivity may aide in effective identification of parents who would benefit from mindful parenting support. Exploration of the influence of stress on mindful parenting associations with parent and child outcomes may also help service providers

recognize when parents are better suited for stress management and coping support. The results of this study may aide with the development of efficient parent support programs.

## Chapter 4: Results

### **Introduction**

This study was designed to quantitatively explore the association between the dimensions of mindful parenting and child behavioral reactivity. I also intended to explore whether associations of mindful parenting are indirectly related to child behavioral reactivity through positive parenting. Parental perception of life stress was also examined as a potential mediator of the relationship between mindful parenting dimensions and child behavior reactivity through positive parenting. The first research question for the present study was as follows: Which dimensions of mindful parenting are most associated with decreased child behavior reactivity? The null hypothesis was that there would be no difference in the association of any mindful parenting dimension and decreased child behavior reactivity. The alternate hypothesis was that one or more dimensions of mindful parenting would be more associated with decreased child behavioral reactivity. The second research question for the present study was as follows: To what extent does positive parenting behavior mediate the relationship between each dimension of mindful parenting and child behavior reactivity? The null hypothesis was that positive parenting would not mediate the relationship between any dimensions of mindful parenting and child behavior reactivity. The alternate hypothesis was that positive parenting would be a mediator of the relationship between mindful parenting dimensions and child behavior reactivity. The final research question was as follows: To what extent does life stress influence the indirect effect of mindful parenting dimensions

on child behavior reactivity through positive parenting behavior? The null hypothesis for the third research question was that life stress would not influence the indirect effect of mindful parenting dimensions on child behavior reactivity through positive parenting behavior. The alternate hypothesis was that life stress would moderate the indirect effect of mindful parenting dimensions on child behavior reactivity through positive parenting.

In this chapter, I present the data collection process and statistical analysis used for the interpretation of the data. Confidence intervals and effect size, along with descriptive statistics of the sample population are also provided. Next, the results of the data analyses are presented. Overall, Chapter 4 provides the answers to the research questions based on the data collected, analyzed, and interpretation for this study.

### **Data Collection**

I collected data for this study over a 4-week period beginning March 22, 2018 and ending on April 17, 2018. I recruited participants recruited through an announcement of study and a recruitment message posted on social medial parenting sites, Qualtrics, an on-line survey host site and panel, and via paper flyers at local play areas in Calgary, Alberta, Canada. All of the 223 surveys completed came from the Qualtrics research panel site.

A total of 223 individuals accessed the anonymous link for this study. Fourteen individuals did not consent to the study, and another eight individuals did not meet inclusion criteria due to not fulfilling caregiving duties for a child 6 to 12 years of age. Of the remaining 201 participants, 19 surveys were incomplete, which is an incomplete rate



of .09%. The remaining 182 completed surveys were examined, and 16 surveys were eliminated due to straight-line responses or patterned responses. Straight-lined responses were classified as selection of the same responses for over 16 items in a row and were visually identified by the straight-line formed by responses. Pattern responses were identified by a visual pattern of two alternating responses (i.e., 1,4,1,4,1,4...) for at least 16 items in a row. There were a remaining 152 surveys completed that were used in the analysis for this study. A post hoc analysis using the final sample size of 152 participants and a medium effect size indicated that the observed power was .99.

## **Results**

### **Descriptive Statistics for Sociodemographic Characteristics**

Of the 152 caregivers who completed the survey, the majority were White ( $n = 127$ , 83.6%), female ( $n = 107$ , 70%), between the ages of 26 and 35 ( $n = 64$ , 41.2%), and married ( $n = 108$ , 71%). A small majority of participants ( $n = 66$ , 43.4%) were providing care for one child 6 to 12 years, while those caring for two children was close to equivalent ( $n = 61$ , 40.1%). Frequencies and percentages of caregiver demographics are presented in Table 1.

Table 1

*Sociodemographic Characteristics of Caregivers (N = 152)*

Variable	<i>n</i>	%
Caregiver age		
18-25	8	5.3
26-35	63	41.2
36-45	50	34.8
46-55	21	13.8
56-65	5	3.3
> 65	2	1.3
Caregiver gender		
Male	44	29.9
Female	107	70.4
Unknown	1	.7
Relationship status		
Single	20	13.2
Married	108	71.1
Common-law	11	7.2
In relationship, living together	3	2.0
Widowed	2	1.3
Divorced	8	5.3
Formal education		
High School Diploma /GED	59	38.8
University certificate <sup>a</sup>	25	16.4
Bachelor's degree	34	22.4
University certificate <sup>b</sup>	8	5.3
Master's degree	17	11.2
Doctorate or Medical degree	9	5.9
Ethnicity of caregiver		
White	127	83.6
South Asian	2	1.3
Chinese	9	1.3
Black	2	5.9
Filipino	3	1.3
Latin American	1	2.0
Korean	1	.7
Japanese	1	.7
Pacific Islander	1	.7
Two or more races	4	2.6
Children under 13 caregiving for		
One	66	43.4
Two	61	40.1
Three	14	9.2
Four or more	11	7.2

Note: <sup>a</sup> or diploma below bachelor level <sup>b</sup> or diploma above bachelor level.

According to Statistics Canada (2016), 45.7% of Canadians are married, 12.0% are common-law, and 6.2% are divorced. Twenty-two-point three percent of Canadians identified themselves as a visible minority (Statistics Canada, 2016). Statistics Canada reported that 26.5% held a high school diploma, 2.8% a university certificate below a bachelor's, 15.5% a bachelor's degree, 1.6% a university certificate above a bachelor's, .6% a medical degree, 4.6% a master's degree, and .8% a doctorate (Statistics Canada, 2016). The American Psychological Association (2018) estimated the divorce rate in the United States to be approximately 40 to 50%. According to the United States Census Bureau (2018) data, 76.9% of individuals living in the United States identified themselves as White alone, 13.3% as Black or African American, 1.3% as American Indian and Alaska Native alone, 5.7% as Asian Alone, .2% as Native Hawaiian and Other Pacific Islander alone, 17.8% as Hispanic or Latino, and 2.6% as two or more races. In 2017, 87% of Americans over the age of 25 reported they held a high school diploma, and 30.3% held a bachelor's degree or higher (U.S. Census Bureau, 2018). The sample population for this study was not considered to be representative of the broader population of Canada or the United States due to disproportionate representation of married, White individuals who have obtained educational certificates at or above a bachelor's level. This limitation is discussed further in Chapter 5.

The demographic information of the children whose caregivers thought of while completing the survey are presented in Table 2.

Table 2

*Sociodemographic Characteristics of Children*

Variable	<i>n</i>	%
Age		
12	22	14.5
11	26	17.1
10	22	14.5
9	18	11.8
8	28	18.4
7	13	8.6
6	18	11.8
Unknown	5	3.3
Gender		
Male	86	56.5
Female	62	42.1
Unknown	2	1.3
Ethnicity		
White	121	79.6
South Asian	3	2.0
Chinese	1	.7
Black	10	6.6
Filipino	2	1.3
Latin American	3	2.0
Hispanic	1	.7
Two or more races	11	7.3

Information about the nature of the relationship between caregiver and child is presented in Table 3.

Table 3

*Caregiver-Child Relationship Characteristics (N = 152)*

Variable	<i>n</i>	%
Relationship to child		
Biological parent	140	92.1
Adoptive parent	5	3.3
No formal legal status	6	3.9
Foster parent	1	.7
Living arrangement		
Living together	147	96.7
Living together part-time	4	2.6
Living apart	1	.7

The majority of caregivers ( $n = 140$ , 92.1%) identified themselves as the biological parent of the child and currently living full-time together ( $n = 147$ , 96.7%).

### **Preliminary Data Analysis**

During the preliminary data analysis, I examined the relationships between study variables and demographic characteristics to identify correlations between variables and demographics characteristics. To assess for potential confounding variables, I ran a hierarchical regression analysis on the association of mindful parenting dimensions on child behavioral reactivity, while controlling for demographic characteristics (caregiver age, relationship status, number of children providing care for, caregiver education, ethnicity of caregiver, ethnicity of child, gender of child, nature of relationship with child, and living arrangement). Age of caregiver  $t(135) = -3.02$ ,  $p = .003$ ,  $b = -3.46$ , and relationship status  $t(135) = 2.24$ ,  $p = .03$ ,  $b = 6.76$  were significant covariates. All regression analyses were run while controlling for age of caregiver and relationship

status. Coefficients for demographic characteristics and variables are presented in Table 4.

Table 4

*Coefficients for Demographic Variables*

	<i>B</i>	<i>SE B</i>	<i>t</i>	<i>p</i>
<b>Caregiver</b>				
Age	<b>-1.13</b>	<b>.37</b>	<b>-3.02</b>	<b>.003</b>
Gender	-11.81	7.03	-1.69	.10
No. of children	.25	3.45	.07	.94
Rel. status	<b>6.78</b>	<b>3.01</b>	<b>2.25</b>	<b>.03</b>
Education	-3.08	1.78	-1.74	.09
Ethnicity	.93	1.68	.55	.58
<b>Child</b>				
Age	1.86	1.24	1.50	.13
Gender	-2.77	5.42	-.51	.61
Ethnicity	-.60	1.34	-.44	.67
<b>Relationship</b>				
Nature	.237	6.98	.03	.97
Living status	10.72	13.36	.80	.42

*Note.* Significant results ( $p < .05$ ) are shown in boldface.

The reliability of the scales used was also examined for the current population.

The 31 items of the IM-P were rated on a Likert-type scale, from 1 (never true) to 5 (always true). Items that were negatively formulated were reverse scores so that a higher score reflected a greater degree of each dimension of mindfulness in parenting.

Cronbach's alpha for the complete scale, consisting of all subscales was .76. The first subscale, listening with full attention, included five items and the Cronbach's alpha for the current sample was .83. The second subscale, emotional awareness, had a low

Cronbach's alpha for the current population of .54. Although this low it is congruent with previous studies (de Bruin et al., 2014; Guertzen et al., 2015). Cronbach's alpha for the self-regulation subscale, which consisted of 6 items, was .73 in the current study. Cronbach's alpha for acceptance, which included 7 items, was .63. The final subscale, compassion, which included 7 items, had a Cronbach's alpha of .53. Guertzen et al. (2015) reported a Cronbach's alpha of .79 for the compassion subscale (6 items); however, additional items were added to the current IM-P, expanding the IM-P from 29 items to 31 items. The Cronbach's alpha for the current compassion subscale (7 items) has not previously been reported. The PSS-R was used to measure parent perception of life stress. The scale consisted of a 12 item Likert-type scale, ranging from 0 (never) to 4 (very often) and had a Cronbach's alpha of .78 for the current population. The Cronbach's alpha for the intensity subscale of the ECBI was .77. The ECBI was used to measure childhood behavioral reactivity through 36, 7-point Likert scale that ranged from 1 (never) to 7 (always). The positive parenting subscale of the MAPS measure was used to measure the positive parenting variable. The subscale included 16 Likert-type items that ranged from 1 (never) to 5 (always). The Cronbach's alpha for the current population was .90. The Cronbach's alpha for all scales used in the current study are reported in Table 5.

Table 5

*Reliability of Scales*

Scales	<i>N</i>	Cronbach's Alpha	Number of Items
Attention	152	.83	5
Emotion aw.	152	.54	6
Self-reg.	152	.73	6
Acceptance	152	.63	7
Compassion	152	.53	7
PSS-R	152	.77	12
ECBI	152	.77	36
MAPS PP	151	.90	16

**Assumptions**

The Kolmogorov-Smirnov test revealed that the assumption of normal distribution was not met for some variables. The PSS-R,  $D(152) = .075$ ,  $p = .038$ , positive parenting,  $D(152) = .083$ ,  $p = .012$ , and the ECBI,  $D(152) = .095$ ,  $p = .002$ , deviated significantly from normal. On the IM-P, attention,  $D(152) = .120$ ,  $p < .001$ , IM-P emotional awareness,  $D(152) = .123$ ,  $p < .001$ , compassion,  $D(152) = .074$ ,  $p = .039$ , and self-regulation,  $D(152) = .081$ ,  $p = .015$ , all deviated significantly from normal. On the IM-P, acceptance,  $D(152) = .067$ ,  $p = .092$ , did not deviate significantly from normal. Estimations of model parameters do not require normality of data; however, nonnormality causes inaccuracy of significance tests and confidence intervals around parameter estimates. In order to overcome these limitations, the multiple forced



regression of the 5 dimensions of mindful parenting was re-run using bias corrected accelerated bootstrapping to 1000 samples. All mediation and moderation were run with bootstrapped confidence intervals and standard error based on 5000 samples.

In order to identify outliers,  $z$ -scores were calculated and an absolute value of 3.29 was used as a cut-off. One score was identified as an extreme outlier ( $z = 4.29$ ), and it was removed from the positive parenting score set. No standardized or studentized residuals were problematic ( $> 3.29$ ). Four Mahalanobis distance scores were greater than 15.09. The distance from the chi-square distribution table for five predictors ( $p = .01$ ), however, Cook's distance was less than 1 for all four scores, and so the data points were not deleted.

Predicted values and errors were converted to *zpred vs. zresid* plot, which indicated that there were no violations of the assumptions of linearity and homoscedasticity together as no systematic relationship between the errors in the model and the predictions of the model was present. There were no substantial correlations ( $r > .8$ ) between any two of the predictor variables. The variance inflation factor for each predictor was not substantially greater than 1, and the tolerance statistics were above .2, indicating that multicollinearity was not a cause for concern. In order to assess for independence of errors, the Durbin-Watson statistic, a test of serial correlations between residual error terms was examined, and the value of 1.89, suggested that there was no significant autocorrelation.

### **Research Questions and Hypotheses**

The first research question examined was the following: Which dimensions of mindful parenting are most associated with decreased child behavior reactivity?

$H_1$ 1: One or more dimensions of mindful parenting will be more associated with decreased child behavioral reactivity.

$H_0$ 1: All dimensions of mindful parenting will be equally associated with decreased child behavioral reactivity.

To determine the amount of association between each of the dimensions of mindful parenting and child behavior reactivity, a forced entry multiple regression was performed while controlling for covariates (age of caregiver and relationship status). Forced entry was chosen because none of the predictors were identified as more influential *a priori*. The descriptive statistics for all variables identified for the three research questions of this study are presented in Table 6.

Table 6

*Descriptive Statistics for Variables*

Tests						
	<i>N</i>	Min.	Max.	Mean.	Mean std. error	Std. deviation
Attention	152	7	23	16.41	.254	3.13
Emotion aw.	152	14	29	22.18	.239	2.94
Self-reg.	152	11	30	21.11	.318	3.92
Acceptance	152	16	35	25.24	.314	3.87
Compassion	152	15	33	23.66	.296	3.65
PSS-R	152	4	42	20.89	.584	7.20
ECBI	152	36	215	109.72	3.52	43.42
MAPS	151	2	5	4.03	.043	.527
Valid <i>n</i>	152					

*Note.* Alpha < .005

A forced entry multiple regression was calculated to determine the degree of association between the five dimensions of mindful parenting and child behavior reactivity, while controlling for age of caregiver and relationship status. A significant regression equation was found,  $F(5,144) = 15.427$   $p < .001$ , with an  $R^2$  Change of .325. This suggests that 33% of the criterion variability was accounted for by the model predictors, after controlling for covariates. The information is presented in Table 7.

Table 7

*Multiple Regression Model Summary*

Model	<i>R</i>	<i>R</i> square	Adjusted <i>R</i> square	<i>R</i> Square Change	Standard error of estimates	Sig <i>F</i> Change
1	<b>.250</b>	<b>.062</b>	<b>.05</b>	<b>.06</b>	<b>42.33</b>	<b>.008</b>
2	<b>.622</b>	<b>.387</b>	<b>.357</b>	<b>.325</b>	<b>34.81</b>	<b>&lt;.001</b>

*Note.* *p*-value <.001 Model 1 Predictors: (Constant), Caregiver age, Relationship status. Model 2 Predictors: IM-P Attention, IM-P Emotional Awareness, IM-P Self-regulation, IM-P Acceptance, IM-P Compassion. Criterion variable: ECBI Significant results (*p* < .05) are shown in boldface.

Acceptance,  $t(146) = -4.10, p = .001, b = -3.46$ , and attention,  $t(146) = -3.01, p = .003, b = -3.19$ , were significantly and negatively associated with child behavior reactivity. Child behavior reactivity scores decreased by -4.10 for each increase of parent scores on the acceptance dimension of the IM-P, making acceptance the dimension of mindful parenting most associated with decreased child behavior reactivity. For each point increase on the attention scale of the IM-P, child behavior reactivity decreased by -3.01 points. The remaining variables were not significantly associated with child behavior reactivity. Emotional awareness,  $t(146) = -4.06, p = .69, b = -.47$ , and compassion,  $t(146) = -1.15, p = .25, b = -1.27$ , both demonstrated a negative nonsignificant association with child behavior reactivity. Self-regulation,  $t(146) = .52, p = .61, b = .56$ , had a direct association with child behavioral reactivity that was not significant. The dimensions of mindful parenting were found to have different levels of association with child behavior reactivity; therefore, the null hypothesis was not supported. These results are illustrated in Table 8.

Table 8

*Linear Model of Predictors of Child Behavior Reactivity*

Predictor	b	SE B	$\beta$	t	p	95% CI	
						LL	UL
(Constant)	319.96	27.00		11.84	<.001	258.73	376.25
Attention	<b>-3.19</b>	<b>1.06</b>	<b>-.22</b>	<b>-3.01</b>	<b>.003</b>	<b>-5.33</b>	<b>-.841</b>
Emotional aw.	-.47	1.16	-.03	-.406	.685	-2.79	1.68
Self-reg	.56	1.07	.05	.517	.606	-1.71	1.89
Acceptance	<b>-4.20</b>	<b>1.21</b>	<b>-.37</b>	<b>-3.46</b>	<b>.001</b>	<b>-6.537</b>	<b>-1.46</b>
Compassion	-1.26	1.11	-.13	-1.15	.253	-3.96	.781

*Note.* bias corrected and accelerated confidence intervals and standard errors based on 1000 bootstrap samples. Significant results ( $p < .05$ ) are shown in boldface.

The second research question examined was: To what extent does positive parenting behavior mediate the relationship between each dimension of mindful parenting and child behavior reactivity?

$H_{12}$ : Positive parenting behavior will mediate the relationship between each dimension of mindful parenting and child behavior reactivity.

$H_{02}$ : Positive parenting behavior will not mediate the relationship between each dimension of mindful parenting and child behavior reactivity.

To determine the possible mediation effect of positive parenting on the association of each mindful parenting dimension and child behavior reactivity, an estimation of the indirect effect was produced using the SPSS macro, PROCESS Version 3, Hayes (2017) Model 4. Mediation analysis were completed while controlling for age of caregiver and relationship status. Due to the nonnormality of the data the robust analysis

technique, bootstrapping, was used to test the significance of the indirect effects. Partially standardized indirect effects ( $ab_{ps}$ ) and completely standardized indirect effects ( $ab_{cs}$ ) were used to compare the effect size of mediation analysis.

There was a significant indirect effect of emotional awareness on child behavior reactivity through positive parenting,  $b = -1.16$ , BCa CI [-2.19, -.04]; however, the effect size was small ( $ab_{ps} = -.03$ ,  $ab_{cs} = -.08$ ). There was also a significant indirect effect of attention on child behavior reactivity through positive parenting, ( $b = -.54$ , BCa CI [-.18, -.05]). This also had a small effect size ( $ab_{ps} = -.01$ ,  $ab_{cs} = -.04$ ). The indirect effects of the remaining dimensions were all nonsignificant; self-regulation,  $b = -.71$ , BCa CI [-1.58, .11], acceptance,  $b = -.35$ , BCa CI [-1.13, .44], and compassion,  $b = -.63$ , BCa CI [-1.36, .06]. The respective partially standardized indirect effects were  $ab_{ps} = -.02$ ,  $-.01$ ,  $-.01$ . The respective completely standardized indirect effects for self-regulation, acceptance, and compassion were  $ab_{cs} = -.06$ ,  $-.03$ ,  $-.05$ . The null hypotheses for emotional awareness and attention were not supported; however, the null hypotheses for self-regulation, acceptance and compassion were supported. Table 9 presents the simple regression, indirect effects, and bootstrapped confidence intervals. Partially standardized indirect effects, and completely standardized indirect effects for each the mediation analysis of positive parenting on the association of each of the five dimensions of mindful parenting on child behavior reactivity are presented in Table 10.

Table 9

*Linear Model of Mediation for Predictors of Child Behavior Reactivity*

Predictor	B	SE B	t	p	95% CI	
					LL	UL
<b>Attention</b>						
Path <i>a</i>	.44	.22	1.99	.05		
Path <i>b</i>	<b>-1.16</b>	<b>.36</b>	<b>-3.12</b>	<b>&lt;.001</b>		
Path <i>c</i> '	<b>-5.19</b>	<b>.98</b>	<b>-5.29</b>	<b>&lt;.001</b>		
Path <i>c</i>	<b>-5.70</b>	<b>1.00</b>	<b>-5.70</b>	<b>&lt;.001</b>		
Indirect effect	<b>-.54</b>	<b>.312</b>			<b>-.18</b>	<b>-.05</b>
<b>Emotion awareness</b>						
Path <i>a</i>	<b>1.18</b>	<b>.22</b>	<b>5.48</b>	<b>&lt;.001</b>		
Path <i>b</i>	<b>-1.04</b>	<b>.42</b>	<b>-2.33</b>	<b>.02</b>		
Path <i>c</i> '	<b>-3.53</b>	<b>1.21</b>	<b>-2.92</b>	<b>.004</b>		
Path <i>c</i>	<b>-4.68</b>	<b>1.12</b>	<b>-4.19</b>	<b>&lt;.001</b>		
Indirect effect	<b>-1.16</b>	<b>.544</b>			<b>-2.19</b>	<b>-1.4</b>
<b>Self-regulation</b>						
Path <i>a</i>	<b>.94</b>	<b>.16</b>	<b>5.86</b>	<b>&lt;.001</b>		
Path <i>b</i>	<b>-.75</b>	<b>.41</b>	<b>-1.82</b>	<b>&lt;.001</b>		
Path <i>c</i> '	<b>-3.61</b>	<b>.89</b>	<b>-4.04</b>	<b>&lt;.001</b>		
Path <i>c</i>	<b>-4.32</b>	<b>.81</b>	<b>-5.32</b>	<b>&lt;.001</b>		
Indirect effect	<b>-.71</b>	<b>.41</b>			<b>-1.58</b>	<b>.11</b>
<b>Acceptance</b>						
Path <i>a</i>	<b>.98</b>	<b>.16</b>	<b>6.10</b>	<b>&lt;.001</b>		
Path <i>b</i>	<b>-.36</b>	<b>.39</b>	<b>-.93</b>	<b>.36</b>		
Path <i>c</i> '	<b>-5.54</b>	<b>.85</b>	<b>-6.43</b>	<b>&lt;.001</b>		
Path <i>c</i>	<b>-5.8</b>	<b>.76</b>	<b>-7.66</b>	<b>&lt;.001</b>		
Indirect effect	<b>-.35</b>	<b>.40</b>			<b>-1.13</b>	<b>.44</b>
<b>Compassion</b>						
Path <i>a</i>	<b>.84</b>	<b>.18</b>	<b>4.71</b>	<b>&lt;.001</b>		
Path <i>b</i>	<b>-.74</b>	<b>.39</b>	<b>-1.93</b>	<b>.06</b>		
Path <i>c</i> '	<b>-4.73</b>	<b>.90</b>	<b>-5.24</b>	<b>&lt;.001</b>		
Path <i>c</i>	<b>-5.35</b>	<b>.85</b>	<b>-6.32</b>	<b>&lt;.001</b>		
Indirect effect	<b>-.63</b>	<b>.36</b>			<b>-1.36</b>	<b>.06</b>

*Note.* Bias corrected and accelerated confidence intervals and standard errors based on 5000 bootstrap samples. Significant mediation results ( $p < .05$ ) are shown in boldface.

Table 10

*Partially and Completely Standardized Indirect Effects for Each the Mediation Analysis*

Predictor	<i>B</i>	95% CI	
		LL	UL
<b>Attention</b>			
<i>ab<sub>ps</sub></i>	-.01	-.03	-.001
<i>ab<sub>cs</sub></i>	-.04	-.08	-.003
<b>Emotion awareness</b>			
<i>ab<sub>ps</sub></i>	-.03	-.06	-.003
<i>ab<sub>cs</sub></i>	-.08	-.15	-.01
<b>Self-regulation</b>			
<i>ab<sub>ps</sub></i>	-.02	-.04	.002
<i>ab<sub>cs</sub></i>	-.06	-.14	.01
<b>Acceptance</b>			
<i>ab<sub>ps</sub></i>	-.01	-.03	.01
<i>ab<sub>cs</sub></i>	-.03	-.10	.04
<b>Compassion</b>			
<i>ab<sub>ps</sub></i>	-.01	-.03	.001
<i>ab<sub>cs</sub></i>	-.05	-.12	.01

*Note.* bias corrected and accelerated confidence intervals and standard errors based on 5000 bootstrap samples

Finally, in the third research question was: To what extent does life stress influence the indirect effect of mindful parenting dimensions on child behavior reactivity through positive parenting behavior?

*H<sub>13</sub>*: Life stress will moderate the indirect effect of mindful parenting dimensions on child behavior reactivity through positive parenting behavior.

*H<sub>03</sub>*: Life stress will not moderate the indirect effect of mindful parenting dimensions on child behavior reactivity through positive parenting behavior.

To determine the possible moderation of stress on the indirect effect of each mindful parenting dimension on child behavior reactivity through positive parenting, a



moderated mediation analysis was run using SPSS macro PROCESS Version 3 by Hayes (2017), Model 7. The moderated mediation analysis was run while controlling for age of caregiver and relationship status. As with the mediation analysis, bootstrapped index of mediated moderation was used to test the significance of the indirect effects. Completely standardized indirect effect ( $ab_{cs}$ ), also known as the index of moderated mediation, was used to compare the effect size of moderated mediation analysis. Johnson-Neyman technique was used to identify the zones of significance.

The first stage of the PROCESS (Hayes, 2017) analysis produced an estimation of the moderation for each mindful parenting dimension's effect on positive parenting. The strongest moderation by life stress was observed on the relationship between compassion and positive parenting,  $b = -.08$ , BCa CI  $[-.12, -.03]$ ,  $p < .001$ . In order to interpret the moderation, compassion was regressed on positive parenting when perceived stress levels were one standard deviation below the mean, at the mean, and above the mean. The effect of compassion on positive parenting was significant when perceived stress level was low,  $b = 1.36$ , CI  $[.85, 1.87]$ ,  $p < .001$ , and when the perceived stress level was average,  $b = .76$ , CI  $[.34, 1.18]$ ,  $p < .001$ . The effect of compassion on positive parenting and at a high level of perceived stress was not significant,  $b = .34$ , CI  $[-.19, .88]$ ,  $p = .22$ . Johnson-Neyman values indicated that the effect of compassion on positive parenting reached the threshold of significance when the perceived stress level was 4.79,  $b = .46$ , CI  $[.00, .92]$ ,  $p = .05$ . The conditional indirect effect of compassion on child behavior reactivity was not significant across levels of perceived stress, when perceived stress was one standard

deviation below the mean,  $b = -1.03$ , BCa CI [-2.14, .17], mean centered,  $b = -.57$ , BCa CI [-1.30, .10], and one standard deviation above the mean,  $b = -.24$ , BCa CI [-.84, .20]. The index of moderated mediation confirmed that no moderated mediation occurred, Index = .06, Ba CI [-.01, .13].

Perceived stress moderated the relationship between acceptance and positive parenting in a negative direction,  $b = -.05$ , BCa CI [-.09, -.01],  $p = .01$ , and at a strength slightly less than moderation of compassion and positive parenting. The relationship between acceptance and positive parenting was significant when perceived stress was one standard deviation below the mean,  $b = 1.48$ , CI [1.00, 1.77],  $p < .001$ , when perceived stress was mean centered,  $b = 1.04$ , CI [.59, 1.19],  $p < .001$ , and also when the level of perceived stress was one standard deviation above the mean,  $b = .76$ , CI [1.75, 1.07],  $p = .002$ . This demonstrates that as the level of perceived stress increased, the effect of acceptance on positive parenting decreased. The effect of acceptance on positive parenting was significant when perceived stress level increased up to 8.97,  $b = .50$ , CI [.00, 1.00],  $p = .05$ , at which point the Johnson-Neyman values indicated that the threshold of significance was crossed. As the levels of perceived stress increased, the effect of acceptance on positive parenting decreased. The conditional indirect effect of acceptance on child behavior reactivity was not significant across levels of perceived stress. The conditional indirect effect marginally changed from low levels of perceived stress  $b = -.53$ , BCa CI [-1.69, .69], average levels of perceived stress,  $b = -.38$ , BCa CI [-1.23, .50], or high levels perceived stress,  $b = -.27$ , BCa CI [-.96, .36]. The index of

moderated mediation crossed a value of zero, index = .02, Ba CI [-.03, .07], which confirmed that no moderated mediation occurred.

The relationship between self-regulation and positive parenting was significantly negatively moderated by perceived stress,  $b = -.05$ , BCa CI [-.10, 3.06],  $p < .001$ . In order to interpret the moderation, regression of self-regulation on positive parenting the effect of self-regulation was examined when perceived stress was one standard deviation below the mean, at the mean, and above the mean. The effect of self-regulation on positive parenting was significant when perceived stress levels were low,  $b = 1.29$ , CI [.84, 1.75],  $p < .001$ , at average levels,  $b = .86$ , CI [.51, 1.21],  $p < .001$ , and at high levels of stress,  $b = .56$ , CI [.09, 1.03],  $p = .02$ . Johnson-Neyman values indicate that as the level of perceived stress increased the strength of the relationship between self-regulation and positive parenting decreased, and reached the threshold of significance when perceived stress value equaled 9.73 ( $b = .43$ , CI [-.03, .91],  $p < .07$ ). The conditional indirect effect of self-regulation on child behavior reactivity was not significant across levels of perceived stress; low  $b = -.93$ , BCa CI [-.222, .32], average perceived stress,  $b = -.64$ , BCa CI [-.146, .23], or high perceived stress,  $b = -.43$ , BCa CI [-1.16, .18]. The index of moderated mediation confirmed that there was not a significantly different from zero effect due to moderated mediation, index = .04, BCa CI [-.01, .11].

Stress moderated the relationship between attention and positive parenting,  $b = -.08$ , BCa CI [-.15, .01],  $p = .02$ . The relationship between attention and positive parenting was only significant when the level of perceived stress was one standard deviation below

the mean,  $b = .97$ , CI [.22, 1.73],  $p = .01$ . The conditional indirect effect of attention on child behavior reactivity was also only significant when the level of perceived stress was low (one standard deviation below the mean),  $b = -1.14$ , BCa CI [-2.71, -.10], and was not significant at average (mean centered) levels of perceived stress  $b = -.42$ , BCa CI [-1.10, .11],  $p = .17$  or high (one standard deviation above the mean)  $b = .11$ , BCa CI [-.63, .98],  $p = .69$ . The index of moderated mediation, .09, Ba CI [-.001, .24]. confirmed that the difference was not significantly difference from zero. There was not a significant moderation effect of stress on the relationship between emotional awareness and positive parenting as demonstrated by the nonsignificant interaction effect,  $b = -.03$ , BCa CI [-.09, .03],  $p = .36$ . The conditional indirect effect of emotional regulation on child behavior reactivity was not significant at any level of perceived stress; low (one standard deviation below the mean),  $b = -1.27$ , BCa CI [-2.78, -.15], average  $b = -1.05$ , BCa CI [-2.09, -.11], or high  $b = -.90$ , BCa CI [-1.87, -.06]. The index of moderated mediation, .03, Ba CI [-.03, .14], confirmed that the difference was not significantly different from zero.

There was no moderated mediation by life stress on any mindful parenting dimension on child behavior reactivity through positive parenting; therefore, the null hypothesis for research question three was supported. The results of each moderated mediation analysis are presented in Table 11, and the index of each moderated mediation is shown in Table 12.

Table 11

*Moderation of Predictors Association With Child Behavior Reactivity by Stress*

Predictor	b	SE B	t	p	95% CI	
					LL	UL
Constant	31.15	14.52	2.12	.03	2.46	59.83
Attention	<b>2.09</b>	<b>.82</b>	<b>2.56</b>	<b>.01</b>	<b>.48</b>	<b>3.7</b>
Stress	1.18	.59	2.01	.05	.02	2.35
Attention X stress	<b>-.08</b>	<b>.03</b>	<b>-2.33</b>	<b>.02</b>	<b>-.15</b>	<b>.01</b>
Constant	24.99	15.90	1.57	.12	-6.44	56.41
Emotional A	<b>1.69</b>	<b>.65</b>	<b>2.61</b>	<b>.01</b>	<b>.41</b>	<b>2.98</b>
Stress	.57	.70	.82	.42	-.81	1.94
Emotional Aw X stress	-.03	.03	-.93	.36	-.09	.03
Constant	18.43	11.82	1.56	.12	-4.94	41.80
Self-regulation	<b>2.05</b>	<b>.51</b>	<b>4.03</b>	<b>&lt;.001</b>	<b>1.05</b>	<b>3.06</b>
Stress	<b>1.18</b>	<b>.52</b>	<b>2.29</b>	<b>.02</b>	<b>.16</b>	<b>2.21</b>
Self-reg. X stress	<b>-.05</b>	<b>.02</b>	<b>-2.33</b>	<b>&lt;.001</b>	<b>-.10</b>	<b>3.06</b>
Constant	.91	13.34	.07	.94	-25.51	27.33
Acceptance	<b>2.22</b>	<b>.47</b>	<b>4.78</b>	<b>&lt;.001</b>	<b>1.30</b>	<b>3.14</b>
Stress	<b>1.54</b>	<b>.55</b>	<b>2.81</b>	<b>.01</b>	<b>.46</b>	<b>2.63</b>
Acceptance X stress	<b>-.05</b>	<b>.02</b>	<b>-2.61</b>	<b>.01</b>	<b>-.09</b>	<b>-.01</b>
Constant	4.95	13.52	.36	.71	-21.77	31.67
Compassion	<b>2.41</b>	<b>.52</b>	<b>4.60</b>	<b>&lt;.001</b>	<b>1.38</b>	<b>3.45</b>
Stress	<b>1.85</b>	<b>.58</b>	<b>3.19</b>	<b>.002</b>	<b>-.12</b>	<b>-.03</b>
Compassion X stress	<b>-.08</b>	<b>.02</b>	<b>-3.12</b>	<b>&lt;.001</b>	<b>-.12</b>	<b>-.03</b>

as corrected and accelerated confidence intervals and standard errors based on 5000 bootstrap samples. Significant results ( $p < .05$ ) are shown in boldface.

Table 12

*Index of Moderated Mediation*

Predictor	Index	SE	LL	95% CI
				CI
Attention	.09	.06	-.002	.24
Emotional aw.	.02	.04	-.03	.14
Self-regulation	.04	.03	-.01	.12
Acceptance	.02	.02	-.03	.07
Compassion	.06	.03	-.01	.13

Note. Bootstrap to 5000 SE and confidence intervals reported

### **Summary**

The results from this research demonstrated that the five dimensions of mindful parenting are not equally associated with child behavior reactivity. The null hypothesis was not supported. The mindful parenting dimension of acceptance was significantly associated with decreased child behavior reactivity, followed closely by the dimension of attention, which was also significantly and negatively associated with child behavior reactivity. The dimensions of compassion and emotional awareness were negatively associated with child behavior reactivity; however, these associations were not significant. Self-regulation was the only dimension of mindful parenting that demonstrated a positive association with child behavior reactivity; however, this relationship was nonsignificant.

The results from this research also showed that positive parenting mediated the relationship between some mindful parenting dimensions and child behavior reactivity to varying degrees. The null hypothesis for the second research question was not supported. Positive parenting mediated the relationship between emotional awareness and child behavior reactivity in a negative direction. A significant negative mediation also occurred for the attention dimension. There was no significant mediation of effects of the remaining three dimensions of mindful parenting, compassion, self-regulation, and acceptance, on child behavior reactivity.

The results of the moderated mediation analysis demonstrated that the effects of mindful parenting dimensions on child behavior reactivity through positive parenting were not moderated by perceived life stress. An additional finding from this research was that perceived life stress moderated the effects of compassion, acceptance, attention, and self-regulation on positive parenting. The third research question focused on whether or not moderated mediation of mindful parenting dimensions on child behavior reactivity were found, and therefore, the null hypothesis was supported. In chapter 5, I interpret the results from this study, and discuss the application of results toward positive social change.

## Chapter 5: Discussion, Conclusions, and Recommendations

### **Introduction**

The study was conducted to explore which dimensions of mindful parenting are most associated with decreased child behavior reactivity. The present study was important because correct identification of specific dimensions of mindful parentings that are more or less associated with child behavioral reactivity can help researchers and clinicians to streamline interventions for caregivers who are struggling with behavioral reactivity in their elementary-aged children. This study was also designed to explore whether positive parenting mediated the relationship between mindful parenting dimensions and child behavior reactivity. This is also important to help differentiate the appropriateness of skill-based parent training versus mindfulness-based parenting support. The final purpose of this study was to examine the possible influence of life stress on indirect associations of mindful parenting on child behavior reactivity. The results from this exploration can help service providers recognize when to deploy stress management and coping support to caregivers who are struggling with child behavior reactivity.

The mindful parenting dimensions of acceptance and attention had significant negative associations with child behavior reactivity. Increased acceptance was most associated with decreased child behavior reactivity, followed by attention. Emotional awareness and compassion were also negatively associated with child behavior reactivity; however, these associations were not significant. Self-regulation had a positive



nonsignificant association with decreased child behavior reactivity. Positive parenting significantly mediated the associations of two dimensions of mindful parenting, emotional awareness and attention, and child behavior reactivity. The association between the remaining dimensions, self-regulation, acceptance, and compassion, and child behavior reactivity were not significantly mediated by positive parenting. There was no moderated mediation by stress on any mindful parenting dimension on child behavior reactivity through positive parenting; however, stress significantly moderated the relationship between the dimensions of acceptance, compassion, self-regulation, and positive parenting.

### **Interpretation of the Findings**

As I reviewed in Chapter 2, mindfulness in parenting is associated with adaptive parenting, less parental stress, and less child behavior issues (Beer et al., 2013; Meppelink et al., 2016); however, the association of each dimension of mindful parenting with positive outcomes, such as child behavior reactivity, was previously not known (Townshend, 2016). The results of the present study demonstrate that each dimension of mindful parenting has a different association with child behavior reactivity from each other. Children have different needs at various stages of development, which is thought to explain why specific dimensions are more influential as children grow and change (Duncan et al., 2009a). In the present study, I did not propose any specific dimension of mindfulness to be more associated with decreased child behavior reactivity than another; however, I assumed that the relationship between all dimensions of mindfulness and child

behavior reactivity would be inverse. The results from this study did not demonstrate an inverse relationship between all dimensions of mindful parenting and child behavioral reactivity. I discuss the differences found below.

The results revealed that acceptance and attention were the only two dimensions with significant negative associations with child behavior reactivity, and that acceptance had a marginally stronger association. These results are similar to past research that has found that parents who are more mindful report fewer behavioral problems exhibited by their children (Beer et al., 2013). Similarly, Guertzen et al. (2015) found that acceptance was significantly negatively associated with decreased adolescent anxiety and depression. Researchers have suggested that acceptance may reduce caregiver over identification with painful feelings and facilitate acceptance of challenges and failures that arise in the caregiver role (Guertzen et al. 2015). The results from the present study also identified that acceptance had the strongest significant association with decreased child behavioral reactivity. Duncan et al. (2009a) noted that acceptance in mindful parenting includes parental awareness of their automatic judgements of the child and behavior that interfere with positive parent-child interaction, which, therefore, helps the parent to set clear and reasonable expectations for the child. Attention involves being fully present and conveying to the child that they have undivided attention (Duncan et al., 2009a). Paying attention to the child is thought to help the parent to foster a sensitivity to their child's cues and develop an internal representation of the child's perspective (Duncan et al., 2009a). It may be that attention and acceptance help the parent to notice, understand, and

appropriately respond to behavioral challenges in elementary-aged children. This is supported by previous findings that mindful parents were more attuned and responsive to the needs of their child (Campbell et al., 2017). It may also be that attention and acceptance therefore reduce parent-child interactions that frustrate the child, interactions that could provoke child behavior reactivity. Child behavior reactivity that is driven by a desire to gain attention from the caregiver, known as secondary gain, may also be reduced when caregivers are paying attention to the child and attend to positive behavior while not overresponding to negative child behavior (van der Oord et al., 2012). Emotional awareness and compassion were positively associated with decreased child behavioral reactivity; however, these relationships were not significant. This suggests that acceptance and attention may be more in line with the developmental tasks or needs of elementary-aged children than emotional awareness and compassion. Behavioral challenges are a daily reality for most caregivers to elementary-aged children, and even the most consistent responses take time to change behavior. Given that attention and acceptance help caregivers to be consistent and convey understanding of the child, it is not surprising that elementary-aged children receiving these messages from their caregiver have less behavioral problems. Furthermore, disruption to maternal caring during early development is known to interrupt children's ability to adapt and respond to stress (Boyce & Ellis, 2005). Previous research has linked difficulty adapting to childhood behavior with increased parent depression and anxiety (Tellegen & Sanders, 2014). It may be that acceptance of child behavior and caregiver limitations helps to

prevent the development of parent conditions that interfere with child-caregiver interaction. The current research findings suggest that attention and acceptance are core features of caring attachment behavior for caregivers of elementary-aged children.

Self-regulation was the only dimension of mindful parenting that demonstrated a negative relationship with child behavioral reactivity; however, this was a nonsignificant relationship. Further studies are needed to understand this association. Self-regulation consists of reducing reactive responses to normative child behaviors in order to select parenting responses that are in-line with the caregiver's values (Duncan et al., 2009a). Self-regulation occurs when the caregiver feels anger and chooses not to demonstrate it (Duncan et al., 2009a). Ellis et al. (2011), referenced the differential susceptibility model to suggest that parent and child emotional responses are reciprocal and interconnected. Boyce and Ellis (2005) noted that individuals have different levels of sensitivity to environmental factors, such as parent reactivity. Previous researchers found that child and caregiver's hypothalamic-adrenal-pituitary axis activity during stressors are interconnected as a mechanism for both buffering and enhancing the impact of stress on the child, depending on their context and developmental need (Laurent et al., 2017). In some contexts, such as high stress environments, caregivers maintained a higher level of cortisol activation as a way to maintain parent-child engagement (Laurent et al., 2017). The current research may suggest that some level of caregiver reactivity may enhance parent-child interactions, by focusing the caregiver on child. In some cases, overregulation of caregiver emotion inhibits attachment behavior or reflects an

interruption to responsiveness such as is found with depressed mothers (Priel, Djalovski, Zagoory-Sharon, & Feldman, 2018). However, it should be noted that the influence of a caregiver's stress response to any child is no longer considered positive when said responses become overly reactive or negative, both of which are associated with increased behavioral reactivity in children (Mackrell et al., 2014).

Mindful parenting has previously been found to be indirectly associated with decreased child behavior reactivity through positive parenting practices (de Bruin et al., 2014; Gouveia et al., 2016; Parent et al., 2016). The results from the present study supported this relationship and showed specifically that the dimensions of emotional awareness and attention have a significant negative indirect relationship with child behavioral reactivity through positive parenting. This shows that as emotional awareness and attention increase, child behavior reactivity decreases, and this is mediated by positive parenting. Duncan et al. (2009a) suggested that emotional awareness is pivotal to parenting practices. The reason for this is that automatic cognitive processes and behaviors associated with strong unnoticed emotional responses often undermine positive parenting (Duncan et al., 2009a). Emotional awareness is thought to interrupt the automaticity of parent response, thereby allowing the parent to actively choose the response to the child (Duncan et al., 2009a). Listening with full attention includes the quality of listening and awareness of the child's emotional context (Duncan et al., 2009a). Dispositional mindfulness in parents is associated with increased responsiveness to children (Campbell et al., 2017). Paying attention to the contextual factors of the child,

which is a central feature of mindful attention, may facilitate the selection of appropriate caregiving practices. This is supported by the results from prior research that found mindfulness in parenting to be associated with authoritative and consistent parenting practices (Gouveia et al., 2016; Parent et al., 2016).

Parent-specific mindfulness has been found to moderate the influence of life-stress during caregiver-child interactions (Laurent et al., 2017) and is associated with positive child outcomes (Laurent et al., 2017; Meppelink et al., 2016; Parent et al., 2016). Mindfulness is associated with decreased parenting stress (Gouveia et al., 2016; van der Oord et al., 2012); however, the influence of life stress on associations of mindful parenting dimensions with child behavior reactivity through positive parenting has previously not been understood. The present research does not support the moderating role of life stress on the indirect effect of mindful parenting dimensions on child behavior reactivity through positive parenting. The model proposed by Duncan et al. (2009a) suggests five different dimensions of mindfulness in parenting, and each dimension is able to operate independently and interdependently. The current results demonstrated that life stress moderated the relationship of some dimensions with positive parenting and that positive parenting mediated other dimensions relationship with child outcomes, yet only the attention dimension was influenced by both life stress and positive parenting. The effect of attention on positive parenting was small, and stress only moderated the association between attention and positive parenting when life stress low. It may be that the interdependent nature of the model allows individual dimensions to influence

outcome variables differently from other dimensions; however, together the dimensions may exert a synergistic positive influence that reduces child behavior reactivity.

An additional result of this study is that perceived stress moderated the associations between four of the mindful parenting dimensions, compassion, acceptance, attention, and self-regulation, and the mediating variable positive parenting. The results showed that the strength of the relationship between each of these dimension and positive parenting decreased as perceived stress increased. Previous researchers have demonstrated that increased parental stress was associated with decreased positive parenting (Zaidman-Zait et al., 2014). Perceived stress may distract parents and diminish their ability to accept behavioral problems, express empathetic concern, and regulate in the face of normative child behavior. However, caregivers may retain the ability to be aware of the their own and the child's. Thus, the caregiver may remain aware of the child's needs and understand the genesis of the child's behavior, but be unable to accept the behavior, or regulate automatic responses sufficiently enough to express compassion and acceptance through positive parenting.

The mindful parenting model, which includes five dimensions of mindful parenting (a) listening with full attention, (b) nonjudgmental acceptance, (c) parent self-regulation, (d) emotional awareness, and (e) compassion (Duncan et al., 2009a), served as a theoretical foundation for this study. Results of this study fit well with the mindful parenting model because the model allows for each dimension to function separately from each other, and therefore have a different association with parent and child

outcomes. The differential susceptibility model (Boyce and Ellis, 2005) was also used as a framework for this study. In the differential susceptibility model, Boyce and Ellis (2005) proposed that stress reactivity is varied between individuals, and that the effect of caregiver stress responses on their children is interactive and reciprocal (Ellis & Boyce, 2011). Furthermore, Boyce and Ellis stated that in some contexts it is advantageous for caregivers to suppress their stress responses, and heighten the stress response in other situations (Laurent et al., 2017). The results showed that although perceived stress negatively weakened the association between compassion, acceptance, attention and self-regulation and positive parenting, child behavior reactivity was not impacted. Together, using the mindful parenting model and the differential susceptibility model, researchers have suggested that mindful parenting helps caregivers to buffer children from the negative effects of stress on parent-child interactions (Duncan et al., 2009a; Laurent et al., 2017).

### **Limitations**

Limitations to this study include participant self-selection and the self-report nature of the survey instrument. Although I examined data for indicators of poor-quality, such as speeding through or straight lining answers, there is no way to know how focused participants were during the survey or how carefully answers were considered. Participation was anonymous, which helps to reduce the impact of social desirability; however, there is no way to truly determine how honest or self-aware participants were. I also relied on caregiver report of child behavioral reactivity; however, this may be



influenced by caregiver bias, mood, or nature of the relationship with the child (Algood et al., 2013; Blum, 2014; MacDonald & Hastings, 2010).

The generalization of these results is limited given that White, married, individuals with post-secondary education were over-represented. Education is known to be positively correlated with all facets of mindfulness (Baer et al., 2006), as such this study may not be representative of the broader population.

Another limitation of this study is the lack of causal interpretation due to the correlational nature of the design. Previous researchers have found that adolescent symptoms, such as internalization, have an influence on mother's emotional expression (Hale et al., 2011). It may be that caregivers of children with lower levels of behavioral reactivity are able to be more mindful, such that caregiver mindfulness is influenced by child behavior.

The Eyberge Child Behavior Inventory (ECBI; Eyberg & Ross, 1978) was the survey instrument that had the most incomplete or suspect responses of all instruments I used. Participants often straight lined responded "No" when asked if specific behaviors were a problem for them. This could be because participants were genuinely not bothered by a specific behavior, or it could reflect disengagement from the survey. The same "Yes" or "No" rating was entirely left blank by some participants. For analysis, I used the frequency of the behavior to measure the level of child behavioral reactivity, and so this pattern of response did not diminish the ability to answer the research questions;

however, it left a potentially robust area of exploration, parent attitude toward behavior, out of post hoc analysis.

### **Recommendations for Future Studies**

There are several recommendations for future studies based on the findings from the current research. As suggested by Neece (2014), it would be beneficial to use additional measures of mindful parenting and child behavior reactivity, such as partner or researcher observation. Although much more cost-intensive, interviews could also be used as a way of exploring life-stress of each parent (Dohrenwend, 2006). Reducing personal bias in reporting through observation methods and/or interviews may improve understanding as to how mindful parenting dimensions functionally influence a caregiver's action and reaction to children's behavior. Guertzen et al. (2015) noted that attention facilitated adolescent disclosure while acceptance correlated with decreased anxiety and depression in teens. Additional measures of child outcomes, such as depression and anxiety, are important for future studies. This, in turn, may help clinicians to properly identify areas of needed intervention.

Although the findings from this research showed that acceptance and attention dimensions were positively and significantly associated with reduced child behavioral reactivity, I did not test whether interventions targeting these dimensions would be effective. Future studies could include an active treatment and control group for this purpose (Neece, 2014).

Mindfulness and stress are thought to influence fathers and mothers differently (MacDonald & Hastings, 2010). In future, researchers could address how the gender of the caregiver influences the associations of mindful parenting on parent and child outcomes. I also recommend that future studies examine how the model of mindful parenting applies to caregiver roles outside of traditional parenting dynamics. Although the present research specifically used inclusive participant criteria, individuals in nontraditional caregiver roles and family dynamics, such as adoptive parent, nonbiological parents, foster parents, and caregivers with no formal legal status were not well represented. Understanding how mindful parenting dynamics are associated with positive parenting and child behavioral reactivity in a broader population could provide additional insight as to how to support caregivers who are struggling with managing child behavioral challenges.

In this study, I explored positive parenting as a potential mediator of the relationship between mindful parenting dimensions and child behavior reactivity. Further exploration of specific factors in positive parenting, such as consistency, could deepen understanding of the role of parenting. Systemic factors such as culture, ethnicity, and socioeconomic status are considered to be influential in parenting approach and access to support (Algood et al., 2013). Similarly, parent role has been found to impact the level of mindfulness reported by fathers (MacDonald & Hasting, 2010). Mindfulness support has been associated with increased wellbeing in marginalized communities (Blum, 2014); therefore, future studies should be focused on parent-specific mindfulness in populations

of low socioeconomic status and visible minorities. It is important for researchers in the future to examine how parent factors such as age, gender, ethnicity, and socioeconomic status influence mindfulness parenting dimensions.

### **Implications**

The results of this study contribute to positive social change on numerous levels by increasing insight as to how mindful parenting dimensions are associated with positive parenting and child behavioral reactivity. The results of this study identified that the mindful parenting dimensions of attention and acceptance have the strongest significant association with reduced behavioral reactivity in elementary school aged children. This suggests that clinicians and program developers working with caregivers of elementary-aged children may be most effective in helping parents address child behavior reactivity by targeting and teaching attention and acceptance.

The results from this study also identified that as a caregiver's emotional awareness and attention increase, child behavior reactivity decreases, and that this is mediated by positive parenting. This is an important finding because it suggests that attention and emotional awareness are two mindful parenting dimensions that may support or interfere with positive parenting. That is, helping parents stay emotionally aware and maintain their attention, may increase the effectiveness of positive parenting interventions. This finding may help support the development of effective parenting support that includes discussion of these mindful parenting dimensions.

Additionally, I found that life stress moderated the association of self-regulation, compassion, acceptance, and attention with positive parenting. This finding is important because it means that even though a caregiver may possess compassion, self-regulation, compassion, and acceptance, they may be unable to access these mindful parenting dimensions and parent positively when they are experiencing increased life stress. However, the results of this study also showed that life stress did not significantly change the strength or direction of the association of acceptance or attention on reduced child behavioral reactivity. This finding is important because it suggests that the key dimensions of mindful parenting that are associated with reduced child behavior reactivity remain effective in the face of life stress. Although it may still be useful for program developers and clinicians to address caregiver perceived stress, these results suggest that perceived stress should not be the focus of intervention when caregivers of elementary-aged children request support for behavioral reactivity.

### **Conclusion**

The purpose of this study was to determine which dimensions of mindful parenting were most associated with reduced child behavioral reactivity in elementary-age children. Another intention of this study was to explore whether positive parenting mediated the relationship between mindful parenting dimensions and child behavioral reactivity, and whether parent perception of life stress moderated the possible indirect relationship between mindful parenting and child behavior reactivity through positive parenting. The results demonstrated that caregivers who demonstrate higher levels of

attention and acceptance report less behavioral reactivity in their children. Attention emerged as a particularly important dimension of mindful parenting as it was the only dimension that was negatively associated with child behavior reactivity and positively associated with positive parenting. In the future, these findings may aid program developers, clinicians, and researchers in finding ways to effectively teach attention skills to caregivers in isolation from other mindfulness or parenting skills. The results from this study demonstrated that attention and emotional awareness were significantly and indirectly associated with reduced child behavior reactivity through positive parenting. Skill-based parenting supports may be more effective when they include instruction on attention and emotional awareness.

This study also found that while life stress weakened the relationship between self-regulation, acceptance, attention, and compassion, and the mediating variable positive parenting, there was no moderated mediation of mindful parenting on child behavioral reactivity. Parenting-specific stress has been found to decrease self-report of parenting ability (Moreira & Canavarro, 2016); however, perceive stress did not have the same influence. This result may suggest that while decreased parent stress has been associated with parent life satisfaction (Neece, 2014), parents were able to maintain mindful parenting in a way that is slightly insulated from perceived life stress. The present research findings suggested parents experiencing difficulty with child behavior reactivity in elementary-aged children be taught how to demonstrate their acceptance and attention, and offered support for parenting skills that are focused on emotional

awareness and attention. Parenting supports may be streamlined by focusing on these specific dimensions, with less attention being given to managing life stress, in order to maximize efficiency interventions developed to support caregivers who are facing behavioral reactivity with elementary-aged children.

## References

- Algood, C. L., Harris, C., & Hong, J. S. (2013). Parenting success and challenges for families of children with disabilities: An ecological systems analysis. *Journal of Human Behavior in the Social Environment, 23*, 126-136.  
doi:10.1080/10911359.2012.747408
- American Psychological Association. (2018). Marriage and divorce. Retrieved from [www.apa.org/topics/divorce](http://www.apa.org/topics/divorce)
- Andreou, E., Alexopoulos, E. C., Lionis, C., Varvogli, L., Gnardellis, C., Chrousos, G. P., & Darviri, C. (2011). Perceived stress scale: Reliability and validity in Greece. *International Journal of Environmental Research in Public Health, 8*, 3287-3289.  
doi:10.3390/ijerrph8083287
- Axberg, U., Hanse, J. J., & Broberg, A. G. (2008). Parents' description of conduct problems in their children: A test of the eyberg child behavior inventory (ECBI) in a Swedish sample aged 3-10. *Scandinavian Journal of Psychology, 49*, 497-505. doi:10.1111/j.1467 - 9450.2008.00670.x
- Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment, 13*, 27-45. doi:10.1177/1073191105283504
- Baron, R. M., & Kenny, D. A. (1986). Moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations.



*Journal of Personality and Social Psychology*, 51(6), 1173-1182.

doi:10.1037/0022-3514.51.6.1173

Beer, M., Ward, L., & Moar, K. (2013). The relationship between mindful parenting and distress in parents of children with an autism spectrum disorder. *Mindfulness*, 4,

102-112. doi:10.1007/s12671-012-0192-4

Benediktsson, I., McDonald, S., & Tough, S. (2017). Examining the psychometric properties of three standardized screening tools in a pregnant and parenting population. *Maternal and Child Health Journal*, 21, 253 – 259.

doi:10.1007/s10995-016-2128-4

Benn, R., Akiva, T., Arel, S., & Roeser, R. W. (2012). Mindfulness training effects for parents and educators of children with special needs. *Developmental Psychology*,

48, 1476-1487. doi:10.1037/a0027537

Black, D. S., & Slavich, G. M. (2016). Mindfulness meditation and the immune system:

A systematic review of randomized controlled trials. *Annals of the New York Academy of Science*, 1373, 13-24. doi:10.1111/nyas.12998

Blum, H. A. (2014). Mindfulness equity and western Buddhism: Reaching people of low socioeconomic status and people of color. *International Journal of Dharma*

*studies*, 2, 1-18. doi:10.1186/s40613-014-0010-0

Bögels, S. M., Helleman, J., van Deursen, S., Römer, M., & van der Meulen, R. (2014).

Mindful parenting in mental health care: Effects on parental and child

- psychopathology, parental stress, parenting, coparenting, and marital functioning. *Mindfulness*, 5, 536 – 551. doi:10.1007/s12671-013-0209-7
- Bögels, S. M., Lehtonen, A., & Restifo, K. (2010). Mindful parenting in mental health care. *Mindfulness*, 1, 107-120. doi:10.1007/s12671-010-0014-5
- Boggs, S., Eyberg, S., & Reynolds, L. A. (1990). Concurrent validity of the eyberg child behavior inventory. *Journal of Clinical Child Psychology*, 19, 75-78. doi:10.1207/s15374424jccp1901\_9
- Boyce, W. T., & Ellis, B. J. (2005). Biological sensitivity to context: I. An evolutionary-developmental theory of the origins and functions of stress reactivity. *Development and Psychopathology*, 17, 271-301. doi:10.1017/S095457905050145
- Bradburn, N., Sudman, S., & Wansink, B. (2004). *Asking questions: The definitive guide to questionnaire design – For market research, political polls, and social and health questionnaires* (Revised edition). San Francisco, CA: Jossey-Bass.
- Brassell, A. A., Rosenberg, E., Parent, J., Rough, J. N., Fondacaro, K., & Seehuss, M. (2016). Parent's psychological flexibility: Associations with parenting and child psychosocial well-being. *Journal of Contextual Behavioral Science*, 5, 111-120. doi:10.1016/j.jcbs.2016.03.001
- Brown, K. W., & Ryan, R. M. (2003). Why we don't need self-esteem: On fundamental needs, contingent love, and mindfulness. *Psychological Inquiry*, 14(1), 71-76. Retrieved from <http://www.jstor.org/stable/1449046>

- Burns, G. L., & Patterson, D. R. (1990). Conduct problem behaviors in a stratified random sample of children and adolescents: New standardization data on the eyberg child behavior inventory. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, 2, 391-397. doi:10.1037/1040-3590.2.4.391
- Campbell, K., Thoburn J. W., & Leonard, H. D. (2017). The mediating effects of stress on the relationship between mindfulness and parental responsiveness. *Couple and Family Psychology: Research and Practice*, 6, 48-59. doi:10.1037/cfp0000075
- Coatsworth, J. D., Duncan, L. G., Greenberg, M. T., & Nix, R. L. (2010). Changing parent's mindfulness, child management skills and relationship quality with their youth: Results from a randomized pilot intervention trial. *Journal of Child and Family Studies*, 19, 203-217. doi:10.1007/s10826-009-9304-8
- Coatsworth, J. D., Duncan, L. G., Nix, R. L., Greenberg, M. T., Gayles, J. G., Bamberger, K. T., & ... Demi, M. A. (2015). Integrating mindfulness with parent training: Effects of the mindfulness-enhanced strengthening families program. *Developmental Psychology*, 51, 26-35. doi:10.1037/a0038212
- Cocco, M., & Tuzzi, A. (2013). New data collection modes for surveys: A comparative analysis of the influence of survey mode on question-wording effects. *Quality & Quantity*, 47, 3135-3152. doi:10.1007/s11135-012-9708-1
- Cohen, S., Karmack, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 385-396. doi:10.2307/2136404

- Conway, C. C., Rutter, L. A., & Brown, T. A. (2016). Chronic environmental stress and the temporal course of depression and panic disorder: A trait-state-occasion modeling approach. *Journal of Abnormal Psychology, 125*, 53-63.  
doi:10.1037/abn0000122
- Crane, R. S., Brewer, J., Feldman, C., Kabat-Zinn, J., Santorelli, S., Williams, J. M., & Kuyken, W. (2017). What defines mindfulness-based programs? The warp and the weft. *Psychological Medicine, 47*, 990-999. doi:10.1017/S0033291716003317
- Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3<sup>rd</sup> ed.). Thousand Oaks, CA: Sage Publications, Inc.
- de Bruin, E. I., Zijlstra, B. J., Geurtzen, N., van Zundert, R. M., van de Weijer-Bergsma, E., Hartman, E. E.,...Bögels, S. M.(2014). Mindful parenting assessed further: Psychometric properties of the Dutch version of the Interpersonal Mindfulness in Parenting Scale (IM-P). *Mindfulness, 5*, 200–212. doi:10.1007/s12671-012-0168-4
- DeVellis, R. F. (2012) *Scale development: Theory and applications* (3<sup>rd</sup> ed.). Thousand Oaks, CA: Sage.
- Dhabhar, F. S. (2014). Effects of stress on immune functions: the good, the bad, and the beautiful. *Immunology Research, 58*, 193-210. doi:10.1007/s12026-014-8517-0
- Dohrenwend, B. P (2006). Inventorying stressful life events as risk factors for psychopathology: Toward resolution of the problem of intracategory variability. *Psychological Bulletin, 132*, 477-495. doi:10.1037/0033-2909.132.3.477

- Duncan, L. G. (2007). *Assessment of mindful parenting among parents of early adolescents: Development and validation of the Interpersonal Mindfulness in Parenting scale*. Unpublished doctoral dissertation. Pennsylvania State University, PA, USA. Retrieved from <http://etda.libraries.psu.edu/catalog/7740>
- Duncan, L. G., & Bardacke, N. (2010). Mindfulness-based childbirth and parenting education: Promoting family mindfulness during the perinatal period. *Journal of Child and Family Studies, 19*, 190-202. doi:10.1007/s10826-009-9313-7
- Duncan, L. G., Coatsworth, J. D., & Greenberg, M. T. (2009a). A model of mindful parenting: implications for parent-child relationships and prevention research. *Clinical Child, and Family Psychology Review, 12*, 255-270. doi:10.1007/s10567-009-0046-3
- Duncan, L. G., Coatsworth, J. D., & Greenberg, M. T. (2009b). Pilot study to gauge acceptability of a mindfulness-based, family-focused, prevention intervention. *Journal of Primary Prevention, 30*, 605-618. doi:10.1007/s10935-009-0185-9
- Duncan, L., Coatsworth, J. D., Gayles, G. G., Geier, M. H., & Greenberg, M. T. (2015). Can mindful parenting be observed? Relations between observation ratings of mother-youth interactions and mothers' self-report of mindful parenting. *Journal of Family Psychology, 29*, 276-282. doi:10.1037/a0038857
- Edwards, J. R., & Lambert, L. S. (2007). Methods for integrating moderation and mediation: A general analytical framework using moderated path analysis. *Psychological Methods, 12*, 1-22. doi:10.1037/1082-989X.12.1.1

- Ekman, P., Davidson, R. J., Ricard, M., & Wallace, A. (2005). Buddhist and psychological perspectives on emotions and well-being. *Current Directions in Psychological Science, 14*, 59-63. doi:10.1111/j.0963-7214.2005.00335.x
- Ellis, B. J., & Boyce, W. T. (2011). Differential susceptibility to the environment: Toward an understanding of sensitivity to developmental experiences and context. *Development and Psychopathology, 23*, 1-5. doi:10.1017/S095457941000060X
- Ellis, B. J., Essex, M. J., & Boyce, W. T. (2005). Biological sensitivity to context: II. Empirical explorations of an evolutionary-developmental theory. *Development and Psychopathology, 17*, 303-328. doi:10.1017/S0954579405050157
- Ellis, B. J., Shirtcliff, E. A., Boyce, W. T., Dearing, J., & Essex, M. J. (2011). Quality of early family relationships and the timing and tempo of puberty: Effects depend on biological sensitivity to context. *Development and Psychopathology, 23*, 85-99. doi:10.1017/S0954579410000660
- Eyeberg, S. M., & Ross, A. (1978). Assessment of child behavior problems: The validation of a new inventory. *Journal of Clinical Child and Adolescent Psychology, 7*, 113-116. doi:10.1080/15374417809532835
- Farrell, A. K., Simpson, J. A., Carlson, E. A., Englund, M. M., & Sung, S. (2017) The impact of stress at different life stages on physical health and the buffering effects of maternal sensitivity. *Health Psychology, 36*, 35-44. doi:10.1037/hea0000424
- Fredrickson, B., Cohn, M., Coffey, K., Pek, J., & Finkel, S. (2008). Open hearts build lives: Positive emotions, induced through loving-kindness meditation, build

consequential personal resources. *Journal of Personality and Social Psychology*, *95*, 1045-1062. doi:10.1037/a0013262

Funderburk, B., Chaffin, M., Bard, E., Shanley, J., Bard, D., & Berliner, L. (2015). Comparing client outcomes for two evidence-based treatment consultation strategies. *Journal of Clinical Child & Adolescent Psychology*, *44*, 730-741. doi:10.1080/15374416.2014.910790

Gouveia, M. J., Carona, C., Cannavarro, M. C., & Moreira, H. (2016). Self-compassion and dispositional mindfulness are associated with parenting styles and parenting stress: The mediating role of mindful parenting. *Mindfulness*, *7*, 700-712. doi:10.1007/s12671-016-0507-y

Greco, L. A., Baer, R. A., & Smith, G. T. (2011). Assessing mindfulness in children and adolescents: Development and validation of the child and adolescent mindfulness measure (CAMM). *Psychological Assessment*, *23*, 606-614. doi:10.1037/a0022819

Groves, R. M., Fowler, F. J. Jr., Couper, M. P., Lepowski, J. M., Singer, E., & Tourangeau, R. (2009). *Survey methodology* (2<sup>nd</sup> Ed.). Hoboken, NJ: John Wiley & Sons.

Guertzen, N., Scholte, R. H., Engels, R. C., Tak, Y. R., & van Zundert, R. M. (2015). Association between mindful parenting and adolescents' internalizing problems: Non-judgmental acceptance as core element. *Journal of Child and Family Studies*, *24*, 1117-1128. doi:10.1007/s10826-014-9920-9

- Hale, W. W., Keijsers, L., Klimstra, T.A., Raaijmakers, Q. A., Hawk, S., Branje, S. J.,...Meeus, W. H. (2011). How does longitudinally measured maternal expressed emotion affect internalizing and externalizing symptoms of adolescents from the general community? *Journal of Child psychology and Psychiatry*, *52*, 1174-1183. doi:10.1111/j.1469-7610.2011.02400.x
- Hanley, A. W., & Garland, E. L. (2017). Clarity of mind: Structural equation modeling of associations between dispositional mindfulness, self-concept clarity and psychological well-being. *Personality and Individual Differences*, *106*, 334-339. doi:10.1016/j.paid.2016.10.028
- Harnett, P. H., & Dawe, S. (2012). The contribution of mindfulness-based therapies for children and families and proposed conceptual integration. *Child and Adolescent Mental Health*, *17*, 195-208. doi:10.1111/j.1475-3588.2011.00643.x
- Hayes, A. F. (2009). Beyond Barron and Kenney: Statistical mediation analysis in the new millennium. *Communication Monographs*, *76*, 408-420. doi:10.1080/03637750903310360
- Hayes, A. F. (2012). PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling. Retrieved from <http://www.afhayes.com/public/process2012.pdf>
- Hayes, A.F. (2015). An index and test of linear moderated mediation. *Multivariate Behavioral Research*, *50*, 1-22. doi:10.1080/00273171.2014.962683



- Hayes, A. F. (2017). *Introduction to Mediation, Moderation, and Conditional Process: A regression based approach* (2<sup>nd</sup> Ed.). New York, NY: A Division of Guilford Publication Inc.
- Hayes, A.F., Montoya, A. K., & Rockwood, N. J. (2017). The analysis of mechanisms and their contingencies: PROCESS versus structural equation modeling. *Australasian Marketing Journal*, 25, 76-81. doi:10.1016/j.ausmj.2017.02.001
- Hofmann, S. G., Grossman, P., & Hinton, D. E. (2011). Loving-kindness and compassion meditation : Potential for psychological interventions. *Clinical Psychology Review*, 31, 1126-1132, doi:10.1016/j.cpr.2011.07.003
- Hoge, E. A., Chen, M. M., Orr, E., Metcalf, C. A., Fischer, L. E., Pollack, M. H., DeVivo, I., & Simon, N. M. (2013). Loving-kindness meditation practice associated with longer telomeres in women. *Brain, Behavior, and Immunity*, 32, 159-163. doi:10.1016/j.bbi.2013.04.005
- Hollis-Walker, L., & Colosimo, K. (2011). Mindfulness, self-compassion, and happiness in non-meditators: A theoretical and empirical examination. *Personality and Individual Differences*, 50, 222-227. doi:10.1016/j.paid.2010.09.033
- Holt-Lunstad, J., Steffen, P. R., Sandberg, J., & Jensen, B. (2011). Understanding the connection between spiritual well-being and physical health: An examination of ambulatory blood pressure, inflammation, blood lipids and fasting glucose. *Journal of Behavioral Medicine*, 34, 477-488, doi:10.1007/s10865-011-9343-7

- Holtz, C. A., & Fox, R. A. (2012). Behavior problems in young children from low-income families: The development of a new screening tool. *Infant Mental Health Journal, 33*, 82-94. doi:10.1002/imhj.20341
- Houltberg, B. J., Morris, A. S., Cui, L., Henry, C. S., & Criss, M. M. (2016). The role of youth anger in explaining links between parenting and early adolescent prosocial and antisocial behavior. *Journal of Early Adolescence, 36*, 297-318. doi:10.1177/0272431614562834
- Huang, J.L., Liu, M., Bowling, N.A. (2015). Insufficient effort responding: Examining an insidious confound in survey data. *Journal of Applied Psychology, 100*, 828-845. doi:10.1037/a0038510
- Jones, L., Hastings, R.P., Totsika, V., Keane, L., & Rhule, N. (2014). Child behavior problems and parental well-being in families of children with autism: The mediating role of mindfulness and acceptance. *American Journal on Intellectual and Developmental Disabilities, 119*, 171-185. doi:10.1352/1944-7558-119.2.171
- Kabat-Zinn, J. (2003). Mindfulness-based intervention in context: Past, present, and future. *Clinical Psychology: Science and Practice, 10*, 144 – 156. doi:10.1093/clipsy/bpg016
- Kabat-Zinn, J., Lipworth, L., Burney, R. (1985). The clinical use of mindfulness meditation for the self-regulation of chronic pain. *Journal of Behavioral Medicine, 8*, 163-190. doi:10.1007/BF00845519

- Kabat-Zinn, J., & University of Massachusetts Medical Center/Worcester. (1991). Full catastrophe living: Using the wisdom of your body and mind to face stress, pain, and illness. New York, NY: Dell Pub., a division of Bantam Doubleday Dell Pub. Group.
- Karazsia, B. T., Berline, K. S., Armstrong, B., Janicke., D. M., & Darling, K. E. (2014). Integrating mediation and moderation to advanced theory development and testing. *Journal of Pediatric Psychology, 39*, 163-173. doi:10.1093/jpepsy/jst080
- Kim, B. K., Gilman, A. B., Hill, K. G., & Hawkins, J. D. (2016). Examining protective factors against violence among high-risk youth: Findings from the Seattle social development project. *Journal of Criminal Justice, 45*, 19-25.  
doi:10.1016/j.jcrimjus2016.02.015
- Kohn, N., Hermans, E.J., Fenandez, G. (2017). Cognitive benefit and cost of acute stress is differentially modulated by individual brain state. *Social Cognitive and Affective Neuroscience, 12*, 1179-1187. doi:10.1093/scan/nsx043
- Krosnick, J. (1999). Survey research. *Annual Review of Psychology, 50*, 537–567.  
doi:10.1146/annurev.psych.50.1.537
- Laurent, H. K., Duncan, L. G., Lightcap, A., & Khan, F. (2017). Mindful parenting predicts mothers' and infants' hypothalamic-pituitary-adrenal activity during a dyadic stressor. *Developmental Psychology, 53*, 417. doi:10.1037/dev0000258
- Lippold, M.A., Duncan, L.G., Coatsworth, J. D., Nix, R.L., & Greendberg, M.T. (2015). Understanding how mindful parenting may be linked to mother-adolescent

communication. *Journal of Youth and Adolescence*, 44, 1163-1167.

doi:10.1007/s10964-015-0325-x

- Lupien, A. J., McEwan, B. S., Gunnar, M. R., & Heim, C. (2009). Effects of stress throughout the lifespan on the brain, behavior and cognition. *Nature reviews Neuroscience*, 10, 434 – 445. doi:10.1038/nm2639.
- MacDonald, E. E., & Hastings, R. P. (2010). Mindful parenting and care involvement of fathers of children with intellectual disabilities. *Journal of Child and Family Studies*, 19, 236-240. doi:10.1007/s10826-008-9243-9
- Mackrell, S. V., Sheikh, H.I, Kotelnikova, Y., Kryski, K. R., Jordan, P. L., Singh, S. M., & Hayden, E. P. (2014). Child temperament and parental depression predict cortisol reactivity to stress in middle childhood. *Journal of Abnormal Psychology*, 123, 106-116. doi:10.1037/a0035612
- Manson, J. H., & Robbins, M. L. (2017). New evaluation of the electronically activated recorder (EAR): Obtrusiveness, compliance, and participant self-selection effect. *Frontiers in Psychology*, 8:658. doi:10.3389/fpsyg.2017.00658
- Marulnada, S., & Addington, J. (2016). Resilience in individuals at clinic high risk for psychosis. *Early Intervention in Psychiatry*, 10, 212 – 219. doi:10.1111/eip.12174
- Meppelink, R., de Bruin, E. I., Wanders-Mulder, F. H., Vennik, C. J., & Bögels, S. M. (2016). Mindful parenting training in child psychiatric settings: Heightened parental mindfulness reduces parent and children’s psychopathology. *Mindfulness*, 7, 680-689. doi:10.1007/s12671-016-0504-1

- Miller, J.G., Kahle, S., Lopez, M., & Hastings, P.D. (2015). Compassionate love buffers stress-reactive mothers from fight-or-flight parenting. *Developmental Psychology, 51*, 35-43. doi:10.1037/a0038236
- Moreira, H., & Canavarro, M. C. (2016). Parental attachment insecurity and parenting stress: The mediating role of parents' perceived impact of children's diabetes on the family. *Family Systems, & Health, 34*, 240-249. doi:10.1037/fsh0000211
- Morganson, V. J., Rotch, M. A., Christie, A. R. (2015). Being mindful of work-family issues: Intervention to a modern stressor. *Industrial and Organizational Psychology, 8*, 682-689. doi:10.1017/iop.2015.100
- Murphy, M. L., Slavich, G., Chen, E., & Miller, G. (2015). Targeted rejection predicts decreased anti-inflammatory gene expression and increased symptom severity in youth with asthma. *Psychological Science, 26*, 111-121. doi:10.1177/0956797614556320
- Neece, C. L. (2014). Mindfulness-based stress reduction for parents of young children with developmental delays: Implications for parental mental health and child behavior problems. *Journal of Applied Research in Intellectual Disabilities, 27*, 174-186. doi:10.1111/jar.12064
- Nonterah, C. W., Garthe, R. C., Reid, C. A., Worthington Jr., E. L., Davis, D. E., Hook, J. N.,...Griffin, B. J. (2016). The impact of stress on fluctuations in relationship humility as couples' transition to parenthood. *Personality and Individual Differences, 101*, 276 - 281. doi:10.1016/j.paid.2016.06.016

- Nyklíček, I., Mommersteeg, P. M., Van Beugen, S., Ramakers, C., & Van Boxtel, G. J. (2013). Mindfulness-based stress reduction and physiological activity during acute stress: A randomized controlled trial. *Health Psychology, 32*, 1110-1113. doi:10.1037/a0032200
- Pace, T. W., Negi, L. T., Adame, D. D., Cole, S. P., Sivilli, T. I., Brown, T. D., Isaa, M. J., & Raison, C. L. (2009). Effect of compassion meditation on neuroendocrine, innate immune and behavioral responses to psychosocial stress. *Psychoneuroendocrinology, 34*, 87-98. doi:10.1016/j.psyneuen.2008.08.011.
- Parent, J.M. (2017) Multidimensional assessment of parenting across three developmental stages. Unpublished doctoral dissertation. The University of Vermont and State Agricultural College, USA. ProQuest Number:10120474
- Parent, J. M., & Forehand, R. (2017). The multidimensional assessment of parenting scale (MAPS). Development and psychometric properties. *Journal of Child and Family Studies, 26*, 2136-2151. doi:10.1007/s10826-017-0741-5
- Parent, J. M., McKee, L. G., Rough, J. N., & Forehand, R. (2016). The association of parent mindfulness with parenting and youth psychopathology across three developmental stages. *Journal of Abnormal Child Psychology, 44*, 191-202. doi:10.1007/s10802-015-9978-x
- Perez-Blasco, J., Viguer, P., Rodrigo, M.F. (2013). Effects of mindfulness-based intervention on psychological distress, well-being, and maternal self-efficacy in

- breast-feeding mothers: Results of a pilot study. *Archives of Women's Mental Health*, 16, 227-236. doi:10.1007/s00737-013-0337-z
- Platt, R., Williams, S. R., & Ginsburg, G. S. (2016). Stressful life events and childhood anxiety: Examining parent and child mediators. *Child Psychiatry Human Development*, 47, 23-34. doi:10.1007/s10578-015-0540-4
- Priel, A., Djalovski, A., Zagoory-Sharon, O., & Feldman, R. (2018). Maternal depression impacts child psychopathology across the first decade of life: Oxytocin and synchrony as markers of resilience. *Journal of Child Psychology and Psychiatry*. doi:10.1111/jcpp.12880 [Epub ahead of print]
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavioral Research Methods, Instruments, & Computers*, 36, 717-731. doi:10.3758/BF03206553
- Rayan, A., & Ahmad, M. (2016). Effectiveness of mindfulness-based interventions on quality of life and positive reappraisal coping among parents of children with autism spectrum disorder. *Research in Developmental Disabilities*, 55, 185-196. doi:10.1016/j.ridd.2016.04.002
- Ruffini, A. (2017). Who's your daddy?: The marital presumptions of legitimacy in the modern world and its application to same-sex couples. *Family Court Review*, 55, 307-320, doi:10.1111/fcre.12279
- Rutter, M. (2012). Resilience as a dynamic concept. *Development and Psychopathology*, 24, 335-344. doi:10.1017/S0954579412000028

- Slavich, G. M. (2016). Life stress and health: A review of conceptual issues and recent findings. *Teaching of Psychology, 43*, 346-355, doi:10.1177/0098628316662768.
- Statistics Canada. (2016). Immigration and Ethno Cultural Diversity in Canada. Retrieved May 28, 2018, from [www.statscan.gc.ca](http://www.statscan.gc.ca) Census Profile, 2016 Census - Alberta [Province] and Canada [Country].
- Sweenie, R., Mackey, E. R., & Streisand, R. (2014). Parent–child relationships in Type 1 diabetes: Associations among child behavior, parenting behavior, and pediatric parenting stress. *Families, Systems, & Health, 32*, 31-42. doi:10.1037/fsh0000001
- Tellegen, C. & Sanders, M. R. (2014). A randomized controlled trial evaluating a brief parenting program with children with autism spectrum disorders. *Journal of Consulting and Clinical Psychology, 82*, 1193 – 1200. doi:10/1037/a0037246
- Townshend, K. (2016). Conceptualizing the key processes of mindful parenting and its application to youth mental health. *Australian Psychiatry, 24*, 575 - 577. doi:10.1177/1039856216654392
- United States Census Bureau. (2018). Quick Facts. Retrieved April 29, 2018 from [www.census.gov/quickfacts/fact/table/US/RHI125216](http://www.census.gov/quickfacts/fact/table/US/RHI125216)
- Vago, D.R., & Silbersweig, D.A. (2012). Self-awareness, self-regulation, and self-transcendence (S-ART): A framework for understanding the neurobiological mechanisms of mindfulness. *Frontiers in Human Neuroscience, 6*, 1 – 30. doi:10.3389/fnhum.2012.00296



- van der Oord, S., Bögels, S. M., & Peijnenburg, D. (2012). The effectiveness of mindfulness training for children with ADHD and mindful parenting for their parents. *Journal of Child and Family Studies, 21*, 139-147.  
doi:10.1007/s10826-011-9457-0
- Watford, T. S., & Stafford, J. (2015). The impact of mindfulness on emotion dysregulation and psychophysiological reactivity under emotional provocation. *Psychology of Consciousness: Theory, Research, and Practice, 2*, 90-109.  
doi:10.1037/cns0000039
- Wickrama, K. A., Ralston, P. A., O'Neal, C. W., Ilich, J. Z., Harris, C. M., Coccia, C.,... & Lemacks, J. (2013a). Perceived Stress Scale--Revised [Database record]. Retrieved from PsycTESTS. doi:10.1037/t25065-000
- Wickrama, K. A., Ralston, P. A., O'Neal, C. W., Ilich, J. Z., Harris, C M., Coccia, C,... & Lemacks, J. (2013b). Linking life dissatisfaction to health behaviors of older African Americans through psychological competency and vulnerability. *Research on Aging, 35*, 591-611. doi:10.1177/0164027512449473
- Young, W. Y., Houston, J. S., Harris, J. H., Hoffman, R. G., & Wise, L. L. (1990). Large-scale predictor validation in Project A: Data collection procedures and data base preparation. *Personnel Psychology, 43*, 301-311. doi:10.1111/j.1744-6570.1990.tb01560.x
- Zaidman-Zait, A., Mirenda, P., Duku, E., Szatmari, P., Georgiades, A., Volden, J., Zwaigen, L.,...Thompson, A. (2014). Examination of birectional relationships

between parent stress and two types of problem behavior in children with autism spectrum disorder. *Journal of Autism Developmental Disorder*, 44, 1908-1917.

doi:10.1007/s10803-014-2064-3

## Appendix A: Demographic Questionnaire

Please provide your answers to the following questions or statements.

1. Please indicate your age: \_\_\_\_\_
2. Please indicate your gender: \_\_\_\_\_
3. What is your relationship status?
  - Single
  - Married
  - Common-law
  - In relationship but not living together
  - Widowed
  - Divorced
4. How many children do you care for in your household (including part-time) under the age of 18?
  - One
  - Two
  - Three
  - Four or more
  - No children under the age of 13 live with me in my household
5. What is the level of your formal education completed?
  - High School Diploma / GED
  - University certificate or diploma below bachelor level
  - Bachelor's degree (e.g., B.A., B.A. (Hons.), B.Sc., B.Ed., LL.B.)
  - University certificate or diploma above bachelor level

- Degree in medicine, dentistry, veterinary medicine or optometry (M.D., D.D.S., D.M.D., D.V.M., O.D.)
- Master's degree (e.g., M.A., M.Sc., M.Ed., M.B.A.)
- Earned doctorate (e.g., Ph.D.)

6. What is your ethnicity?

- White
- South Asian (e.g., East Indian, Pakistani, Sri Lankan, etc.)
- Chinese
- Black
- Filipino
- Latin American
- Arab
- Southeast Asian (e.g., Vietnamese, Cambodian, Laotian, Thai, etc.)
- West Asian (e.g., Iranian, Afghan, etc.)
- Korean
- Japanese
- Other — specify
- Two or more races

For the remainder of this survey, you will be asked to respond to a series of questions or statements about one child you fulfill parenting duties for who is 6 to 12 years of age.

7. Please indicate the age and gender of the child, who you will focus on as you complete the remaining survey.

Age \_\_\_\_\_ Gender \_\_\_\_\_

8. What is the ethnicity of the child?

- White
- South Asian (e.g., East Indian, Pakistani, Sri Lankan, etc.)
- Chinese
- Black
- Filipino
- Latin American
- Arab
- Southeast Asian (e.g., Vietnamese, Cambodian, Laotian, Thai, etc.)
- West Asian (e.g., Iranian, Afghan, etc.)
- Korean
- Japanese
- Other — specify
- Two or more races

9. What is the nature of your relationship with the child?

- a. Biological parent.
- b. Adoptive parent.
- c. Function in a parenting role without any formal legal status.

d. Foster parent.

10. . What is the nature of your living arrangement with the child?

- a. Living together full-time.
- b. Living together, part-time.
- c. Living apart.

## Appendix B: Interpersonal Mindfulness in Parenting (IMP) Scale – Expanded Version

## (Parent Report)

The following statements describe different ways that parents interact with their children on a daily basis. Please tell me whether you think the statement is “Never True,” “Rarely True,” “Sometimes True,” “Often True,” or “Always True” for you. Remember, there are no right or wrong answers and please answer according to what <i>really reflects</i> your experience rather than what you think your experience <i>should</i> be. Please treat each statement separately from every other statement.	Never True	Rarely True	Sometimes True	Often True	Always True
1. I find myself listening to my child with one ear because I am busy doing or thinking about something else at the same time.	1	2	3	4	5
2. When I’m upset with my child, I notice how I am feeling before I take action.	1	2	3	4	5
3. I notice how changes in my child’s mood affect my mood.	1	2	3	4	5
4. I listen carefully to my child’s ideas, even when I disagree with them.	1	2	3	4	5
5. I often react too quickly to what my child says or does.	1	2	3	4	5
6. I am aware of how my moods affect the way I treat my child.	1	2	3	4	5
7. Even when it makes me uncomfortable, I allow my child to express his/her feelings.	1	2	3	4	5

8. When I am upset with my child, I calmly tell him/her how I am feeling.	1	2	3	4	5
9. I rush through activities with my child without being really attentive to him/her.	1	2	3	4	5
10. I have difficulty accepting my child's growing independence.	1	2	3	4	5
11. How I am feeling tends to affect my parenting decisions, but I do not realize it until later.	1	2	3	4	5
12. It is hard for me tell what my child is feeling.	1	2	3	4	5
13. When I am doing things with my child, my mind wanders off and I am easily distracted.	1	2	3	4	5
14. When my child misbehaves, it makes me so upset I say or do things I later regret.	1	2	3	4	5
15. I tend to be hard on myself when I make mistakes as a parent.	1	2	3	4	5
16. When my child does something that upsets me, I try to keep my emotions in balance.	1	2	3	4	5
17. When times are really difficult with my child, I tend to blame myself.	1	2	3	4	5
18. When things I try to do as a parent do not work out, I can accept them and move on.	1	2	3	4	5
19. I am often so busy thinking about other things that I realize I am not really listening to my child.	1	2	3	4	5
20. When I do something as a parent that I regret, I try to give myself a break.	1	2	3	4	5
21. In difficult situations with my child, I pause without immediately reacting.	1	2	3	4	5



22. It is easy for me to tell when my child is worried about something.	1	2	3	4	5
23. I tend to criticize myself for not being the kind of parent I want to be.	1	2	3	4	5
24. I pay close attention to my child when we are spending time together.	1	2	3	4	5
25. I am kind to my child when he/she is upset.	1	2	3	4	5
26. When I am having a hard time with parenting, I feel like other parents must have an easier time of it.	1	2	3	4	5
27. When my child is going through a difficult time, I try to give him/her the nurturing and caring he/she needs.	1	2	3	4	5
28. I try to understand my child's point of view, even when his/her opinions do not make sense to me.	1	2	3	4	5
29. When something my child does upsets me, I get carried away with my feelings.	1	2	3	4	5
30. I can tell what my child is feeling even if he/she does not say anything.	1	2	3	4	5
31. I try to be understanding and patient with my child when he/she is having a hard time.	1	2	3	4	5

### Appendix C: Multidimensional Assessment of Parenting Scale (MAPS)

Parents have different ways of trying to raise their children. Please read each statement and rate how much each one best describes your parenting during the past two months with the child indicated above.

1 = Never 2 = Almost Never 3 = Sometimes True 4 = Often 5 = Always

1. I express affection by hugging, kissing, and holding my child.
2. If my child whines or complains when I take away a privilege, I will give it back
3. I am afraid that disciplining my child for misbehavior will cause her/him to not like me.
4. I argue with my child.
5. I use threats as punishment with little or no justification.
6. The punishment I give my child depends on my mood.
7. I have warm and intimate times together with my child.
8. I yell or shout when my child misbehaves.
9. My child talks me out of punishing him/ her after he/she has done something wrong.
10. I show respect for my child's opinions by encouraging him / her to express them.
11. If my child does his/her chores, I recognize his/her behavior in some manner.
12. I let my child out of a punishment early (like lift restrictions earlier than I originally said).
13. I explode in anger toward my child.
14. I spank my child with my hand when he/she has done something wrong.

15. I give reasons for my requests (such as “We must leave in five minutes, so it’s time to clean up”).
16. I lose my temper when my child doesn’t do something I ask him/her to do.
17. I encourage my child to talk about his/her troubles.
18. If I give my child a request and she/he carries out the request, I praise him/her for complying.
19. I warn my child before a change of activity is required (such as a five-minute warning before leaving the house in the morning).
20. If my child gets upset when I say “No,” I back down and give in to her/him.
21. My child and I hug/kiss each other.
22. I listen to my child’s ideas and opinions.
23. I feel that getting my child to obey is more trouble than it’s worth.
24. I spank my child when I am extremely angry.
25. I use physical punishment as a way of disciplining my child.
26. If my child cleans his/her room, I will tell him/her how proud I am.
27. I give in to my child when she/he causes a commotion about something.
28. I tell my child my expectations regarding a behavior before my child engages in an activity.
29. When I am upset or under stress, I am picky and on my child’s back.
30. I tell my child that I like it when he/she helps around the house.

31. I use physical punishment (for example, spanking) to discipline my child because other things I have tried have not worked.

32. I provide my child with a brief explanation when I discipline his/her behavior.

33. I avoid struggles with my child by giving clear choices.

34. When my child misbehaves, I let him/her know what will happen if she/he doesn't behave.

## Appendix D: Eyeberg Child Behavior Inventory (ECBI)

Please indicate how often each behavior occurs on a seven-point scale, with 1 being never and 7 being always. Also indicates whether the specific behavior is currently a problem by circling Yes or No for each behavior (i.e., Is this behavior a problem for you?).

1. Dawdles in getting dressed.

Rating (1-7) \_\_\_\_\_ Yes / No

2. Dawdles or lingers at mealtime

Rating (1-7) \_\_\_\_\_ Yes / No

3. Has poor table manners

Rating (1-7) \_\_\_\_\_ Yes / No

4. Refuses to eat food present

Rating (1-7) \_\_\_\_\_ Yes / No

5. Refuses to do chores when asked

Rating (1-7) \_\_\_\_\_ Yes / No

6. Slow in getting ready for bed

Rating (1-7) \_\_\_\_\_ Yes / No

7. Refuses to go to bed on time

Rating (1-7) \_\_\_\_\_ Yes / No

8. Does not obey house rules on own

Rating (1-7) \_\_\_\_\_ Yes / No

9. Refuses to obey until threatened with punishment

Rating (1-7) \_\_\_\_\_ Yes / No

10. Acts defiant when told to do something

Rating (1-7) \_\_\_\_\_ Yes / No

11. Argues with parents about rules

Rating (1-7) \_\_\_\_\_ Yes / No

12. Gets angry when doesn't get own way

Rating (1-7) \_\_\_\_\_ Yes / No

13. Has temper tantrums

Rating (1-7) \_\_\_\_\_ Yes / No

14. Sasses adults

Rating (1-7) \_\_\_\_\_ Yes / No

15. Whines

Rating (1-7) \_\_\_\_\_ Yes / No

16. Cries easily

Rating (1-7) \_\_\_\_\_ Yes / No

17. Yells or screams

Rating (1-7) \_\_\_\_\_ Yes / No

18. Hits parents

Rating (1-7) \_\_\_\_\_ Yes / No

19. Destroys toys and other objects

Rating (1-7) \_\_\_\_\_ Yes / No

20. Is careless with toys and other objects

Rating (1-7) \_\_\_\_\_ Yes / No

21. Steals

Rating (1-7) \_\_\_\_\_ Yes / No

22. Lies

Rating (1-7) \_\_\_\_\_ Yes / No

23. Teases or provokes other children

Rating (1-7) \_\_\_\_\_ Yes / No

24. Verbally fights with friends own age

Rating (1-7) \_\_\_\_\_ Yes / No

25. Verbally fights with sisters and brothers

Rating (1-7) \_\_\_\_\_ Yes / No

26. Physically fights with friends own age

Rating (1-7) \_\_\_\_\_ Yes / No

27. Physically fights with sisters and brothers

Rating (1-7) \_\_\_\_\_ Yes / No

28. Constantly seeks attention

Rating (1-7) \_\_\_\_\_ Yes / No

29. Interrupts

Rating (1-7) \_\_\_\_\_ Yes / No

30. Is easily distracted

Rating (1-7) \_\_\_\_\_ Yes / No

31. Has short attention span

Rating (1-7) \_\_\_\_\_ Yes / No

32. Fails to finish tasks or projects

Rating (1-7) \_\_\_\_\_ Yes / No

33. Has difficulty entertaining self alone

Rating (1-7) \_\_\_\_\_ Yes / No

34. Has difficulty concentrating on one thing

Rating (1-7) \_\_\_\_\_ Yes / No

35. Is overactive or restless

Rating (1-7) \_\_\_\_\_ Yes / No

36. Wets the bed

Rating (1-7) \_\_\_\_\_ Yes / No



## Appendix E: Perceived Stress Scale-Revised (PSS-R)

Please rate the following items from *never* (0) to *very often* (4).

1. How often have you felt that you were effectively coping with important changes that were occurring in your life?
2. How often have you felt confident about your ability to handle your personal problems?
3. How often have you felt things were going your way?
4. How often have you been able to control the irritations in your life?
5. How often have you been able to control the way you spend your time?
6. How often have you been upset because of something that happened unexpectedly?
7. How often have you felt that you were unable to control the important things in your life?
8. How often have you felt nervous and stressed?
9. How often have you found that you could not cope with all the things that you had to do?
10. How often have you been angered because of things that happened outside of your control?
11. How often have you found yourself thinking about things that you have to accomplish?

12. How often have you felt difficulties were piling up so high that you could not overcome them?

