# An Analysis of Mind-Mindedness, Parenting Stress, and Parenting Style in Families with Multiple Children

by

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B.A., University of Montana, 2004

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**Supervisory Committee**

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## Abstract

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Mind-Mindedness, a parent's tendency to attribute thoughts and intentions to his or her child, is related to numerous child outcomes including infant attachment security and child social-cognitive development. Despite established research, the construct is still developing and current research continues to provide clarification. This study sought to contribute to the clarification of mind-mindedness in three main ways.

First, the present study examined within-parent consistency with respect to mind-mindedness, parenting stress, and parenting style. Results indicated that parenting stress and parenting style tended to covary for two children in the same family, whereas mind-mindedness did not. Additionally, parents tended to experience different levels of parenting stress or utilize different parenting strategies between their two children. By contrast, significant differences for mind-mindedness were not found.

Secondly, the present study examined the relation between mind-mindedness and parenting stress. Results supported an inverse relation between mind-mindedness and parenting stress for the older child. Results also revealed a *positive* relation between mind-mindedness and parental distress for the younger child; this was specifically relevant for children age 30 months and younger. Multiple interpretations for this finding are explored.

Third, this study examined the relations between parenting style, parenting stress, and mind-mindedness. Results indicated two general trends: For the younger children, when parents thought about their child in a more mind-minded manner, they also tended to utilize more authoritative parenting strategies; this parenting style was also related to lower parenting stress. For the older children, when parents thought about their child in a more mind-minded manner, they also tended to utilize less authoritarian parenting strategies as well as experience less parenting stress as related to parent-child dysfunctional interactions.

The findings of this study support previous findings regarding mind-mindedness and parenting stress as well as contribute to an improved understanding of the consistency of parenting constructs between two children in the same family and the relation between parenting stress and parenting style. These findings also raise questions for future research with respect to mind-mindedness in very young children. Future research areas and implications are discussed.

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## Dedication

To my kids, who have provided me love, encouragement, and countless hypotheses to explore.

To my biggest supporter, Chris, who without, none of this would have been possible.

# An Analysis of Mind-Mindedness, Parenting Stress, and Parenting Style in Families with Multiple Children

## Introduction

The importance of family context and the subsequent familial interactions cannot be underestimated in the development of young children. Specifically, the parent-child relationship plays a vital role in providing a context within which the child grows and develops. Embedded within the parent-child relationship are characteristics of the parent, the child, and their interaction. One such characteristic is parental mentalization: a parent's ability to attribute mental states to his or her child. Parental mentalization is conceptualized in several different ways depending on the theoretical context within which a specific conceptualization originated. Parental Mind-Mindedness (originally termed *Maternal* Mind-Mindedness) is one operationalization of parental mentalization and refers to a parent's tendency to view his or her child as an individual with thoughts and feelings of his or her own (Meins, 2013). Mentalization is a critical predictor of both infant attachment security and child social-cognitive development (Rosenblum, McDonough, Sameroff, & Muzik, 2008). Additionally, parental mentalization abilities are impacted by other characteristics within the relationship; for example, parenting stress is associated with reduced parental mentalization capacities (McMahon & Meins, 2012; Walker, Wheatcroft, & Camic, 2012). Despite established research, much is still unknown about mind-mindedness, its relation to parenting stress and its consistency across children in the same family. The goal of this thesis is to provide an overview of mind-mindedness and current research, examine within-parent variability as it applies to mind-mindedness and parenting stress in families, and further explore the convergent and discriminant validity of mind-mindedness.

The family environment is one of the most proximal influences on a child's development and is vitally important in understanding children's social-emotional development (Crnic & Neece, 2015). Within the family environment are numerous relationships, including but not limited to parent-child relationships as well as relationships between siblings. Relationships are defined as an "integrated network of enduring emotional ties, mental representations, and behaviors that psychologically connect one person to another over time and across space" (Thompson, 2015, p. 202). They are not only an integral component of the family environment but they are also crucial for the development of children. Relational partners within the family environment have extensive developmental influence because their interactions with the child are distinct from other interactions the child may have (Thompson, 2015).

One such relational partner is a child's parent and thus the parent-child relationship is deemed a crucial factor in the social development of a child. Despite this established parental influence, the specificity of this influence is still unknown as research findings are mixed and the lack of a singular or unifying theory of parental influence is problematic (O'Connor, 2002). One path of parental influence is parental mentalization: a parents' ability to see his or her child as a psychological agent.

## Mentalization

The construct of mentalization initially developed out of the social cognition literature. The term social cognition is used to describe the process of coming to understand the intentions of another person through the understanding of the unique and coordinated perspectives of the self and other (Carpendale & Lewis, 2015). Specifically, the construct of mentalization developed out of the Theory of Mind (ToM) literature which originated from the work of Premack & Woodruff (1978) who discussed the assessment of the ability to impute mental states with respect to self and other in chimpanzees. This idea was then reformulated through the lens of psychoanalytic theory and attachment theory to become a parental mentalizing construct.

Subsequently, parental mentalizing gained new importance and meaning in the attachment literature as the vehicle through which the attachment relationship influenced development. Presently, empirical evidence suggests that the developmental influence of parental mentalization occurs because a parent's appropriate and accurate mentalizing of his or her child fosters a secure attachment which subsequently spurs the development of the child's own mentalizing capabilities (Sharp & Fonagy, 2008). This, in turn, impacts the child's social-cognitive development (Rosenblum et al., 2008). The significance of mentalization resides in the idea that when a parent is able to attribute mental states to his or her child, the parent is better able to understand the thoughts, intentions, desires, and feelings that underlie the child's behaviour (Shai & Belsky, 2011). This may, in turn, impact the parent's own perception of difficulty of parenting, which influences parenting stress levels. Additionally, when a child develops within a relationship where his or her mental states are represented by the parent, this leads to the child's subsequent recognition and understanding of the mental and emotional states that are implicated in his or her own behaviour and the behaviour of others (Shai & Belsky,

2011). This prepares the child for success within future relationships. The child's ability to develop mentalizing capabilities is then at least partially dependent on the parent's own mentalizing capacity such that the parent creates an environment in which the child experiences him- or herself as an intentional agent (Fonagy & Target, 1997). The familial context and the parent-child relationship are optimal environments for this recognition and subsequent understanding of mental states.

Parental mentalization has been operationalized in multiple ways. The original operationalization of parental mentalizing was reflective functioning. Reflective functioning developed out of the psychoanalytic and attachment theory literature. Fonagy first proposed the construct of reflective functioning in 1991, purporting that mentalizing should be viewed from within the social context, not in isolation (Sharp & Fonagy, 2008). Generally, reflective functioning refers to a person's ability to understand and reflect upon his or her own internal mental states as well as those of others. This leads to the ability to understand self and other behaviour with respect to mental states. Specifically, parental reflective functioning refers to the aforementioned understanding within the parent-child relationship such that the parent understands the underlying mental states of his or her own child within the framework of the parent's understanding of his or her own childhood attachment experiences (Fonagy, Gergely, Jurist, & Target, 2002; Rosenblum et al., 2008).

## Mind-Mindedness

Seven years after the introduction of reflective functioning, Meins introduced the concept of mind-mindedness, which, like reflective functioning, is also rooted in attachment theory. It was formulated with the goal of rethinking and amplifying Ainsworth's maternal sensitivity concept in an effort to identify a mechanism by which secure attachment is passed from one generation to the next. It is a pairing of the important sensitivity notions of awareness, accurate interpretation, and appropriate maternal response to child cues (Meins & Fernyhough, 2010) with the social-cognitive aspect of seeing the world from the child's view (Demers, Bernier, Tarabulsy, & Provost, 2010). The impetus for the formulation of mind-mindedness was the transmission gap in the attachment literature which refers to the finding that although attachment security is passed from one generation to another, it is still unknown what accounts for this transmission (Meins, 2013; van IJzendoorn, 1995). What is known is that maternal sensitivity, the most well-researched construct in attachment literature, accounts for less than 25 percent of variance in attachment classifications (De Wolff & van Ijzendoorn, 1997). Mind-mindedness is a cognitive developmental perspective of parental mentalization (Sharp & Fonagy, 2008). It moves past the parent's view of the infant as a being whose needs must be met and additionally highlights the parent's ability to see his or her infant or child as a being with underlying thoughts and feelings. The focus therefore is on the parent's representation of his or her child, rather than the child's actual behaviour. This requires sensitivity not only to the physical and behavioural needs of the child but also to the child's mind.

Mind-mindedness measures are age-dependent and include both an infant and a child measure. The infant measure is appropriate for ages zero to 12 months and involves a five-minute mother-infant face to face interaction for infants under six months and a 20-minute mother-infant play session for infants over six months of age. The child measure, The

Representational Measure of Mind-Mindedness in Preschool and Older Children, consists of an open-ended parent interview where the parent is asked to describe the child and then the descriptors are analyzed. Each attribute (referring to the child) is classified into one of four categories: mental, behavioural, physical, and general (Meins & Fernyhough, 2015). A mental attribute is "any comment that refers to the child's mental life, relating to will, mind, interests, pretence, imagination, intellect, knowledge, memory, and metacognition" (e.g., wilful, clever, loving, manipulative; Meins & Fernyhough, 2015, p. 16). Behavioural attributes include comments that refer directly to a child's behaviour, such as activities the child participates in, or behavioural descriptors (e.g., aggressive, talkative, or sporty). Physical attributes are any comments referring to age, physical appearance, or position within the family (e.g., blonde, four feet tall, she is my second daughter). General attributes include any comments referring to the child that do not fit in the other categories (e.g., she is a lovely girl; Meins & Fernyhough, 2015). Recently, a valence coding system has been devised by Demers and colleagues (2010), in which each comment that is deemed a mental attribute is then evaluated as positive (i.e., clever, loving, considerate), neutral (e.g., wilful), or negative (e.g., stubborn, spiteful; Walker et al., 2012). It should be noted that despite the age guidelines set forth by the authors, the representational measure has been used with respect to infants and children under the age of three in numerous studies.

The relation between mind-mindedness and child outcomes has been investigated in various settings. A consistent picture that emerges is that mind-mindedness is significantly linked to infant attachment security such that mind-mindedness is predictive of attachment security both in infancy (Arnott & Meins, 2008; Meins, Fernyhough, Arnott, Turner, & Leekam, 2011) and in the preschool years (Bernier & Dozier, 2003; Meins, Fernyhough, Russell, & Clark-

Carter, 1998; Meins, 1998). With respect to mind-minded comments, non-attuned comments (i.e., the mother comments on the infant's mental state, but the mother misinterprets the internal state of the infant) are very rare in secure mothers. Higher mind-mindedness at six months of age is also correlated with more positive and sensitive parental feeding behaviour at age one (Farrow & Blissett, 2014). Socio-cognitively, more advanced child theory of mind is associated with higher parental mind-mindedness, specifically appropriate comments (Laranjo, Bernier, Meins, & Carlson, 2010; Meins, Fernyhough, Arnott, Leekam, & De Rosnay, 2013). Parental mind-mindedness at 12 months is predictive of false belief understanding (i.e., the recognition that others may hold a belief about the world that is false or untrue) and Level 2 perspective taking (i.e., the understanding that the same object may appear differently to different people depending on the position of the viewer) at preschool age (Laranjo, Bernier, Meins, & Carlson, 2014). Furthermore, higher parental mind-mindedness is associated with more advanced executive functioning skills in children (Bernier, Carlson, & Whipple, 2010).

Despite the above literature on positive child outcomes, Bernier and Dozier (2003) suggest that maternal representations of children, when assessed through the use of the representational measure, may be unstable in the early years. The authors suggest that during a child's second or third year, the mother tends to increasingly refer to her child's mental states during interactions. During this time there is the emergence of observable mental activity (i.e., vocabulary, symbolic play), making it easier for the parent to observe mental activity in the child. This emergence of symbolic play and language draws the parents' attention toward the mental activity of the child. Prior to this age, the child's activities instead draw the parent's attention toward the child's behavioural manifestations (e.g., routines, locomotive activities) and physical attributes. Bernier and Dozier (2003) suggest that focusing on the child's mental states

(when describing the child, not during interactions) prior to age 30 to 36 months may actually indicate misattunement on the part of the parent because it is a misreading of the child's cues, given the child's overt behaviour. This is evidenced by the authors finding of a negative relation between mind-mindedness and both maternal coherence on the Adult Attachment Interview and attachment security; this finding is specific to children under 30 months of age and has not been reported in children over 30 months.

This is also evidenced in the work of Meins and colleagues (2001) who suggested that it is not the sheer amount of references to the child's mental life but the appropriateness or accuracy of these mind-minded comments that predicts attachment security. This study refers to the use of the interactive measure of mind-mindedness where determining the appropriateness of comments is more straightforward. However, as applied to the current study, it is possible that a high mind-mindedness score for a child under 30 months of age may indicate the absence of an age-appropriate appraisal of the child. This is because the use of a proportional score (i.e., percentage of the total attributes used to describe the child that are mental) would indicate that the parent viewed his or her child largely with respect to his or her mental states rather than overt behaviour. This would therefore suggest that the comments are in fact not appropriate because the overt behaviour of children under 30 months of age is largely manifested through observable behaviour, not mental activity.

The postulation of unstable representations in the early years (as suggested by Bernier and Dozier, 2003) is not in line with findings that mind-mindedness demonstrates both temporal consistency when measures are taken across time (Illingworth et al., 2016; Meins et al., 2011), and predictive validity with respect to later mind-mindedness and child theory of mind (Arnott & Meins, 2008; Meins et al., 2013; Walker et al., 2012). These findings are described in more detail

below. One possible explanation is the difference between the interactive and representational measures, as inconsistency between the measures has been reported (Illingworth et al., 2016). Given this discrepancy, it is possible that the representational measure is not appropriate for young children and may represent misattunement whereas assessment via the interactive measure does not lead to this same problem. Future research in this area may help to clarify if the representational and interactive measures of mind-mindedness are in fact assessing the same construct when used in very young children (i.e., under 30 months of age).

**Mind-Mindedness: Relational Construct or Stable Trait?**

Despite extensive research on mind-mindedness, the conceptualization of the construct is still in flux. Variable findings in prior studies have led to uncertainty regarding whether mind-mindedness is a product of close relationships and thus a relational construct or whether it is a cognitive-behavioural trait within a person that suggests consistency in how that person responds to situations (Hill & McMahon, 2015; Illingworth, MacLean, & Wiggs, 2016; Meins et al., 2011; Meins, Fernyhough, & Harris-Waller, 2014). If mind-mindedness is a cognitive-behavioural trait, this indicates that a person would be consistently mind-minded regardless of the relationship with the person (or object[1]) he or she is describing (Meins et al., 2014). If mind-mindedness is a relational construct, this indicates that a person may differ in his or her level of mind-mindedness depending on whom or what is being described. A relational conceptualization suggests that mind-mindedness may depend on the level of intimacy and thus, be determined by the specific relationship (Illingworth et al., 2016; Meins et al., 2014). If mind-mindedness is tied to a specific relationship, this implies inconsistency in the construct; for example, a person may describe a close friend in a more mind-minded manner than he or she would describe a famous

[1] Meins and colleagues had participants describe work of art as well as people.

person because the relationship with the close friend involves a greater level of intimacy (Meins et al., 2014).

Recent research has sought to clarify the construct of mind-mindedness through examining its consistency across various relationships. A lack of consistency in the level of mind-mindedness across different representational descriptions would indicate within-person variability. Research regarding within-parent variability is a burgeoning field; it may suggest a lack of consistency in how a parent conceptualizes, or relates to, each of his or her children. Much of the research regarding parent-child relationships employs a between-family design, examining similarities and differences *between* parents of different families (O'Connor, 2002). However, between-family designs cannot effectively address within-parent variability; a phenomenon intrinsic to the parent-child relationship, that is due to the *unique* parent-child relationship that a parent has with each of his or her children. Although less common, a within-family design is a valid way to address this variability as it applies to parenting constructs (Deater-Deckard, Smith, Ivy, & Petril, 2005; Meirsschaut, Warreyn, & Roeyers, 2011). Findings regarding related parenting constructs (i.e., parental negativity, parental positivity, parenting stress) suggest a lack consistency between two children in the same family (Deater-Deckard, 1996; Deater-Deckard, 2000; Deater-Deckard et al., 2003; Deater-Deckard et al., 2005; Dunn et al., 1998; Meirsschaut et al., 2011). The present study sought to extend the concept of within-parent variability to mind-mindedness to evaluate the consistency of the construct between two-children in the same family.

Recent findings suggest that mind-mindedness may be a relational construct. Meins and colleagues (2014) completed four studies to elucidate the construct of mind-mindedness by examining consistency across various relationships. The first study examined mind-mindedness

in mothers when they described both their child and their current romantic partner; these descriptions were positively correlated (Meins et al., 2014). Studies two, three, and four used samples of young adults and the participants were asked to describe a variety of people and items (close friend, current romantic partner, specified and unspecified famous people, and works of art). The authors found that descriptions of close friends and current romantic partners were positively correlated but there was no relation between descriptions of close friends and famous people or works of art. Despite this positive correlation, study two also found that mind-mindedness was higher when describing a romantic partner than a close friend. This finding suggests that the level of intimacy is a factor in the extent to which an individual uses mind-minded comments (Meins et al., 2014) and thus the consistency of mind-mindedness may be impacted by this level of intimacy.

A more recent study by Hill and McMahon (2015) sought to replicate the above findings of Meins and colleagues (2014) by evaluating the consistency of mind-minded descriptions across a child, partner, and famous person. Although frequency scores and proportional scores were positively correlated, the authors only found support for consistency (positive correlations between descriptions) when analyzing frequency scores. Although these findings do suggest consistency, they should also be interpreted with caution, as the findings were only significant for frequency scores not proportional scores. Proportional scores control for verbosity and assess the percentage of descriptors that are mental out of the total number of descriptors. Frequency scores only allow for the total number of descriptors, and thus may portray an inaccurate picture because they do not take into account the verbosity of the responder. Meins and colleagues (2014) as well as Illingworth and colleagues (2016; see below) both used proportional scores to evaluate consistency; proportional scores are also recommended in the 2015 Mind-Mindedness

Coding Manual (Meins & Fernyhough, 2015). Therefore, the present study also chose to evaluate consistency using proportional scores.

Although the above two studies (Hill & McMahon, 2015; Meins et al., 2014) contributed to clarification of the conceptualization of mind-mindedness, they both examine relationships with varying levels of intimacy or closeness. Only one study has addressed the consistency of mind-mindedness between siblings, a relationship that may theoretically suggest equal levels of intimacy (Illingworth et al., 2016). In 32 families the authors investigated the consistency of mind-mindedness between a younger sibling and an older sibling across two time points (nine months apart). At the first time point, there was no support for consistency between the mind-mindedness associated with the younger siblings and the mind-mindedness associated with the older siblings. However, nine months later at time point 2, there was a positive correlation between the mind-mindedness of the older siblings and mind-mindedness of the younger siblings.

Put together, the above findings suggest that it is still unclear whether mind-mindedness is a relational construct or a more consistent, cognitive-behavioural trait. One way to address this question is to utilize a within-family research design to examine within-parent consistency with respect to mind-mindedness. The first goal of the present study was to address this question by examining a parent's mind-mindedness with respect to two children within the same family.

**Parenting Stress and Mind-mindedness**

Numerous studies have explored parental attributes and predictors of parental mind-mindedness including parental attachment state of mind, negative maternal behaviour (hostile behaviour directed at the child during in-home interactions), maternal psychopathology, parenting stress, and breastfeeding (Demers et al., 2010; McMahon & Meins, 2012). Reviews

identify parental attachment state of mind, which is a parent's own view of his or her childhood attachment experiences, as the best-established predictor of parental mind-mindedness (Demers et al., 2010). This parental attachment state of mind is measured as greater coherence on the Adult Attachment Interview with respect to attachment state of mind and is predictive of higher parental mind-minded behaviour (Arnott & Meins, 2008; Demers et al., 2010). One finding of particular importance is the inverse relation between mind-mindedness and parenting stress.

Three studies have established an inverse relation between mind-mindedness and parenting stress (Demers et al., 2010; McMahon & Meins, 2012; Walker et al., 2012). Parenting stress is defined as a "subjective experience of distress" (Deater-Deckard, 2004, p. 1) that is based on a person's expectations of parenthood and how these expectations are violated. It may "lead to aversive psychological and physiological reactions arising from attempts to adapt to the demands of parenthood" (Deater-Deckard, 2004, p. 6). The subjective experience is key because it means that two parents in the same situation may experience different levels of parenting stress. Despite this established inverse relation, the causal relation between mind-mindedness and parenting stress is still unclear. It is possible that a parent may be overwhelmed by stress and unable to see his or her child as a person with his or her own mental and emotional states; this stress may impede the parents ability to develop a mind-minded representation of his or her child (McMahon & Meins, 2012; Rosenblum et al., 2008). Another possibility is that parental cognitions contribute to the development of parenting stress; how a parent thinks about the intentions behind his or her child's behaviours may contribute to the experience of parenting stress because behaviour may be less frustrating and, by virtue, less stressful (McMahon & Meins, 2012).

Demers and colleagues (2010) evaluated mind-mindedness and parenting stress in a sample of 106 mothers of 18-month-old children. The authors reported that positive mind-mindedness (as determined by the authors' valence coding system) negatively correlated with parenting stress and positively correlated with seeing the child as less difficult. In a hierarchical regression model predicting positive mind-mindedness, parenting stress accounted for 5.1% of the variance, above the established predictor of coherence on the Adult Attachment Interview (accounted for 5.7% of variance). Although causality cannot be inferred, the authors argued that due to the longitudinal nature of the study (parenting stress assessed at 6 and 10 months, mind-mindedness assessed at 18 months), these findings bring to bear the possibility that if parenting stress is lower in infancy and the child is perceived as easier, these experiences may then contribute to the development of a more mind-minded view of the child (Demers et al., 2010).

McMahon and Meins (2012) evaluated mind-mindedness and parenting stress in a sample of 86 mothers of four-year-old children. The authors reported that when mind-mindedness and positive mind-mindedness were higher, parents reported less parenting stress and engaged in less hostile behaviours during interactions with their child. Additionally, parenting stress appeared to mediate the relation between mind-mindedness/positive mind-mindedness and non-hostility. Given that data were collected concurrently, this study does not provide evidence for the causality of the relation between parenting stress and mind-mindedness (McMahon & Meins, 2012). However, the authors postulate a causal interpretation based on theoretical grounds. They suggest that a parent's inclination to think in mind-minded ways about his or her child may influence "the subjective experience of parenting stress" (p. 250). In essence, a parent's ability to see his or her child as a psychological agent and thus see the emotions, thoughts and intentions behind the child's behaviour allows the parent to conceptualize the child in a specific manner

(McMahon & Meins, 2012, p. 250). The ability to conceptualize a child's behaviour in this manner may diminish the subjective experience of stress, thus making the experience of parenting less stressful. In other words, if a parent is able to mentalize, his or her subjective experience of parenting may be improved. This hypothesis is based on three main theoretical assumptions: (1) mind-mindedness has demonstrated temporal stability, it is stable even before the birth of the child (Arnott & Meins, 2008), therefore it may precede parenting stress; (2) mind-mindedness is generally not related to characteristics of the child, including temperament and cognitive ability (Meins et al., 2001; Meins et al., 2011), and (3) when a parent can see the mental states behind child behaviour, he or she experiences that behaviour as less frustrating; how a parent thinks about the intentions behind behaviour contributes to parenting stress (Deater-Deckard et al., 2005; McMahon & Meins, 2012).

Walker and colleagues (2012) examined mind-mindedness and parenting stress in a sample of 49 parents of three to five year-olds. The sample was comprised of a clinical ($n$ = 24) and community sample ($n$ = 25). There was no relation between mind-mindedness and parenting stress in the community group. However, in the clinical group, parents who experienced higher levels of parenting stress also tended to describe their child in a less mind-minded manner. Specifically, when parents experienced greater parental distress and difficult parent-child interactions, they had lower mind-mindedness. In the community group there was a strong, negative relation between mind-mindedness and child emotional and behavioural difficulties, this was not found for the clinical group. The authors argue that these findings contribute to the understanding of the relation between mind-mindedness and parenting stress in two ways. First, the relation between mind-mindedness and parent-child dysfunctional interactions is expected because both are strongly associated with attachment (Abidin, 1995; Walker et al., 2012).

Second, the negative relation between parental distress and mind-mindedness, but not difficult child behaviours suggests that when a parent has lower mind-mindedness it cannot be reduced to seeing the child as more difficult. Instead, it is stress directly related to the parent-child relationship (Walker et al., 2012). However, these findings should be interpreted with caution because the use of a clinical sample and the small sample size limit the generalizability of these findings. Still, the findings do provide support for a relation between mind-mindedness and parenting stress.

Putting together the above findings regarding mind-mindedness and parenting stress suggests that much is still unknown about this relation. Additionally, there is no clear agreement regarding the causal relation between these variables because of the lack of longitudinal research on this topic. While it was beyond the scope of the present study to address this lack of longitudinal research, I did seek to further elucidate the relation between mind-mindedness and parenting stress by evaluating the consistency of, and the relation between, these two parenting constructs in families with at least two children.

I also sought to further clarify the relation between parenting stress and mind-mindedness in the context of general life stress. General life stress has a complex relation with parenting stress because when life stress levels are higher, parenting is more difficult and the likelihood of problematic family interactions increases (Abidin, 2012). Additionally, the additive nature of stressors increases the likelihood that a parent may utilize more dysfunctional parenting strategies (Abidin, 2012). Therefore, a parent with higher levels of situational or general life stress is likely to experience more difficulty with parenting, which subsequently increases the experience of parenting stress. Although the two can never be entirely disentangled, the present study sought to evaluate the relation between parenting stress and mind-mindedness within the

context of general life stress in two ways: 1) by investigating this relation as it naturally presents in a parent's life (without a control measure), and, 2) by investigating this relation with a general life stress control measure in place, in order to evaluate the unique contribution of parenting stress. The full-length Parenting Stress Index includes an optional Life Stress scale; however, the short-form used in this study does not. Therefore, a general measure of perceived life stress was included in this study to allow for a more in-depth evaluation of the relation between mind-mindedness and parenting stress in the context of general life stress; effectively investigating if general life stress may impact this relation.

Furthering the understanding of mind-mindedness and parenting stress is vital for a number of reasons but most importantly because mind-mindedness appears to be amenable to, and important for, intervention (Colonnesi et al., 2013; Demers et al., 2010). Interventions grounded in mind-mindedness are potentially powerful tools of change for a variety of familial situations. For example, interventions focused on effective mentalizing may impact the parent's reflective capacity, improve the parenting experience and the parent's view of the parent-child relationship, and change behaviour within parent-child interactions including the parent's manner of interaction with the child. All of this may relate to parenting stress levels, another area that is prime for intervention. It is also possible that improving parental mentalizing may in turn improve a parent's reflective capacity about his or her own stressful situation, thus interacting with parenting stress. Lastly, improving a parent's ability to mentalize may in turn impact child relationship security, theory of mind, and child mentalization (Rosenblum et al., 2008; Walker et al., 2012).

**Reliability and Validity of Mind-Mindedness**

In addition to studies that have examined the consistency of mind-mindedness, research on reliability and validity of mind-mindedness has also contributed to the clarification of this construct. Mind-mindedness tends to demonstrate temporal consistency when measures are taken across time (Illingworth et al., 2016; Meins et al., 2011). Mind-mindedness also demonstrates predictive validity in that mind-mindedness at six months of age explains a significant amount of variance in mind-mindedness at 48 months as well as in child theory of mind at 48 months (Arnott & Meins, 2008; Meins et al., 2013; Walker et al., 2012). Convergent validity has been demonstrated using various constructs that would be expected to relate to mind-mindedness. With respect to emotional availability, mind-mindedness is associated with less hostility during interactions in mother-child dyads with four-year-old children (McMahon & Meins, 2012). Numerous studies have validated the expected relations with reflective functioning (Rosenblum et al., 2008), maternal sensitivity (Farrow & Blissett, 2014; McMahon & Meins, 2012; Meins, 2013), childhood practitioner sensitivity (Degotardi & Sweller, 2012), and secure child attachment (Meins, Fernyhough, Fradley, & Tuckey, 2001; Meins, 2013).

Generally, mind-mindedness does not correlate highly with demographic variables. Most studies find it is unrelated to socio-economic status (Hill & McMahon, 2015; Illingworth et al., 2016; Meins et al., 2001; Meins et al., 2011), maternal depression, perceived social support, and infant temperament (Meins et al., 2011). Despite the existence of mixed findings with respect to maternal age (Walker et al., 2012) and maternal education level (Rosenblum et al., 2008), two recent studies found no association between mind-mindedness and maternal age and education (Hill & McMahon, 2015; Illingworth et al., 2016). With respect to child age, recent studies have found no relation between child age and mind-mindedness (Hill & McMahon, 2015; Illingworth et al., 2016; Meins et al., 2014).

Although construct validity of mind-mindedness has been established in a few studies, further clarification of the construct validity of mind-mindedness would help to establish it as a critical parenting construct worthy of future intervention-based research. Therefore, the present study sought to align mind-mindedness with parenting style to achieve this goal. How a parent interacts and responds to his or her child's daily behaviour would be expected to relate to parental mind-mindedness. For example, McMahon and Meins (2012) reported less hostile behaviour in parent-child interactions when the parent also described his or her child in a more mind-minded manner. Specifically, authoritarian and authoritative parenting styles may relate to mind-mindedness in different ways. Authoritative parenting includes awareness of the child's view, uses reasoning and communication, and utilizes discussions while still employing firm guidance (Baumrind, 1996). An authoritarian parent is more focused on compliance without the need for explanations or justification to the child. To my knowledge, there are no studies that have examined the relation between parenting style and mind-mindedness. However, I would predict that authoritative parenting would be positively associated with mind-mindedness whereas authoritarian parenting would be negatively associated with mind-mindedness. This is because a parent who has an authoritative parenting style may be more likely to respond to his or her child's behaviour by discussing feelings with his or her child; whereas a parent with an authoritarian style may be more likely to respond with a reprimand (Vinden, 2001). A parent who responds by discussing feelings with his or her child would theoretically be more likely to see his or her child as a person who has thoughts and feelings of his or her own and therefore describe his or her child in a mind-mindedness manner. This, however, is not the case for all families, as parenting styles are very culture-dependent. There are well-documented differences in parenting styles, particularly between Anglo-American and Asian American parents (Vinden,

2001). For example, in Korean American mothers, authoritarian parenting does not have the same negative outcomes as it does in Anglo-American families because the strictness is combined with encouragement and warmth. Therefore, ethnicity should be considered when evaluating these findings.

Additional evidence for the convergent relations between mind-mindedness and authoritative parenting style is found in the theory of mind and false belief understanding literature. The literature regarding child theory of mind and parenting styles and discipline use is very limited with frequent null results (O'Reilly & Peterson, 2014). However, a few promising results do exist. Ruffman, Perner, & Parkin (1999) found that mothers who responded to child difficulty with a discussion about feelings had children with more advanced false-belief understanding. This discussion about feelings is more typical of authoritative than authoritarian parents. One explanation of this finding is that an authoritative parent who acknowledges that both the parent and child have a perspective is giving his or her child practice reflecting upon and integrating multiple, sometimes conflicting, perspectives. Alternately, an authoritarian parent who focuses solely on rule adherence is actually teaching the child to see only the perspective of the parent (Vinden, 2001). This exposure to multiple perspectives may contribute to the child's false belief understanding. However, Vinden's (2001) findings did not unequivocally support these hypotheses. Instead, she found that the relation between parenting style and child false belief understanding was culture dependent such that for Anglo-American families, less controlling mothers had children with more advanced false belief understanding. However, this did not hold true for the Korean American participants. O'Reilly and Peterson (2014) modified Vinden's (2001) original parenting style measure, the Parenting Attitudes Inventory (the PAI) to eliminate items that had low or overlapping factor loadings or poor face validity. The

Conformity subscale was used to measure authoritarian parenting and the Autonomy subscale was used to measure authoritative parenting. Using the modified PAI, the authors did find a relation between parenting style and child theory of mind in a sample of Australian (first language English) parent-child dyads. A significant negative correlation was found between parental Conformity scores and child total theory of mind scores after controlling for age. Additionally, after child age was partialled out, a positive relationship was found between parental Autonomy scores and child theory of mind scores.

Given these findings, I predict that parental mind-mindedness (as measured by The Representational Measure of Mind-Mindedness In Preschool and Older Children; Meins & Fernyhough, 2015) and authoritative parenting (as measured by the Parenting Styles and Dimensions Questionnaire; Robinson, Mandleco, Olsen, & Hart, 2001) would be positively related which would contribute to the establishment of convergent validity for mind-mindedness. Additionally, I predict that mind-mindedness would be negatively related to authoritarian parenting, thus contributing to the establishment of discriminant validity for mind-mindedness. Lastly, I predict that the association between authoritative parenting and mind-mindedness would be significantly stronger than the association between authoritarian parenting and mind-mindedness.

## Present Study

In the present study, I examine the consistency of three main parenting constructs: mind-mindedness, parenting stress, and parenting style. I seek to replicate previous findings regarding mind-mindedness and parenting stress as well as further examine the construct validity of mind-mindedness. This research adds to recent studies examining consistency of mind-mindedness while being the first study to examine mind-mindedness and parenting stress for two children within the same family.

The present study has three main goals. First, I examine within-parent consistency for mind-mindedness, parenting stress, and parenting style. I predict that parenting stress, parenting style, and mind-mindedness will differ between two children in the same family because of the unique relationship that a parent has with each of his or her own children, and because prior studies have demonstrated a lack of consistency in various related parenting constructs (Deater-Deckard, 1996; Deater-Deckard, 2000; Deater-Deckard et al., 2003; Deater-Deckard et al., 2005; Dunn et al., 1998; Illingworth et al., 2016; Meirsschaut et al., 2011). Second, I examine the relation between mind-mindedness and parenting stress in an effort to replicate three previous studies that have examined this relation (Demers et al., 2010; McMahon & Meins, 2012; Walker et al., 2012). I predict that mind-mindedness will be negatively correlated with parenting stress. Third, I examine the relations between all three constructs, with the following predictions: (1) I predict a positive association between mind-mindedness and authoritative parenting, (2) I predict a negative association between mind-mindedness and authoritarian parenting, and, (3) I predict that the association between authoritative parenting and mind-mindedness will be significantly stronger than the association between authoritarian parenting and mind-mindedness because of the strong emphasis in authoritative parenting on understanding the child's mental states. In an

exploratory manner and in an effort to provide context within which to evaluate mind-mindedness, I also investigate the relation between mind-mindedness and permissive parenting as well as the relation between parenting style and parenting stress. The consistency of parenting style and parenting stress are evaluated to provide a context within which the consistency of mind-mindedness may be interpreted. It allows for a comparison of the relation between mind-mindedness of the younger child and mind-mindedness of the older child in comparison to these same relations with respect to parenting stress and parenting style. In a similar fashion, the relation between parenting stress and parenting style is evaluated to provide a context within which the relation between mind-mindedness and parenting stress can be evaluated.

A number of statistical controls were included in the present study. A measure of perceived life stress was included as a control measure to evaluate the unique contribution of parenting stress, above general daily stress. Analyses regarding the relation between mind-mindedness and parenting stress were conducted with and without this control measure to evaluate the potential impact of life stress on this relation.

Although mind-mindedness has not typically been related to demographic variables, other parenting constructs frequently are. Therefore, demographic variables will be evaluated for each analysis. A demographic variable will be included as a control variable in an analysis if this demographic variable is significantly related to the other variables in a correlation, or to predictor variables and criterion in a regression.

# Method

## Participants

Data were collected from parents in families with at least two children. Recruitment efforts yielded 62 parents; nine were excluded from the study because one of the parents' children did not meet the inclusion criteria for typical development. Participants were 53 parents (*M* age = 35.45 years, *SD* = 4.75 years, range = 24 – 45 years), predominantly female (1 male, 52 females), with the majority having two children (73.6%) and the rest having three children (20.8%) or four children (5.7%). Participants were recruited from local preschools and daycares in the Greater Victoria area, and through on-line parenting groups across British Columbia. The majority of the sample was Caucasian and were residing in two-parent households (96.2%). The majority of the sample possessed a University degree (83%; Undergraduate 41.5%; Graduate 41.5%).

Parents were required to have at least two typically developing children to participate: an older child and a younger child. The older children (*M* age = 63.06 months, *SD* = 16.75, range 22.65 – 101.49 months) were on average, 29 months older than the younger children (*M* age = 34.17 months, *SD* = 14.05 months, range 16.18 – 64.18 months). The older children were evenly split with respect to gender (50.9% male; 49.1% female) and nearly half were enrolled in school (45.3%); the rest stayed at home with a parent (20.8%), attended preschool (18.9%), or attended daycare (15.1%). There were more males (58.5%) than females (41.5%) in the younger group. Nearly half of the younger children stayed at home with a parent (49.1%); the rest attended daycare (35.8%), preschool (11.3%), school (1.9%) or were in other care (1.9%).

## Materials

Participants completed all surveys on their own personal computer.

## Measures

**Modified Checklist for Autism in Toddlers, Revised with Follow-Up (M-CHAT-R/F; Robins, Fein, & Barton, 2009).** The M-CHAT-R/F is a 2-stage parent-report measure to be used as a screener to determine the necessity for a referral for an ASD assessment and can also function as a screener for developmental delay or concerns. The first stage consists of 20 items. These items are scored and if the score is between 0 and 2 the child is considered low risk. If the score is between 3 and 7, follow-up questions are administered. If the score is 8 or above the child is considered high-risk. For the purposes of this study, parents with children who scored between 3 and 7 were administered follow-up questions via a branching system within the on-line survey program. If the score was still 3 or higher, they were excluded from the study. The M-CHAT possesses adequate psychometric properties. The original M-CHAT validation study reported adequate properties including sensitivity of .87, specificity of .99, positive predictive power of .80 and negative predictive power of .99 (Robins, Fein, Barton, & Green, 2001). Internal reliability is adequate and ranges from 0.80 (Snow & Lecavalier, 2008) to 0.85 (Robins et al., 2001). The newest M-CHAT version, the M-CHAT-R/F, has been recently validated in a sample of 16,071 children. Children who scored above the low-risk threshold after follow-up had a 47.5% risk of an ASD diagnosis and a 94.6% risk of a developmental delay or concern (Robins et al., 2014). Therefore, the M-CHAT is an adequate measure for use in the present study as an exclusionary measure for these two criteria (ASD and developmental delay). Although designed for children up to 30 months, justification for its use in children up to 48 months exists (Roux et al., 2012; Snow & Lecavalier, 2008; Yama, Freeman, Graves, Yuan, & Campbell, 2012). For

example, the use of a cut-off score of three items was confirmed by Snow and Lecavalier (2008) with an accurate classification 77 percent of the time for children up to 48 months. Therefore, the M-CHAT-R/F was used in the present study as an exclusionary measure for all children up to 48 months. The present study found lower estimates of internal consistency using Cronbach's alpha than found in the literature, $\alpha = .272$. This is likely due to the email pre-screening that occurred prior to the completion of the M-CHAT-R/F, which excluded all children for whom a parent expressed a developmental, mental health, or medical concern. This resulted in eight of the items having zero variance and being excluded from analysis.

**Autism Spectrum Quotient 10 Child (AQ-10 child; Allison, Auyeung, & Baron-Cohen, 2012).** The AQ-10 child (ages 4-11) is a 10-item parent-report screening measure designed to aid health professionals in determining the necessity for a referral for an ASD assessment. It is directly derived from the AQ-child and was created by analyzing completed AQ-child protocols and determining the 10 best items based on a discrimination index (Allison et al., 2012). Results for the AQ-10 child indicated a significant difference in the means of children with ASD and the controls, with a large magnitude (eta squared = 0.81). The AQ-10 child was significantly correlated with the AQ-child ($r = 0.94$, $p < .0001$) and Cronbach's alpha was 0.90. With respect to cut-points that balanced both specificity and sensitivity, a cut-point of six was determined for the AQ-10 child. At this point, sensitivity, specificity, and positive predictive value (PPV) were 0.95, 0.97, and 0.94, respectively for the AQ-10 child. Lastly, internal consistency was adequate (>0.85). Given the adequate psychometric properties of the above-mentioned 10-item version, the present study employed this measure to screen for ASD within the typically developing children (if children scored above the cut-point, the parent was excluded from the study; this was paired with email screening questions). The present study found lower

estimates of internal consistency using Cronbach's alpha than found in the literature, $\alpha = .350$. This is likely due to the email pre-screening that occurred prior to the completion of the AQ-10-Child, which excluded all children for whom a parent expressed a developmental, mental health, or medical concern.

**Representational measure of MM for preschool age and older (Meins & Fernyhough, 2015; Meins et al., 1998).** The Representational Measure of Mind-mindedness consists of a brief interview or written statement. When the measure is administered in writing, the measure states that there are no right or wrong answers and that the parent should respond with whatever comes to mind. The parent is then presented with an open-ended question to describe his or her child: *Can you describe [child's name] for me?* The Representational Measure of Mind-mindedness purposefully lacks face validity which, in turn, decreases the opportunity for social desirability, resulting in greater accuracy regarding the parent's true mind-mindedness abilities (McMahon & Meins, 2012). The description of the child is analyzed and each attribute (referring to the child) is classified into one of four categories: mental, behavioural, physical, and general. A mind-mindedness index score is calculated for mental attributes, expressed proportionately to control for verbosity. Inter-rater reliability has been high across most studies ($k = 0.90$; Walker et al., 2012). In the present study, mind-mindedness was double-coded by an undergraduate Research Assistant who was trained by the experimenter and provided with a copy of the 2015 Mind-Mindedness coding manual (Meins & Fernyhough, 2015). Disagreements were resolved via conferencing and joint review of the scoring manual as recommended in previous studies. The intra-class correlation coefficient for this study was .89. Sample responses from this study are included in Appendix F.

**Parenting Stress Index, Fourth Edition, Short Form (PSI™-4-SF; Abidin, 1995).**

The PSI™-4-SF is a 36-item parent-report questionnaire used to measure the perceived stress of parenting a specific child. It is a direct derivative of the full length Parenting Stress Index (PSI) and contains 36 items, which map onto three subscales: Difficult Child (DC), Parent-Child Dysfunctional Interaction (P-CDI), and Parental Distress (PD). The Parental Distress scale consists of items addressing depression, isolation, role restriction, and the spouse/parenting partner relationship (e.g., "I feel trapped by my responsibilities as a parent"). Essentially, the Parenting Distress scale assesses how being a parent has impacted the caregiver's life (PSI-SF-4 Manual, 2004). The Parent-Child Dysfunctional Interaction scale consists of items addressing attachment, acceptability, and parental reinforcement (e.g., "My child is not able to do as much as I expected" PSI-SF-4 Manual, 2004, p.61]). Essentially, the Parent-Child Dysfunctional Interaction scale addresses the parent's satisfaction with the interactions he or she has with his or her child and if the child meets the expectations of the parent. The Difficult Child scale consists of items that are specific to the child and addresses the child's demandingness, adaptability, distractibility/hyperactivity, and mood. Essentially, this scale reflects the parent's direct perception of his or her child in terms of the child's behaviour (e.g., "my child seems to cry or fuss more often than most children"; PSI-SF-4 Manual, 2004). Lastly, the three above scales combine to form the Total Stress scale.

Parents rate each statement using a five-point Likert scale ranging from "strongly agree" to "strongly disagree." The PSI-SF demonstrates very good to excellent internal consistency ranging from .88 (PD, P-CDI) and .89 (DC) on the subscales to .95 on the Total Stress scale (Reitman, Currier, & Stickle, 2002). Concurrent validation has been established as well (Reitman et al., 2002). With respect to the DC subscale, child oppositionality and, to a lesser

extent, maternal symptomology and income accounted for nearly 40% of the variance. With respect to the P-CDI subscale, psychological symptoms, maternal education, and family income accounted for 22% of the variance. With respect to the PD subscale, family income and maternal psychological symptoms accounted for 17% of the variance (Reitman et al., 2002). Lastly, the Total Stress scale of the PSI-SF is highly correlated with the Total Stress scale of the PSI. The PSI-4-SF is typically found to be highly reliable, with Cronbach's alpha ranging from .88 to .95. The present study found similar estimates of internal consistency: Total Stress index ($\alpha$ = .91), Parental Distress ($\alpha$ = .88), Parent-Child Dysfunctional Interaction ($\alpha$ = .82), and Difficult Child ($\alpha$ = .85).

**Parenting Styles and Dimensions Questionnaire (PSDQ; Robinson, Mandleco, Olsen, & Hart, 2001).** The PSDQ is a parent-report measure used to determine a mean score for a parent with respect to each of Baumrind's typologies: authoritative, authoritarian, and permissive. The measure consists of 32 items; each item describes a behaviour that a parent may exhibit during an interaction with his or her child. Items are rated using a Likert-type scale ranging from 1 (never) to 5 (always). Scores are obtained for three primary and 11 secondary subscales. There are a limited number of studies regarding validity of the PSDQ, however, the studies that were located found face validity, concurrent validity, and predictive validity to be satisfactory for the instrument (Olivari et al., 2013). Reliability for the primary factors, as reported by the authors, is adequate and ranges from .75 (permissive) to .86 (authoritarian) and .91 (authoritative; Robinson et al., 2001). In a review of 51 published articles using the PSDQ, Cronbach's alpha was reported as adequate and ranged from .71-.97 for authoritative and .62-.95 for authoritarian parenting (Olivari, Tagliabue, & Confalonieri, 2013). The present study found

similar estimates of internal consistency using Cronbach's alpha based on 106 administrations: Authoritative (α = .84), Authoritarian (α = .82), and Permissive (α = .77).

**Perceived Stress Scale (PSS-10; Cohen, Kamarck, & Mermelstein, 1983).** The PSS-10 is a 10-item self-report measure of perceived stress and "measures the degree to which situations in one's life are appraised as stressful" (Cohen, et al., 1983). Although a 4-item, 10-item, and a 14-item version do exist, the 10-item version was used as it is well-validated and possesses superior psychometric properties to the other two versions (Cohen & Williamson, 1988). Items are rated using a Likert-type scale ranging from 0 (never) to 4 (very often). Items 4, 5, 7, and 8 are reverse scored and then all items are summed for a total score. Norms are available based on 2,387 respondents in the United States. The PSS-10 is best fit by a two-factor model: perceived helplessness (PHS) and perceived self-efficacy (PSES; Taylor, 2015). Conflicting results regarding gender bias on the PSS-10 have recently been ameliorated through measurement invariance testing demonstrating a lack of a gender bias on both scales (PHS and PSES; Taylor, 2015). The PSS-10 is well-validated; including diverse samples, and translation has occurred in at least 25 languages (Taylor, 2015). Reliability for the PSS-10 is adequate to good ranging from .78 to .90 (Taylor, 2015). The present study found similar estimates of internal consistency using Cronbach's alpha based on 53 administrations (α = .90). The PSS-10 was used in this study to control for overall life stress.

**Demographics.** Participants answered questions about themselves, their children, and their partner including occupation, education level, and age. A demographics form was constructed for this study and can be seen in Appendix A.

**Procedure**

All participants were screened via email to ensure Canadian residency, English as a first language, and the presence of at least two children age 16 months to 10 years. Children were also screened for typical development. Parents were excluded if either of their children had: received moderate early intervention (defined as either more than six months of intervention or more than one intervention), had a developmental disorder or mental health diagnosis, or if they had a major medical condition.

Upon receiving approval for participation, participants were sent a secure, password-protected invitation to participate in the study via Fluid Surveys. All measures were written in English. Participants were automatically assigned an ID number and no contact information was associated with the survey responses. Participants were first presented with a letter of implied consent, which had to be accepted prior to proceeding. Following the letter of consent, participants completed a screening measure for each child (M-CHAT-R/F for children under four, AQ-10-Child for children over four). If the scores for a particular child exceeded the cut-off scores (greater than 2 for the M-CHAT-R/F; greater than 6 for AQ-10-Child) the survey automatically terminated and the parent was re-directed to a separate survey to enter a drawing for a $25 Amazon gift card. If the child scores for both screening measures were below the cut-off, the participant proceeded to complete a demographics questionnaire and then all parenting questionnaires. Participants were asked to fill out each parenting questionnaire twice, one time with respect to their younger child and one time with respect to their older child. The average time to complete all measures was 41 minutes. Participants were encouraged to complete the measures in one sitting but Fluid Surveys did provide the option to save and return to the survey

at a later date. Following completion of all surveys, participants were given the option to be directed to a separate password-protected survey to be entered to win a $25 Amazon gift card.

All measures were scored in Excel and contained no identifying information. All parenting stress raw scores were converted to T-Scores.

# Results

## Data Preparation

All variables were screened for missing data, data entry errors, skewness, kurtosis, and outliers. Data entry errors were corrected and no missing data was detected. Univariate outliers were detected using visual inspection of box-plots and identification of extreme values. A total of ten outlier scores were identified across eight variables. For the younger child, these were authoritarian parenting (1), permissive parenting (2), parental distress (1), parent-child dysfunctional interactions (1). For the older child, these were: authoritarian parenting (2), permissive parenting (1), and parental distress (2). As recommended by Tabachnick and Fidell (2007, p. 77), all outliers were replaced by substituting the outlying score with a raw score one unit larger than the next most extreme score for that variable.

**Descriptive Statistics.** All variables were analyzed for skewness and kurtosis. Descriptive statistics are presented in Table 1.

Table 1
*Descriptive statistics of parenting and perceived stress measures*

| Measure | Mean (SD) | Min-Max | Possible range | Skewness | Kurtosis |
|---|---|---|---|---|---|
| Perceived Stress | 16.21 (5.87) | 8.0 – 30.0 | 0 – 40 | 0.41 | -0.58 |
| **Younger child** | | | | | |
| Parenting style | | | | | |
| Authoritative | 3.99 (.41) | 3.0 – 5.0 | 1 – 5 | -0.21 | 0.25 |
| Authoritarian | 1.44 (.31) | 1.0 – 2.18 | 1 – 5 | 0.83 | 0.10 |
| Permissive | 1.93 (.53) | 1.0 – 3.0 | 1 – 5 | 0.53 | -0.27 |
| Mind-mindedness | .47 (.27) | 0 – 1.0 | 0 – 1.0 | 0.12 | -0.42 |
| Parenting stress | | | | | |
| Parental distress | 52.21 (8.97) | 36 – 72 | 34 – 85 | 0.20 | -0.36 |
| P-CDI | 44.83 (6.31) | 36 – 58 | 36 – 92 | 0.68 | -0.68 |
| Difficult child | 46.06 (7.33) | 35 – 61 | 32 – 87 | 0.35 | -0.75 |
| Total stress | 47.81 (6.71) | 36 – 63 | 32 – 92 | 0.22 | -0.65 |
| **Older child** | | | | | |
| Parenting style | | | | | |
| Authoritative | 4.18 (.42) | 3.4 – 5.0 | 1 – 5 | -0.09 | -0.76 |
| Authoritarian | 1.51 (.30) | 1.0 – 2.19 | 1 – 5 | 0.47 | -0.23 |
| Permissive | 1.89 (.58) | 1.0 – 3.4 | 1 – 5 | 0.60 | 0.25 |
| Mind-mindedness | .55(.28) | 0 – 1.0 | 0 – 1 | -0.23 | -0.60 |
| Parenting stress | | | | | |
| Parental distress | 50.57(9.80) | 36 - 72 | 34 – 85 | 0.36 | -0.52 |
| P-CDI | 47.00(7.01) | 37 – 64 | 36 – 92 | 0.76 | -0.37 |
| Difficult child | 49.83(9.00) | 34 – 69 | 32 – 87 | 0.09 | -1.07 |
| Total stress | 49.34(8.43) | 35 - 67 | 32 – 92 | 0.19 | -0.73 |

Note: P-CDI = Parent-Child Dysfunctional Interactions. $N = 53$.

Although no values were outside of the standard acceptable range (-1 to +1), a *Z*-test was applied to assess for normality because of the moderate sample size ($N = 53$) as suggested by Tabachnick and Fidell (2007, p. 80). Standardized scores (i.e., *Z*-scores) were obtained by dividing skew and kurtosis values by respective standard errors. Given the moderate sample size ($N = 53$) skewness and kurtosis were evaluated at both the .01 ($Z > 2.58$) and .05 ($Z > 1.96$) level. No excess kurtosis was detected. Three variables were identified as being positively skewed (>1.96, $p = .05$): authoritarian parenting for the younger child ($Z = 2.54$), parent-child dysfunctional interactions for the younger child ($Z = 2.09$), and parent-child dysfunctional interactions for the older child ($Z = 2.32$). These variables were transformed using square-root, log, and inverse transformation procedures and re-assessed for normality. Transformations were conducted prior to screening for multivariate outliers as recommended by Tabachnick and Fidell (2007, p. 74). Skewness improved slightly but a visual inspection of bivariate scatterplots showed minimal improvement. Shapiro-Wilk values were calculated for transformed and untransformed data, the transformations showed minimal improvement. All subsequent data analyses were conducted using transformed and untransformed data; these analyses yielded only minimal differences. Therefore, untransformed data are reported in all future analyses.

Multivariate outliers were identified using Mahalanobis distance and a conservative probability estimate ($p < .001$ for $x^2$) as recommended by Tabachnick and Fidell (2007). One case was identified as a multivariate outlier. Subsequent data analyses were run with and without this case. Because the outlier had virtually no impact on the results, the case was retained in the data set.

**Demographic Variables.** Zero-order correlations were conducted between demographic variables (i.e., child age, caregiver age, number of children), perceived stress, mind-mindedness

and all parenting scales to evaluate potential significant relations between the demographic variables and predictor and outcome variables. Parenting variables are frequently related to demographic attributes of the parent. Therefore, these analyses were conducted to determine if any parenting variables differ systematically based on demographic variables. Significant relations with demographic variables were addressed with respect to each analysis. If a demographic variable was significantly related to both variables in an analysis, it was controlled for in subsequent analyses. These results are displayed in Table 2.

Table 2
*Zero-order correlations for relevant demographic and perceived stress variables*

| Variable | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Child age | | | | | |
| 1. Older | | | | | |
| 2. Younger | 0.69** | | | | |
| 3. Caregiver age | 0.04 | -0.01 | | | |
| 4. Number of kids | 0.21 | 0.14 | -0.04 | | |
| 5. Perceived stress | 0.12 | 0.22 | -0.21 | 0.22 | |
| **Younger child** | | | | | |
| Parenting style | | | | | |
| 6. Authoritative | 0.10 | 0.00 | 0.08 | -0.13 | -0.16 |
| 7. Authoritarian | 0.20 | 0.38** | -0.40** | 0.43** | 0.49** |
| 8. Permissive | 0.27 | 0.41** | -0.29* | 0.04 | 0.25 |
| 9. Mind-mindedness | -0.02 | -0.05 | 0.13 | -0.28* | -0.18 |
| Parenting stress | | | | | |
| 10. Parental distress | -0.06 | 0.05 | -0.17 | -0.04 | 0.67** |
| 11. P-CDI | 0.16 | 0.29* | -0.03 | 0.20 | 0.44** |
| 12. Difficult child | 0.23 | 0.47** | -0.17 | 0.04 | 0.23 |
| 13. Total stress | 0.11 | 0.31* | -0.17 | 0.04 | 0.58** |
| **Older child** | | | | | |
| Parenting style | | | | | |
| 14. Authoritative | 0.08 | -0.12 | 0.17 | -0.08 | -0.22 |
| 15. Authoritarian | 0.24 | 0.39** | -0.29* | 0.24 | 0.53** |
| 16. Permissive | 0.17 | 0.27 | -0.41** | 0.05 | 0.27 |
| 17. Mind-mindedness | 0.03 | 0.03 | 0.04 | -0.35** | -0.24 |
| Parenting stress | | | | | |
| 18. Parental distress | 0.01 | 0.09 | -0.14 | -0.09 | 0.65** |
| 19. P-CDI | 0.05 | 0.18 | -0.30* | 0.12 | 0.45** |
| 20. Difficult child | 0.07 | 0.15 | -0.32* | 0.03 | 0.46** |
| 21. Total stress | 0.02 | 0.15 | -0.27* | 0.02 | 0.63** |

Note: P-CDI = Parent-Child Dysfunctional Interaction. Age of children in months. Age of caregiver in years. * $p < .05$. ** $p < .01$.

The age of the older child was not significantly related to any of the parenting or perceived stress variables. However, as the age of the younger child increased, parents were significantly more likely to report the use of permissive parenting strategies with their younger children, and authoritarian parenting strategies with both of their children. Similarly, with respect to parenting stress, as the age of younger children increased, parents were significantly more likely to report experiences of parenting stress with their younger children with respect to parent-child dysfunctional interactions and difficult child behaviours.

The age of the primary caregiver was related to both parenting style and parenting stress. As the age of parents increased, they were less likely to utilize authoritarian or permissive parenting strategies with both children and reported less total parenting stress, parent-child dysfunctional interactions, and difficult child behaviours with their older child. As the number of children in the family increased, parents were more likely to utilize authoritarian parenting strategies with their younger child and less likely to describe both children using mind-minded descriptors.

Perceived stress was evaluated with respect to all variables, to determine whether it was necessary to use it as a control variable. General life stress and parenting stress are highly correlated (Abidin, 2012). Therefore, controlling for perceived stress in the analysis of mind-mindedness and parenting stress allows for the assessment of the unique contribution of parenting stress. Parents who experienced higher levels of perceived life stress were more likely to report the use of authoritarian parenting strategies with both children. Additionally, these parents were also more likely to report greater parental distress, parent-child dysfunctional interactions, and total parenting stress for both children as well as difficult child behaviour for their older child. Given these relationships, perceived stress was treated as a control variable for

all analyses in which it had a significant relationship with both variables. These relationships are displayed in Table 2.

All variables were analyzed with respect to gender. Independent t-tests were utilized to determine whether any of the parenting variables differed significantly with respect to child gender. The older child group contained 27 males and 26 females. The younger child group contained 31 males and 22 females. None of the parenting variables differed significantly based on gender.

A one-way ANOVA was conducted to analyze systematic differences in the education level of the parent; there were statistically significant differences in parenting based on education level for both younger children (i.e., authoritarian parenting, permissive parenting, parent-child dysfunctional interactions) and older children (i.e., authoritarian parenting, permissive parenting). Therefore, caregiver education level was controlled for when it was significantly related to both variables in the analysis. Additionally, education level was dummy coded and evaluated in a correlational analysis to evaluate general trends. As education level increased, parents were less likely to report perceived life stress, the use of authoritarian and permissive parenting behaviours with both children, and less likely to experience parent-child dysfunctional interactions, difficult child behaviours, and parenting stress with their older children.

For each parenting variable, significant demographic predictors were assessed for collinearity. No collinearity was found between any of the demographics variables that had significant relationships with parenting variables (i.e., age of the younger child, education level of the primary caregiver, age of the primary caregiver, the number of children in the family). Therefore, for each analysis, any demographic variable that was significantly related to both variables in that analysis was entered as a control variable.

**Parenting variables.** Zero-order correlations were conducted between all parenting variables to evaluate relations between predictor variables to assess for collinearity; results are displayed in Table 3.

Table 3
*Zero-order correlations for all parenting variables*

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Younger child** | | | | | | | | | | | | | | | |
| Parenting style | | | | | | | | | | | | | | | |
| 1. Authoritative | | | | | | | | | | | | | | | |
| 2. Authoritarian | -.36** | | | | | | | | | | | | | | |
| 3. Permissive | -.13 | .47** | | | | | | | | | | | | | |
| 4. Mind-Mindedness | .26 | -.26 | .04 | | | | | | | | | | | | |
| Parenting stress | | | | | | | | | | | | | | | |
| 5. Parental Distress | -.22 | .26 | .33* | .10 | | | | | | | | | | | |
| 6. P-CDI | -.42** | .49** | .26 | -.09 | .44** | | | | | | | | | | |
| 7. Difficult Child | -.28* | .39** | .39** | -.14 | .32* | .58** | | | | | | | | | |
| 8. Total Stress | -.39** | .46** | .43** | -.07 | .79** | .76** | .78** | | | | | | | | |
| **Older child** | | | | | | | | | | | | | | | |
| Parenting style | | | | | | | | | | | | | | | |
| 9. Authoritative | .83** | -.43** | -.24 | .18 | -.28* | -.42** | -.27 | -.42** | | | | | | | |
| 10. Authoritarian | -.40** | .83** | .44** | -.16 | .35* | .50** | .30* | .45** | -.48** | | | | | | |
| 11. Permissive | -.23 | .45** | .85** | .10 | .48** | .30* | .37* | .50** | -.37** | .49** | | | | | |
| 12. Mind-Mindedness | .25 | -.41** | .03 | .22 | -.08 | -.44** | -.25 | -.28* | .17 | -.29* | -.04 | | | | |
| Parenting stress | | | | | | | | | | | | | | | |
| 13. Parental Distress | -.21 | .30* | .33* | .11 | .92** | .47** | .34* | .77** | -.27* | .39** | .47** | -.19 | | | |
| 14. P-CDI | -.46** | .56** | .39** | -.17 | .51** | .68** | .39** | .66** | -.53** | .63** | .46** | -.38** | .58** | | |
| 15. Difficult Child | -.28* | .35** | .34* | -.10 | .58** | .50** | .32** | .59** | -.27* | .51** | .44** | -.21 | .61** | .83** | |
| 16. Total Stress | -.36** | .44** | .40** | -.06 | .84** | .60** | .38** | .79** | -.43** | .56** | .55** | -.27 | .87** | .86** | .89** |

Note. P-CDI = Parent-Child Dysfunctional Interaction. * $p < .05$. ** $p < .01$

**Statistical Test of Study Hypotheses**

The aim of the present study was to examine the associations among mind-mindedness, parenting style, and parenting stress as well as to analyze the within-parent consistency of these parental constructs between two children in the same family.

**Construct consistency.** The first aim of this study was to evaluate the consistency of mind-mindedness, parenting stress, and parenting style. Consistency in this study refers to similar parenting behaviours and parental cognitions between two children in the same family, indicated by both similar average scores as well as scores that covary. A lack of consistency would indicate the possibility that parents may have different levels of mind-mindedness when describing their two children, that they may experience different levels of parenting stress with each child, and that they may utilize different parenting style strategies between their two children. Additionally, the absence of covariation would suggest that a parent who experiences higher parenting stress with one child may not experience higher parenting stress for his or her other child. I hypothesized that parent ratings of parenting stress, parenting style, and mind-mindedness would differ between two children in the same family.

***Mind-Mindedness.*** Hypothesis one was to explore the consistency of mind-mindedness by investigating the possibility that mind-mindedness may be different for a parent depending on the child he or she is describing. A Pearson product-moment correlation coefficient was computed to investigate the relation between a parent's tendency to describe his or her younger child using mind-minded descriptors and this same tendency with his or her older child. The relation was approaching significance, but did not indicate a significant relation between mind-mindedness associated with the younger and older child, $r(53) = .22$, $p = .056$. Additionally, the amount of variance in mind-mindedness associated with the younger child that is explained by mind-mindedness associated with the older child (and vice versa) is very small, 4.84 %. Due to the significant relation between the number of children in the family and mind-mindedness associated with both the younger and older child, mind-mindedness was re-evaluated while controlling for the number of children in the family. The

relation was not significant, $r(50) = .14$, $p = .336$, suggesting that mind-mindedness associated with the younger child and mind-mindedness associated with the older child do not covary. A paired samples *t*-test was conducted to compare the average scores for the mind-mindedness associated with the younger child and mind-mindedness associated with the older child. The results showed no significant difference in the average scores suggesting that mind-mindedness does not significantly differ based on which child a parent is describing. These results are displayed in Table 4.

Table 4
*Dependent t-test between older child parenting measure and respective younger child parenting measure*

| | Younger | | Older | | | |
|---|---|---|---|---|---|---|
| Variable | Mean | *SD* | Mean | *SD* | *t* | P-value |
| Mind-Mindedness | 0.47 | 0.27 | 0.54 | 0.28 | -1.70 | .097 |
| Parenting Stress | | | | | | |
| Parental Distress | 52.21 | 8.97 | 50.57 | 9.80 | 3.04 | 0.004 |
| P-CDI | 44.83 | 6.31 | 47.00 | 7.01 | -2.92 | 0.005 |
| Difficult Child | 45.62 | 6.52 | 49.49 | 7.83 | -3.60 | 0.001 |
| Total Stress | 47.57 | 6.67 | 49.15 | 7.98 | -2.39 | 0.020 |
| Parenting Style | | | | | | |
| Authoritative | 3.99 | 0.41 | 4.18 | 0.42 | -5.78 | 0.000 |
| Authoritarian | 1.44 | 0.31 | 1.51 | 0.30 | -2.81 | 0.007 |
| Permissive | 1.93 | 0.53 | 1.89 | 0.58 | 0.89 | 0.380 |

*Note*: P-CDI = Parent-Child Dysfunctional Interaction. $N = 53$, $df = 52$.

***Parenting style.*** In order to provide context within which to evaluate the consistency of mind-mindedness, consistency in parents' reports of parenting style across two children in the same family was also calculated. Significant positive, relationships were detected between the utilization of parenting strategies in younger children and the utilization of these same parenting strategies in older children for all parenting styles: $r(53) = .83$, $p = .000$ (authoritative); $r(53) = .83$, $p = .000$ (authoritarian); $r(53) = .85$, $p = .000$ (permissive). For example, parents who were more likely to report the use of authoritative parenting strategies with their younger child were also more likely to report the use of authoritative parenting strategies with their older child. With respect to demographic variable, authoritative parenting was not related to any variables. Authoritarian parenting was re-evaluated after controlling for age of the younger child, caregiver age, perceived stress, and education level; this relationship remained significant, $r(47) = .73$, $p = .000$. Permissive parenting was re-evaluated after controlling for caregiver age and education level, this relationship also remained significant, $r(49) = .82$, $p = .000$. A paired-samples *t*-test was conducted to investigate differences between the utilization of parenting techniques between younger and older children. To investigate the possibility that a parent may be more likely to utilize particular parenting techniques with one child over the other, average scores were calculated and then compared (e.g., utilize more authoritarian parenting techniques with an older child as compared to a younger child). There was a significant difference in the scores for both authoritative and authoritarian parenting. These results are displayed in Table 4.

***Parenting stress.*** Similarly, significant, positive, relationships were detected between the experiences of parenting stress for younger and older children: $r(53) = .92$, $p = .000$ (parental distress); $r(53) = .68$, $p = .000$ (parent-child dysfunctional interaction); $r(53) = .32$, $p = .01$

(difficult child); $r(53) = .79$, $p = .000$ (total stress). For example, parents who experienced more parent-child dysfunctional interactions with their younger child were also more likely to experience this with their older child. Difficult child behaviours for both children were not significantly related to any demographic variables. All other parenting stress variables were significantly related to perceived stress; therefore this was controlled for in subsequent analyses. After controlling for perceived stress, all relationships were retained: $r(50) = .85$, $p = .000$ (parental distress); $r(50) = .59$, $p = .000$ (parent-child dysfunctional interactions); $r(50) = .67$, $p = .000$ (total stress). A paired-samples *t*-test was conducted to investigate differences between parenting stress associated with the younger child and parenting stress associated with the older child. To investigate the possibility that a parent may have more parenting stress associated with one child than the other, average scores were calculated and then compared (e.g., difficult child behaviours for the younger child were compared to difficult child behaviours for the older child). There was a significant difference in the scores for all parenting stress subtypes. This suggests that parents experience different levels of parenting stress between two children in the same family. These results are displayed in Table 4.

**Mind-mindedness and parenting stress.** The second aim of the present study was to analyze the relations between mind-mindedness and parenting stress. I hypothesized that mind-mindedness would be negatively correlated with parenting stress. A Pearson product-moment correlation coefficient was computed to analyze the relationship between mind-mindedness associated with the younger child, mind-mindedness associated with the older child, and all parenting stress subtypes. A one-tailed test was conducted because the direction of relationship was pre-specified. No significant relation was detected between mind-mindedness associated with the younger child and parenting stress. The mind-mindedness associated with the older

children was negatively related to two types of parenting stress. As parent-child dysfunctional interactions with the older children and total parenting stress related to the older children increased, mind-mindedness associated with the older children decreased; $r(53) = -.38$, $p = .002$; $r(53) = -.27$, $p = .03$, respectively.

Due to the significant relations between perceived stress and parenting stress, and because of the additive effects of stressors, the relation between parenting stress and mind-mindedness was also evaluated while controlling for perceived stress. A positive relation emerged between mind-mindedness associated with the younger child and parental distress while controlling for perceived stress. These partial correlations are displayed in Table 5.

Table 5
*Partial correlations (r) between mind-mindedness and parenting stress while controlling for perceived stress*

| Parenting stress | Mind-mindedness younger child | Mind-mindedness older child |
|---|---|---|
| **Younger child** | | |
| Parental distress | 0.31* | |
| P-CDI | -0.01 | |
| Difficult child | -0.10 | |
| Total stress | 0.04 | |
| **Older child** | | |
| Parental distress | | -0.04 |
| P-CDI | | -0.32* |
| Difficult child | | -0.12 |
| Total stress | | -0.16 |

Note: P-CDI = Parent-Child Dysfunctional Interaction. df = 50. * $p < .05$.

***Mind-mindedness and parental distress.*** To investigate the emergence of the partial correlation between mind-mindedness associated with the younger child and parental distress, perceived stress was evaluated as a potential suppressor variable. There appeared to be a suppressor effect due to the semi-partial correlation for perceived stress being larger than the zero-order correlation, and the significant negative beta value associated with perceived stress. Additionally, adding perceived stress to the model nearly quadruples the amount of variance predicted by parental distress. According to Cohen and Cohen (1983) this likely indicates a classical suppression in which the correlation between the predictor and mind-mindedness is nearly zero. These results are displayed in tables 6 and 7.

Table 6
*Summary of Zero-order and semi-partial correlations with mind-mindedness*

| Model | Zero-order correlation | Semi-partial correlation |
|---|---|---|
| Perceived stress | -0.183 | -0.337 |
| Parental distress | 0.102 | 0.301 |

Table 7
*Summary of regression analysis to evaluate suppressor effect of perceived stress on the relation between parental distress and mind-mindedness associated with the younger child*

| Variable | $\Delta R^2$ | *B* | *SE*(*B*) | *β* |
|---|---|---|---|---|
| Step 1 | 0.12* | | | |
| Perceived stress | | -0.02 | 0.01 | -0.45* |
| Parental distress | | 0.01 | 0.01 | 0.40* |

Note: * $p < .05$.

To further elucidate the relation between parental distress and mind-mindedness in the younger child only, the data were split into two groups based on the age of the younger child. This was due to previous literature that suggested that higher mind-mindedness with respect to

children under 30 months of age may actually indicate misattunement on the part of the parent (Bernier & Dozier, 2003). The data were split into children 30.1 months and over ($n$ = 29, $M$ age = 44.56 months, $SD$ = 10.25 months) and children age 30 months and younger ($n$ = 24, $M$ age = 21.61 months, $SD$ = 4.21 months). The four new variables were screened for skewness, kurtosis, and outliers. None of the variables exceeded acceptable skewness or kurtosis values: mind-mindedness for children age 30.1 months and older (Skewness = .136, Kurtosis = -.547), parental distress associated with children age 30.1 months and older (Skewness = -.287, Kurtosis = .085), mind-mindedness associated with children age 30 months and younger (Skewness = .285, kurtosis = -.194), and parental distress associated with children age 30 months and younger (Skewness = .485, Kurtosis = -.675). Two outliers were detected for the parental distress associated with children age 30.1 months and older. These values were replaced with a score one above or one below the next closest value.

The relation between parental distress and mind-mindedness was re-evaluated in the two above described age groups. For theoretical purposes, perceived stress was used as a control variable in subsequent analyses, because of its strong relation to parenting stress. Zero-order correlations were computed between demographic variables, perceived stress, and the four new parenting variables. For the older group, parental distress was significantly correlated with perceived stress, $r(29) = .69$, $p = .000$, and mind-mindedness was significantly negatively correlated with the number of children, $r(29) = -.38$, $p = .042$. For the younger group, parental distress was significantly correlated with perceived stress, $r(24) = .67$, $p = .000$. No other control variables were utilized, as they did not meet the criterion established for this study (i.e., a significant relation with both variables in the analysis).

Partial correlations were computed, as had been previously done before the group was split. For the children age 30.1 months and older, the positive relationship that had emerged between mind-mindedness of the younger child and parental distress (while controlling for perceived stress) in the original group ($N = 53$) was no longer evident, $r(25) = .03$, $p = .442$. However, for the children age 30 months and younger, the partial correlation that had emerged between mind-mindedness associated with the younger child and parental distress, after controlling for perceived stress, remained significant, $r(20) = .55$, $p = .004$. This suggests that the emergence of a positive relationship between mind-mindedness of the younger child and parental distress in the original group ($N = 53$) was being largely driven by the participants with younger children age 30 months and younger ($n = 24$).

A moderation analysis was conducted using hierarchical regression to evaluate the hypothesis that age of the younger child was moderating the relationship between parental distress and mind-mindedness associated with the younger child. Perceived stress was also included in the model as a covariate. The analysis was conducted with respect to both original group data ($N = 53$) and split data ($n = 29$, $n = 24$). Age of the younger child and parental distress associated with the younger child were centered and then an age of the younger child-by-parental distress interaction term was computed. In Step 1, perceived stress and the number of children (when relevant) were entered into the model as covariates. In Step 2 main effects for the age of the younger child and parental distress were entered. In Step 3, the interaction term of age of the younger child-by-parental distress was entered. This same process was repeated with respect to split data based on the age of the younger child. Results are displayed in Table 8 with respect to whole group data ($N = 53$), younger children 30.1 months and older ($n = 29$), and younger children 30 months and younger ($n = 24$). This table displays the change in $R^2$, unstandardized

regression coefficients (*B*), standard errors associated with *B*, and the standardized regression coefficients ($\beta$) for each data group

Table 8
*Summary of results of hierarchical regression analyses evaluating the moderation effect of age of the younger child on the relation between parental distress and mind-mindedness associated with the younger child*

| Variable | $\Delta R^2$ | *B* | *SE*(*B*) | $\beta$ |
|---|---|---|---|---|
| Whole group (*N* = 53) | | | | |
| Step 1 | 0.03 | | | |
| Perceived stress | | -0.01 | 0.01 | -0.18 |
| Step 2 | 0.09 | | | |
| Perceived Stress | | -0.02 | 0.01 | -0.46* |
| Age younger child | | 0.00 | 0.00 | 0.03 |
| Parental distress | | 0.01 | 0.01 | 0.41 |
| Step 3 | 0.00 | | | |
| Perceived stress | | -0.02 | 0.01 | -0.46* |
| Age younger child | | 0.00 | 0.00 | 0.03 |
| Parental distress | | 0.01 | 0.01 | 0.42* |
| Age younger x parental distress | | 0.00 | 0.00 | 0.00 |
| | | | | |
| Younger child >= 30.1 months | | | | |
| Step 1 | 0.15 | | | |
| Perceived stress | | 0.00 | 0.01 | -0.03 |
| Step 2 | 0.00 | | | |
| Perceived stress | | 0.00 | .013 | -0.06 |
| Age of younger child | | .001 | 0.01 | 0.05 |
| Parental distress | | .001 | 0.01 | 0.04 |
| Step 3 | 0.01 | | | |
| Perceived stress | | 0.00 | 0.01 | -0.05 |
| Age younger child | | 0.00 | 0.01 | 0.05 |
| Parental distress | | 0.00 | 0.01 | 0.03 |
| Age younger x parental distress | | 0.00 | 0.00 | -0.09 |

| | | | | |
|---|---|---|---|---|
| Younger child <= 30 months | | | | |
| Step 1 | | | | |
| Perceived stress | 0.08 | -0.01 | 0.01 | -0.28 |
| Step 2 | | | | |
| Perceived stress | 0.25 | -0.03 | 0.01 | -0.74** |
| Age of younger child | | 0.01 | 0.01 | 0.09 |
| Parental distress | | 0.02 | 0.01 | 0.67* |
| Step 3 | | | | |
| Perceived stress | 0.09 | -0.03 | 0.01 | -0.77** |
| Age of younger child | | 0.004 | 0.01 | 0.06 |
| Parental distress | | 0.01 | 0.01 | 0.58* |
| Age younger x parental distress | | 0.002 | 0.001 | 0.32† |

Note: * $p < .05$, ** $p < .01$, † $p = .105$

With respect to the whole group data ($N = 53$), perceived stress and parental distress associated with the younger child were significant predictors of mind-mindedness associated with the younger child in both step 2 and 3. The interaction term was not significant in this model ($p = .993$), suggesting that age was not moderating the relation between parental distress and mind-mindedness associated with the younger child.

For children 30.1 months and older, no significant predictors were identified, and the interaction term was not significant in this model ($p = .646$), suggesting again that age was not moderating the relationship between parental distress and mind-mindedness associated with the younger child. For children 30 months and younger, perceived stress and parental distress were significant predictors in both Step 2 and Step 3. The interaction term was approaching significance in this model ($p = .105$).

**Parenting style and mind-mindedness.** The third aim of the present study was to analyze the relation between parenting style and mind-mindedness in order to investigate convergent and discriminant validity with respect to mind-mindedness. I predicted that mind-

mindedness would be positively associated with authoritative parenting and negatively associated with authoritarian parenting. Additionally, I hypothesized that the association between authoritative parenting and mind-mindedness would be significantly stronger than the association between authoritarian parenting and mind-mindedness. A Pearson product-moment correlation coefficient was computed to analyze the relationship between authoritative parenting and mind-mindedness (both younger and older separately) as well as between authoritarian parenting and mind-mindedness (both younger and older separately). One-tailed tests were conducted because the direction of the relationship was pre-specified. No specific predictions had been made regarding the correlations between permissive parenting and mind-mindedness. However, for the sake of further elucidating the construct of mind-mindedness, permissive parenting was included in this analysis; a two-tailed test was utilized for permissive parenting.

***Mind-mindedness of the younger child.*** There was a significant positive relation between mind-mindedness associated with the younger child and authoritative parenting, $r(53) = .26$, $p = .033$, suggesting that parents who thought in a more mind-minded manner about their younger children were also more likely to utilize authoritative parenting strategies. There was a significant, negative, relation between mind-mindedness associated with the younger child and authoritarian parenting, $r(53) = -.26$, $p = .029$, suggesting that parents who thought in a more mind-minded manner about their younger children were less likely to utilize authoritarian parenting strategies. Both authoritarian parenting and mind-mindedness were significantly related to number of children in the family; the relationship was no longer significant once number of children was controlled for, $r(50) = -.16$, $p = .122$. When this correlation was compared to the association between mind-mindedness and authoritative parenting there was a significant

difference between the correlations, $Z = 1.85$, $p = .03$. Mind-mindedness associated with the younger child was not found to be related to permissive parenting, $r(53) = .04$, $p = .75$.

***Mind-mindedness of the older child.*** Parents who thought about their older children in a more mind-minded manner were less likely to utilize authoritarian parenting strategies with their older children, $r(53) = -.29$, $p = .02$. The relation between mind-mindedness associated with the older child and authoritative parenting was not significant, $r(53) = .17$, $p = .11$. When these two correlations were compared, there was a significant difference between the correlations, $Z = 1.95$, $p = .03$. There was no significant relationship between mind-mindedness associated with the older child and permissive parenting. $r(53) = -.04$, $p = .75$.

***Parenting style and parenting stress***. Further analyses were conducted to evaluate parenting stress and parenting style so as to provide a context within which to evaluate the relation between mind-mindedness and parenting stress. A Pearson product-moment correlation coefficient was computed to analyze the relation between authoritative parenting and parenting stress (both younger and older separately), authoritarian parenting and parenting stress (both younger and older separately), and permissive parenting and parenting stress (both younger and older separately). Two-tailed tests were conducted because this analysis was not included in the original hypotheses.

***Parenting stress associated with the younger child.*** There was a significant, negative relation between the utilization of authoritative parenting behaviors with younger children and parenting stress. Parents who utilized authoritative parenting behaviours were less likely to experience parent-child dysfunctional interactions, difficult child behaviours, and total parenting stress. On the contrary, parents who utilized authoritarian parenting behaviours were more likely to experience increased parent-child dysfunctional interactions, difficult child behaviours, and

total parenting stress. Parents who utilized permissive parenting strategies were more likely to experience increased parental distress, difficult child behaviours, and total parenting stress. These results are displayed in Table 9 below. When the relationship between authoritative parenting and total parenting stress was compared to the relationship between authoritarian parenting and total parenting stress, there was a significant difference between the correlations, $Z$ = -4.23, $p$ = .000.

Table 9
*Correlation coefficients (two-tailed) between parenting stress and parenting style for the younger child*

| | Parenting style-younger | | |
|---|---|---|---|
| Parenting stress subtype | Authoritative | Authoritarian | Permissive |
| Parental Distress | -0.22 | 0.26 | 0.33* |
| P-CDI | -0.42** | 0.49** | 0.26 |
| Difficult Child | -0.28* | 0.39** | 0.39** |
| Total Stress | -0.39** | 0.46** | 0.43** |

Note: P-CDI = Parent-Child Dysfunctional Interaction.
* $p < .05$, ** $p < .01$. $N = 53$.

Subsequently, the above relations were analyzed while controlling for demographic variables that were related to both variables in the analyses. Authoritative parenting was not related to any demographic variables. Authoritarian parenting and parent-child dysfunctional interactions had significant relations with age of the younger child, perceived stress, and education level; after controlling for these variables parents who were more likely to utilize authoritarian parenting strategies were still more likely to experience increased parent-child dysfunctional interactions, $r(48) = .35$, $p = .014$. Authoritarian parenting and difficult child behaviours were significantly related to age of the younger child; after controlling for age of the younger child, the relation between authoritarian parenting and difficult child behaviours was approaching significance, $r(50) = .25$, $p = .071$. Authoritarian parenting and total stress were significantly related to age of the younger child and perceived stress; after controlling for these

two demographic variables, the significant relation with total stress was not retained, $r(49) = .18$, $p = .196$

Parental distress and permissive parenting were not related to any demographic variables; therefore, these relations remained significant. Permissive parenting, total stress, and difficult child behaviours were all significantly related to age of the younger child; when age was controlled for, the relation between permissive parenting and total stress remained significant, $r(50) = .35$, $p = .011$. The relationship between permissive parenting and difficult child behaviours was no longer significant, $r(50) = .24$, $p = .085$.

***Parenting stress associated with the older child.*** Parents who utilized more authoritative parenting strategies experienced lower levels of parental distress, parent-child dysfunctional interactions, difficult child behaviours, and total parenting stress. Conversely, parents who utilized more authoritarian parenting strategies experienced higher levels of all parenting stress subtypes: parental distress, parent-child dysfunctional interactions, difficult child behaviours, and total parenting stress. Parents who utilized more permissive parenting strategies experienced higher levels of all parenting stress subtypes as well. When these relationships (i.e., authoritative-total parenting stress; authoritarian-total parenting stress) were compared there was a significant difference between the correlations, $Z(51) = -5.28$, $p = .000$. Parenting stress was also analyzed with respect to permissive parenting; these results are displayed in Table 10.

Table 10
*Correlation coefficients (two-tailed) between parenting stress and parenting style for the older child*

| | Parenting style- older | | |
|---|---|---|---|
| Parenting stress | Authoritative | Authoritarian | Permissive |
| Parental Distress | -0.27* | 0.39** | 0.47*** |
| P-CDI | -0.53*** | 0.63*** | 0.46*** |
| Difficult Child | -0.27* | 0.51*** | 0.44** |
| Total Stress | -0.43** | 0.56*** | 0.55*** |

Note: P-CDI = Parent-Child Dysfunctional Interactions. $N = 53$. * $p < .05$, ** $p < .01$, *** $p < .001$.

The above relations were examined while controlling for demographic variables that were significantly related to both variables in the analysis. Authoritative parenting was not related to any demographic variables and thus all relations were retained. With respect to authoritarian parenting, there were no demographic variables that related to both authoritarian parenting and parental distress. However, authoritarian parenting and three parenting stress subscales (i.e., parent-child dysfunctional interactions, difficult child behaviours, total stress) all had significant relations to caregiver age and perceived stress. Therefore, these were controlled for in subsequent analyses. After controlling for caregiver age and perceived stress, all relations were retained: $r(49) = .50$, $p = .000$ (parent-child dysfunctional interactions); $r(49) = .31$, $p = .026$ (difficult child); $r(49) = .32$, $p = .023$ (total stress). Therefore, when describing their older child, parents were significantly more likely to report greater parent-child dysfunctional interactions, difficult child behaviours, and total parenting stress when they also reported utilizing authoritarian parenting strategies; even after controlling for caregiver age and perceived stress.

With respect to permissive parenting, no demographic variables were related to both permissive parenting and parental distress. However, permissive parenting and the other three parenting stress subscales all had significant relations with caregiver age; therefor this was controlled for in subsequent analyses. After controlling for caregiver age, all relations between

permissive parenting and parenting stress were retained: $r(50) = .39$, $p = .004$ (parent-child dysfunctional interactions); $r(50) = .36$, $p = .009$ (difficult child); $r(50) = .50$, $p = .000$ (total stress).

## Discussion

The aim of the present study was to evaluate the consistency of, and the relationship between, mind-mindedness, parenting stress, and parenting style. First, this study aimed to evaluate the within-parent consistency of these constructs through an examination of the hypothesis that a parent may think about, and act differently toward, two children within the same family. Essentially, a parent may experience a unique relationship with each of his or her children that coexists with its own unique set of parental cognitions, parenting stress experiences, and parental behaviours. For the purposes of this study, consistency was evaluated in two ways: (1) all younger child measures were evaluated with respect to covariation with older child measures, such that mind-mindedness associated with the younger child was evaluated to determine its tendency to relate to mind-mindedness associated with the older child, and, (2) Average levels of mind-mindedness, parenting stress, and parenting behaviours were examined between two children in the same family, such that the average level of mind-mindedness associated with the younger child was evaluated with respect to the average level of mind-mindedness associated with the older child.

Second, this study aimed to evaluate the relationship between mind-mindedness, parenting stress, and parenting style to examine the hypothesis that these parenting constructs would covary in a meaningful way, as suggested by prior studies. I sought to affirm the previously established inverse relationship between mind-mindedness and parenting stress (Demers et al., 2010; McMahon & Meins, 2012; Walker et al., 2012) while also evaluating the hypothesis that the relationship between mind-mindedness and authoritative parenting would be stronger than the relationship between mind-mindedness and authoritarian parenting. Lastly, I sought to evaluate the relationship between parenting stress and parenting style.

**Mind-mindedness, Parenting Stress, and Parenting Style as Consistent Constructs**

Previous research has suggested that mind-mindedness may be related to the level of intimacy within a relationship, presenting as a relational construct rather than as a stable cognitive-behavioural trait of the parent (Hill & McMahon, 2015; Illingworth et al., 2016; Meins et al., 2014). This finding brings to bear the presumption that mind-mindedness may depend on the unique parent-child relationship, and by default, suggests a lack of consistency between two children in the same family. Additionally, research has demonstrated that related parenting constructs (i.e., parental negativity, parental positivity, parenting stress) lack consistency between two children in the same family (Deater-Deckard, 1996; Deater-Deckard, 2000; Deater-Deckard et al., 2003; Deater-Deckard et al., 2005; Dunn et al., 1998; Meirsschaut et al., 2011); this suggests both that within-parent consistency is a viable line of inquiry but also that each child develops within a unique parent-child relationship that may differ from his or her sibling.

In an effort to further elucidate mind-mindedness as a construct, the present study explored the consistency of mind-mindedness between two children in the same family to evaluate the hypothesis that a parent may conceptualize the mental life of his or her two children in a dissimilar manner. This hypothesis was confirmed. First, the present study did not find support for consistency of mind-mindedness between two children in the same family. These findings suggest that a parent who thinks more mind-mindedly about one child may not necessarily think mind-mindedly about his or her other child, thus lending support to the hypothesis that mind-mindedness may lack consistency between two children in the same family. This finding also suggests that other factors must be contributing to a parent's formulation of his or her child's mental life; these factors may be specific to the child, the parent's perception of the child, or the parent-child interaction.

The second evaluation of consistency examined whether a parent was more likely to describe his or her older or younger child with mind-minded descriptors; no significant difference was found. This suggests that parents are equally likely to describe their children using mental descriptors but that these descriptions do not correlate with each other. With respect to the first finding, the lack of support for consistency suggests that mind-mindedness is more likely the product of a relationship than a constant trait-like quality.

With respect to consistency, Meins and colleagues (2014) reported a positive correlation between mind-minded descriptions of close friends and romantic partners, as well as between a child and a current romantic partner. On the basis of these findings, it may be expected that there would also be a positive relationship between mind-mindedness associated with the younger child and mind-mindedness associated with the older child. However, the failure to find such a relationship may be explained by the fact that relationships with close friends and romantic partners differ greatly from the parent-child relationship. The former do not involve the same level of care taking and management of behaviour and therefore may be less frustrating and stressful overall. Additionally, it is likely easier, and more appropriate, to describe an adult or older child in a mind-minded manner than it is to describe a younger child, who displays less overt signs of mental activity, in this same manner. The children in Meins and colleagues (2014) study were age five to eight, older than many of the children in the present study. The older child age may have contributed to the consistency of mind-mindedness across multiple people in that study.

Only one prior study has examined the consistency of mind-mindedness across two children in the same family (Illingworth et al., 2016). Similar to the present study, Illingworth and colleagues (2016) found a lack of support for consistency of mind-mindedness between two

children in the same family at the first testing session. Meins and colleagues (2014) suggested that concordance between the mentalistic descriptions of two people indicated that mind-mindedness is likely a trait-like quality. Therefore, the lack of concordance, as defined by the lack of a significant correlation between the mind-mindedness of the older and younger child, in both studies (the present study and Illingworth et al., 2016) may indicate, conversely, that mind-mindedness is actually a relational construct.

Illingworth and colleagues (2016) reported a lack of support for consistency between older and younger children at the first testing session. However, nine months later, at the second testing session, the authors reported support for consistency between the mind-minded descriptors of the older and younger child. Whereas the results from the first testing session are in-line with the results from this study, the results from the second testing session are not. However, the present study did not conduct a second testing session and thus it is not known whether the lack of consistency reported in this study would change, as the children grew older. With respect to child age, it is possible that the change in consistency from the first testing session to the second testing session was influenced by the children aging nine months between testing sessions. Of significant note is the fact that the children in the present study were on average 12 (older) to 14 (younger) months younger than those in the study by Illingworth and colleagues (2016). Thus by the time of the second testing session the children in the aforementioned study would have been nearly two years older than those in this present study. Therefore, it is possible that consistency improves, as children grow older. The appropriateness of mind-mindedness with respect to very young children will be discussed below.

In addition to the consistency reported between siblings at Time 2, Illingworth and colleagues (2016) also reported consistency between partners/friends and younger siblings but

not between partners/friends and older siblings. Given the discrepancy in findings between Time 1 and Time 2, and the smaller sample size ($N$ = 32 Time 1, $N$ = 30 Time 2), the authors suggest that the conservative interpretation of these findings is that there is a lack of support for consistency of mind-mindedness between children in the same family. Therefore, this suggests that mind-mindedness is more likely a relational construct than a cognitive-behavioural trait (Illingworth et al., 2016). This is in-line with the findings from the present study.

Despite a reported lack of consistency, mind-mindedness has demonstrated both predictive power and temporal stability. For example, mind-mindedness at six months of age has been found to explain a significant amount of variance in mind-mindedness at 48 months (Arnott & Meins, 2008; Meins et al., 2013). Additionally, temporal stability has been reported for both the interactional and representational measure of mind-mindedness over a period of nine months (Illingworth et al., 2016). However, predictive power and temporal stability (though potentially related) are undoubtedly different than consistency because predictive power and temporal stability look at mind-mindedness with respect to only one child. Therefore, it is possible for mind-mindedness to have predictive power and still not display consistency between two children in the same family. For example, in a longitudinal study, mind-mindedness associated with a younger child may be predictive from age one to age five, and the mind-mindedness associated with an older child may be predictive for that child from age three to age seven; however, the level of mind-mindedness may not be consistent across the two children in the family.

Given the above findings, the use of a within-family framework to examine mind-mindedness has provided new information regarding the interpretation of the construct. This aligns with the suggestion that a within-family design is a valid and important line of inquiry that

can address research questions that between-family designs cannot (Deater-Deckard, Smith, Ivy, & Petril, 2005; Meirsschaut, Warreyn, & Roeyers, 2011; O'Connor, 2002).

Subsequently, parenting stress and parenting style were evaluated for consistency. The present study found consistency between younger and older children for nearly all parenting stress (i.e., parental distress, parent-child dysfunctional interactions, total stress) and parenting style (i.e., authoritative, authoritarian, permissive) variables. For example, when parents experienced more parenting stress with their older child, they also experienced more parenting stress with their younger child. Similarly, when parents utilized more authoritative parenting strategies with their older child, they also utilized more of these strategies with their younger child. This suggests that the experience of parenting stress and the utilization of parenting strategies may be more consistent for a parent and possibly more strongly influenced by parental (versus relational) factors than mind-mindedness (see discussion below regarding authoritarian parenting and demographic variables).

Secondly, the average scores for parenting stress and parenting style were evaluated. Significant differences between the average scores for the younger and older children were reported for all parenting stress subtypes and two of the three parenting style variables (i.e., authoritarian and authoritative); all scores being higher for the older child except parental distress. This suggests that although parenting stress and parenting style utilization covary between children in a family, a parent may still experience more parenting stress or utilize more parenting strategies with one child than with another. In the present study, this higher experience of stress (or utilization of parenting strategies) was predominantly with the older child, suggesting that the age of the child is likely impacting these relationships.

**Mind-Mindedness and Parenting Stress**

The second aim of this study was to corroborate previously established findings suggesting an inverse relationship between parenting stress and mind-mindedness (Demers et al., 2010; McMahon & Meins, 2012; Walker et al., 2012[2]), and to evaluate the hypothesis that the mind-mindedness of both children would be negatively related to parenting stress. The present study evaluated mind-mindedness with respect to all parenting stress experiences: parental distress, parent-child dysfunctional interactions, difficult child behaviours, and total parenting stress. This hypothesis was only partially supported; mind-mindedness of the older child was negatively related to two types of parenting stress (i.e., parent-child dysfunctional interactions, total stress).

**Mind-mindedness and parental distress.** Contrary to my hypothesis, there was no significant negative, relation between mind-mindedness associated with the younger child and parenting stress. Additionally, after controlling for perceived stress, a *positive* relation emerged between mind-mindedness associated with the younger child and parental distress. The emergence of this partial correlation suggests that perceived stress is acting as a suppressor variable. Upon further examination, it was determined that there is likely a suppressor effect (perceived stress) in the relation between parental distress and mind-mindedness, suggesting that when variance that is shared between perceived stress and parenting stress is removed, the relation becomes significant. However, this suppressor effect remains unclear because of its unique relation to mind-mindedness associated with the younger child only. Therefore, future study is necessary to explore the robustness and interpretation of this finding.

There are two potential interpretations for this suppressor effect. First, it is possible that parental distress is uniquely related to mind-mindedness. The Parental Distress scale specifically

[2] Walker and colleagues (2012) found this relationship only in a clinical sample, not a community sample

requires that the parent understand the impact parenting has had on him or her including feelings of depression and isolation (internal mental states directly about the parent him- or herself); this may require a level of perception that is difficult to achieve when a parent is overwhelmed by general life stress. Additionally, this requires a higher degree of mentalization than reflection on the relationship with the child (Parent-Child Dysfunctional Interaction) or the child's behaviour (Difficult Child). For example, the Parental Distress scale requires that the parent first recognize these feelings of isolation or depression (e.g., "I feel trapped") and secondly appraise his or her life situation to determine that these feelings may be due to the status of being a parent (e.g., "by my responsibilities as a parent"). These same processes are not necessary for the parent to recognize that his or her child does not meet his or her expectations (Parent-Child Dysfunctional Interaction scale; e.g., "My child is not able to do as much as I expected") or to recognize and describe the child's behaviour (Difficult Child scale; e.g., "my child seems to cry or fuss more often than most children").

Both recognizing feelings of parental distress (as described above) and recognizing the internal states and feeling of a child require the ability to mentalize effectively, in contrast to recognizing a failure to meet expectations or the existence of child behaviour problems. It is possible that there is a unique relation between parenting stress and perceived stress which when removed, allows a parent to better reflect on his or her own internal feelings as well as those of her or her child. This suggestion would be in line with the findings of Hill and McMahon (2015) who found that mothers who were more mind-mindeded with their child descriptions also displayed more engagement and interest in the mental states of themselves and others. Therefore, there may be an increased relationship between mind-mindedness associated with the younger child and parental distress because they both require a level of perception about internal states

and emotions that emerges only when general life stress is removed. Further research is needed to draw a conclusion about this possibility.

Despite the plausibility of the above explanation, it does not account entirely for why parental distress is only related to the mind-mindedness associated with the younger child and not also related to mind-mindedness associated with the older child. Therefore, a second possible explanation is that mind-mindedness in very young children, as measured by the representational measure, indicates a misattunement on the part of the parent. Given that (1) the parental distress scale has been reported to be related to parental self-reported psychological symptoms and emotional health (Reitman et al., 2002), and (2) the possibility that higher mind-mindedness for children under 30 months may actually indicate misattunement on the part of the parent; it is conceivable then, that some parents who describe their very young children in a highly mind-minded manner may actually be misinterpreting their children. For these theoretical reasons, data were split into two groups: younger children age 30.1 months and older and younger children age 30 months and younger. I hypothesized that the relation between mind-mindedness and parental distress would be stronger for the group with the children age 30 months and younger because it may be less appropriate to be highly mind-minded with this age group and thus parents with higher levels of parental distress may also be more likely to misinterpret the actions of their children. While controlling for perceived stress, the results indicated that there was a significant relation between mind-mindedness and parental distress in the children aged 30 months and under but there was no support for a relation in the children over 30 months of age. This suggests that the original relation in the whole group data ($N = 53$) was being driven by the relation in the younger group.

This conceivably offers an alternative explanation for the relation between mind-mindedness associated with the younger child and parental distress: that higher mind-mindedness in this age group is actually a sign of misattunement on the part of the parent. The parent is attributing mental descriptors to a child that is not yet showing overt signs of mental activity (i.e., language, symbolic play) because he or she sees the child as an extension of him or herself, thus projecting his or her own thoughts and feelings onto the child, and assuming the child has these same mental processes (Bernier & Dozier, 2003). Ainsworth (1969) described the interfering mother as one who "lacks respect for her baby as a separate person… or merely follows her own whims without regard for his moods, wishes or activity-in-progress" (p. 19). The interfering mother does not see her child as a separate or autonomous person, but rather as an extension of herself (Bernier & Dozier, 2003). Meins (1999) also described a lack of mind-mindedness as a parent's inability to see the child as his or her own person. Therefore, it is possible that when using the representational measure of mind-mindedness, the relationship between age and mind-mindedness is not linear and that early on, higher mind-mindedness is actually a sign of lack of appropriate appraisal by the parent. This could explain the relationship between parental distress and mind-mindedness in the younger child. Perhaps a parent who may be dealing with more psychological and emotional difficulties may be less attuned to his or her young child and thus misattribute mental states to the child. This may be true only for the representational measure, as the interactive measure demonstrates both predictive validity and temporal stability. Emerging studies suggest that these two measures may be looking at different constructs as evidenced by a lack of consistency across the measures (Illingworth et al., 2016). It may be the case that higher mind-mindedness as determined by the representational measure is not appropriate with very young children, whereas higher mind-mindedness on the interactive measure may be appropriate.

A moderation analysis was conducted to determine if age might be moderating the relation between parental distress and mind-mindedness associated with the younger child. There was not a significant interaction in the whole group data ($N = 53$). The moderation analysis was re-analyzed in the split data (younger children age 30.1 months and older; younger children age 30 months and younger); the interaction effect was approaching significance ($p = .11$) for the younger group. However, given the small sample size ($n = 24$), there was likely not enough power to detect an interaction effect. Therefore, it is possible that moderation is occurring and may be detected in a larger sample size than was available for this study. Future research is needed to further examine the relation between mind-mindedness and parental distress in order to clarify whether either of these interpretations may be correct or whether an alternative explanation exists.

Despite the unexpected positive relationship between mind-mindedness associated with the younger child and parental distress, the finding of a significant inverse relationship between mind-mindedness associated with the older child and parenting stress supports the three previous studies on this topic (Demers et al., 2010; McMahon & Meins, 2012; Walker et al., 2012). However, to my knowledge, no prior studies have examined mind-mindedness and parenting stress in two children in the same family. Therefore the inconsistent findings regarding the relationship between parenting stress and mind-mindedness in older and younger children is a new finding.

To address this discrepancy, I would postulate two potential explanations. First, the age of the child may be impacting this inverse relationship between mind-mindedness and parenting stress. Given that it may be less appropriate to describe a young child in a highly mind-minded manner, lower mind-mindedness may actually be the desired outcome in this age group and thus

it would not negatively correlated with parenting stress. Alternately, in older children, higher mind-mindedness is the desired outcome and thus it negatively correlates with parenting stress.

Secondly, it is possible that mind-mindedness is only negatively related to parenting stress when parenting stress is higher. Further analyses would be required to explore this. However, in the present study, when analyzing the relation between mind-mindedness associated with the older child and parenting stress, the two subscales that were related to mind-mindedness (parent-child dysfunctional interactions, total parenting stress) were also significantly higher in the older child. Parenting stress may be higher for an older child because the older child displays more behaviours that are frustrating to the parent. Higher scores for the older child were found on the scales involving expectations about the child and the child's behaviour, as well as the Total Stress scale. Perhaps as children get older, parents are more likely to be frustrated at the child not meeting expectations as well as at the child's behaviour because the parent believes that the child should have better control over this behaviour. In contrast, a parent may be more lenient or forgiving of a younger child and thus less frustrated by behaviour. It is possible then, that the inverse relationship between mind-mindedness and parenting stress may only be evident for the older child because there is more parenting stress associated with the older child. It may be possible that up to a certain point parenting stress does not impact mind-mindedness, but once parenting stress reaches a certain level, it has a negative impact on mind-mindedness. These findings fit with those of a study by Walker and colleagues (2012) in which an inverse relationship between mind-mindedness and parenting stress was not detected in a community sample, but was detected in a clinical sample; the sample which had higher parenting stress. Given that this is the first study to investigate mind-mindedness and parenting stress in relation to two children in the same family, it cannot be compared to other between-family findings in this

regard. However, the findings of the present study seem to fit with the findings of Walker and colleagues (2012) in that the inverse relationship between parenting stress and mind-mindedness was only detected in the group with the higher parenting stress levels.

**Parenting Style**

The third aim of this study was to examine the relation between mind-mindedness and parenting style in order to establish construct validity and situate mind-mindedness amongst other parental constructs. I hypothesized that authoritative parenting would be more closely related to mind-mindedness than authoritarian parenting. This would establish both convergent and discriminant validity for mind-mindedness because authoritative parenting relies more on understanding the child's point of view (i.e., mental activity) and using discussion to resolve difficulties whereas authoritarian parenting relies more on strict compliance with less consideration for the child's internal mental states (Baumrind, 1996; Vinden, 2001). Original analyses detected a positive relation between mind-mindedness associated with the younger child and authoritative parenting as well as a negative relationship between mind-mindedness and authoritarian parenting. However, after controlling for number of children in the family, the negative relation between mind-mindedness and authoritarian parenting was not retained. Therefore, it is likely that the use of authoritarian parenting is more likely due to an increasing number of children in the family than low mind-mindedness in the parent.

With respect to the older child, parents who thought about their children in a more mentalistic manner were less likely to utilize authoritarian parenting strategies. The relation between mind-mindedness and authoritative parenting was not significant. Taken together, these findings provide partial support for a positive relation between mind-mindedness and authoritative parenting in the younger children, as well as a negative relation between mind-

mindedness and authoritarian parenting in the older children. This suggests that mind-mindedness related to parenting style in a different way with respect to the older and younger child. For younger children, when a parent is more mind-mindedness, it is likely that the parent is also more likely to interact with the child in a manner that demonstrates the parents understanding of the child's thought, feelings, and intentions. In contrast, for an older child, when a parent is more mind-minded, the parents is less likely to interact with the child in a manner that utilizes more controlling parenting behaviors. It should be noted that authoritarian parenting was significantly correlated with nearly all demographic variables (age of younger child, caregiver education, caregiver age, number of children, perceived stress). Therefore, it appears to be more highly related to parental life factors than to parental cognitions. Additionally, it appears to be more highly impacted by the parent's current life experience than any other parenting variable utilized in this study. The results of the demographic analysis suggest that parents who utilize authoritarian parenting strategies tend to be younger, have less education, have more children, have younger children who were older, and to experience more perceived life stress. In contrast, mind-mindedness was only related to the number of children in the family. This may suggest that whereas mind-mindedness is likely a relational construct, the utilization of authoritarian parenting strategies may be more highly impacted by outside variables such as current life experiences and stresses.

The above findings with respect to parenting style are partially in-line with the literature, which suggests that an authoritative parent is more likely to utilize discussion regarding the child's thoughts and feelings (Vinden, 2001). If a parent is utilizing discussion with the child regarding his or her own thoughts and feelings, that parent is probably also more likely to

describe and think about his or her child in a more mentalistic manner; as a person who has thoughts, feelings, and intentions of his or her own.

Examining parenting style and parenting stress revealed significant trends suggesting that, with respect to both children, parents who utilized authoritative parenting experienced lower levels of parenting stress whereas parents who utilized authoritarian and permissive parenting strategies experienced higher levels of parenting stress. This confirms that parents who are utilizing what could be thought of as less than ideal parenting strategies are also experiencing higher levels of parenting stress. I would hypothesize that this is likely a bidirectional relationship between parenting strategies and parenting stress, both influencing the other.

Putting the findings regarding mind-mindedness, parenting stress, and parenting style together, these results suggests that (at least for the younger child), parents who thought about their child in a more mind-minded manner tended to utilize authoritative parenting strategies; the utilization of authoritative parenting tended to be related to lower levels of parenting stress. However, there was no direct relation between mind-mindedness and lower parenting stress, with respect to the younger child. It should also be noted that these findings are in contrast to the above-outlined hypothesis that higher mind-mindedness in the younger child reflects misattunement on the part of the parent. Therefore, future research is needed regarding these relations to determine if higher mind-mindedness, as measured by the representational measure, truly represents misattunement or not. Additional relations could also be examined to determine if the relation between authoritative parenting and mind-mindedness is similar in children over 30 months and younger as compared to older children.

**Demographics**

Due to previous mixed findings with respect to both maternal age (Walker et al., 2012) and maternal education level (Rosenblum et al., 2008), this study sought to analyze mind-mindedness with respect to a number of demographic variables: caregiver age, caregiver education level, number of children, and age of children. One significant demographic relation emerged; as the number of children in the family increased, the mind-mindedness associated with both children decreased. Mind-mindedness was not related to any other demographic or perceived stress variables. On the contrary, significant demographic relations were found for both parenting stress and parenting style and these were controlled for in subsequent analyses. Of particular interest was the relation between authoritarian parenting style and nearly all reported demographic variables. This suggests that authoritarian parenting may be more impacted by the parent's life situation than other parenting constructs.

**Limitations and Suggestions for Future Research**

This study generated several important findings regarding mind-mindedness, parenting stress, and parenting style. The present study analyzed the consistency of parental constructs in families with multiple children, as well as evaluated the relationship between these three constructs. Despite this, it should be noted that this study also has several limitations.

**Mind-mindedness measure.** It is possible that the lack of a relation between mind-mindedness associated with the younger child and other relevant constructs is due to the measure itself. Whereas the infant measure is recommended for infants up to 12 months and involves direct parent-child interaction, the representational measure is recommended for "children" preschool age and above (Meins & Fernyhough, 2015). Therefore, there is a potential gap from 12 months to 24 or 36 months where the representational measure may not be as appropriate. It may be more difficult to describe a child who is not yet verbal in a mind-minded manner because

the parent may be unsure of the child's thoughts, emotions, intentions, or feelings. The parent may be required to rely on inferences about mental states, which is less of a requirement when the child displays overt signs of mental behaviour. The average age of the younger group in this study was 34 months, with a range from 16 to 64 months. Therefore, the younger children in this study may fall into the age period where the representational measure is not sensitive enough; parents may have a more difficult time describing a very young child in a mind-minded manner. Secondly, as described above, it is possible that describing a child under the age of 30 months in a mind-minded manner may actually indicate a misinterpretation on the part of the parent because it requires he or she to attribute mental states to a child who is not yet showing overt signs of extensive mental activity.

**Sample size.** The smaller sample size in this study ($N = 53$) may have limited the findings. A larger sample size would aide in the detection of additional effects, especially with respect to the potential moderation of child age in the relationship between mind-mindedness associated with the younger child and parental distress. There were also numerous relationships between mind-mindedness and parenting style that were approaching significance; a larger sample size may aide in the detection of these effects.

**Demographics**. The generalizability of the findings of the present study are limited due to the ethnicity of the participants, nearly 96% were Caucasian and thus the findings specifically related to parenting style may not generalize to other populations. Additionally, the parents in this sample, were highly educated; 77 percent of participants possessed an undergraduate degree or higher. Thus, these findings may not generalize as well to participants with lower education levels. Despite this, of note is that mind-mindedness was not related to education level whereas

various subscales of parenting style and parenting stress were. Therefore, mind-mindedness appears to be less impacted by education level than other parenting constructs.

**Child behaviour.** The conceptualization of this study originally included a child-behaviour measure, which was removed to decrease participant time commitment. It is possible that a child-behaviour measure, such as the Strengths and Difficulties Questionnaire (Goodman, 1999), would contribute to understanding why parenting constructs differ across two children in the same family. The addition of a child-behaviour measure in future studies would allow the researcher to further delineate the impact of child-characteristics on within-parent variability as it pertains to mind-mindedness, parenting stress, and parenting style.

**Future research.** The only other study that has examined consistency of mind-mindedness between two children in the same family also had a smaller sample size ($N = 32$ [Time 1], $N = 30$ [Time 2]). Therefore, future research with respect to the consistency of mind-mindedness would benefit from larger sample sizes that may allow the detection of additional effects, including moderation.

Future research could also address these same questions in a clinical population. To the best of my knowledge, there is only one study that has addressed mind-mindedness in a child clinical sample. Walker and colleagues (2012) examined mind-mindedness in a clinical and a community sample with children ages three to five. The authors reported significant differences between groups with respect to parenting stress, parental depression, and child behavioural and emotional difficulties; suggesting poorer parent and child functioning in all areas. Additionally, mind-mindedness in the clinical sample was significantly lower and parenting stress significantly higher than in the community sample. It is possible in a sample with higher parenting stress (i.e., a clinical sample), clearer relationships between mind-mindedness and parenting stress may

emerge. Additionally, the lack of consistency with respect to mind-mindedness may become even clearer as it is possible that parents may think even more differently about their two children when one of them has a mental health or developmental diagnosis.

One population which could be utilized to examine the above hypotheses are parents of children with Autism Spectrum Disorder (ASD). This is because children with ASD are adversely impacted in social relationships, communication, and emotional competence; they often have maladaptive behaviors as well (Meirsschaut et al., 2010). Essentially, they bring different characteristics to the parent-child relationship than their more typically developing siblings and peers. Secondly, although all parents experience parenting stress, those families with children with chronic conditions experience higher levels of parenting stress than families with typically developing children (Crnic & Neece, 2015). Additionally, of the high-risk clinical families, parents with children with ASD report the highest levels of parenting stress (Crnic & Neece, 2015; Dabrowska & Pisula, 2010). Therefore, given the established relationship between higher parenting stress and lower mind-mindedness in this (for the older children) and other studies (Demers et al., 2010; McMahon & Meins, 2012; Walker et al., 2012), families with children with ASD are well-suited to further examine the consistency of mind-mindedness and the relationship between mind-mindedness and parenting stress.

**Implications**

This study has four major implications that pertain both to the interpretation and clarification of mind-mindedness as a construct, and to clinical practice. First, since the inception of this study, there has been a burst of research regarding the consistency of mind-mindedness, solidifying it as an important area of research. The goal of this research area has been to establish whether mind-mindedness is a cognitive-behavioural trait within a person and therefore

consistent across time and subjects, or whether it is specific to each relationship and therefore a relational construct. Three major studies have evaluated consistency and found inconsistent results (Hill & McMahon, 2015; Illingworth et al., 2016; Meins et al., 2014). Together, these studies indicate that the examination of the consistency of mind-mindedness is a crucial area of research as these variable findings suggest a lack of support for consistency. The present study addresses the need for additional research by evaluating mind-mindedness between two children in the same family, the second study to do so. Additionally, the present study is the first study to evaluate the consistency of parenting stress and parenting style in the context of mind-mindedness. This study provides additional support for construct validity, thus further clarifying both mind-mindedness as a construct and solidifying its relationship to other, well researched, parenting constructs.

Second, this study is only the third study to utilize an online questionnaire to generate mind-minded descriptions, and only the second study to do so with parents (prior studies: Meins et al., 2014; Hill & McMahon, 2015). Therefore, this study demonstrates the feasibility of using this assessment method in the examination of mind-mindedness, as the results of the present study are in-line with the initial (Time 1 testing) findings of Illingworth and colleagues (2016) who utilized face-to-face interviews in a similar study.

Third, this study sheds light on a potentially complex relationship between representational mind-mindedness in very young children and parental distress. Very few studies have utilized the representational measure of mind-mindedness with very young children. In their recent study, McMahon and colleagues (2016) advocated for additional research to determine the applicability of the representational measure in this population. Contrary to Farrow and Blisset (2014) who found a positive relationship between mind-minded descriptors and sensitivity in

both free play and feeding, the findings of the present study are unclear as to whether higher mind-mindedness in young children represents: 1) increased parental perception, 2) parental misattunement, 3) a suppressor effect from perceived stress, or 4) a finding that cannot be replicated. The present study is the only study that has examined representational mind-mindedness in very young children in relation to parenting stress. Therefore, this finding is new, and provides insight into the potentially non-linear relationship between representational mind-mindedness and age of the child. One possible implication for this is that parents who describe their very young children in a mind-minded manner may actually be experiencing misattunement with their child due to their own parental distress. This offers insight into what the parent may be struggling with, possibly the inability to see their child as separate from themselves. Further distilling the relationship between early representational mind-mindedness and parental distress may inform intervention strategies for parents who are experiencing high levels of parental distress.

Fourth, mind-mindedness appears to be amenable to intervention (Colonnesi et al., 2013; Demers et al., 2010). The present study suggests a tentative relationship between mind-mindedness, parenting stress, and parenting style. This relationship is provisional and does not imply causation, but it is possible that intervening with parents with respect to mind-mindedness may allow them to conceptualize their child in a different manner; a manner that allows them to see the thought and intentions in their child's behaviors. This may lead to less frustration regarding the child's behaviors, which may potentially impact parenting stress levels. Mind-mindedness may also be a potentially important construct for clinial families. Only one study has evaluated mind-mindedness in a clinical population (Walker et al., 2012) and the authors reported lower mind-mindedenss and higher parenting stress in this population. Therefore,

intervention with respect to mind-mindedness may also be potentially useful in this population. Parents in a clinical population may have increased parenting stress and thus a lessened ability to mentalize effectively with respect to their child; the present study sheds light on the relationship beween mind-mindedness and parenting stress (in older children) and thus provides further evidence for intervening in this regard.

## Conclusion

The present study analyzed the consistency of mind-mindedness, parenting stress, and parenting style. Mind-mindedness associated with the younger and older children did not covary, suggesting that mind-mindedness is likely a relational construct more specific to each child rather than a global parental trait. In contrast, parenting stress and parenting style tended to covary for younger and older children in the same family; such that when parenting stress was higher for a younger child, it was also higher for the older child. Mind-mindedness, parenting stress, and parenting style were subsequently analyzed for differences in average levels between the older and younger children. Parenting stress and parenting style were significantly different whereas mind-mindedness was not.

Subsequently, the relation between mind-mindedness and parenting stress was analyzed, suggesting this relation is actually different in younger and older children. With respect to parenting stress and parenting style, a general trend emerged for the younger children suggesting that parents who thought more mind-mindedly about their children tended to also utilize more authoritative parenting strategies and to experience lower levels of parenting stress. A general trend emerged for the older children suggesting that parents who thought more mind-mindedly about their children tended to utilize less authoritarian parenting strategies and to experience less parenting stress with respect to parent-child dysfunctional interactions.

With respect to mind-mindedness as a construct, it lacked support for consistency as compared to parenting stress and parenting style, both of which were highly correlated between younger and older children. Therefore, this study contributes to the limited literature regarding the consistency of mind-mindedness between two children in the same family. The findings from this study suggest that mind-mindedness is more specific to the unique parent-child relationship and is therefore more likely a relational construct than a global parental trait.

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## Appendix A

Demographic Questionnaire

Please indicate your age:
Please indicate your gender:
Please indicate your ethnicity: Should I give choices here?
Please indicate the first language spoken in your home:
Please indicate your highest level of education:

- Elementary school
- High school
- College diploma
- Undergraduate degree
- Graduate degree or higher

Please indicate the best match for your current employment:

- Full time employment
- part-time employment
- home duties
- studying
- volunteer work

Please indicate your marital status:

- Married
- Single
- Divorced
- Other

Please indicate your City/Province or City/State:

**Older Child:**
Birth date of older child:
Gender of older child:
Older child's typical week: daycare, preschool, school, home, other
Has your older child ever received any early intervention services?
Do you have any developmental or behavioural concerns regarding your older child?
Does your older child have a developmental or mental health diagnosis?

**Younger child:**
Birth date of younger child:
Gender of younger child:
Younger child's typical week: daycare, preschool, school, home, other
Has your younger child ever received any early intervention services?

Do you have any developmental or behavioral concerns regarding your younger child?
Does your younger child have a developmental or mental health diagnosis?

Are there other children in the house? If so, what is the birth order?
Did anyone/will anyone be helping you complete these questionnaires?

## Appendix B

Developmental Screener: Ages 16-48 months

M-CHAT-R™

Directions: Please answer these questions about your YOUNGER child. Keep in mind how your child usually behaves. If you have seen your child do the behaviors a few times, but he or she does not usually do it, then please answer **no**. Please circle **yes** or **no** for every question. Thank you very much.

| | | | |
|---|---|---|---|
| 1. | If you point at something across the room, does your child look at it? (**FOR EXAMPLE**, if you point at a toy or an animal, does your child look at the toy or animal?) | Yes | No |
| 2. | Have you ever wondered if your child might be deaf? | Yes | No |
| 3. | Does your child play pretend or make-believe? (**FOR EXAMPLE**, pretend to drink from an empty cup, pretend to talk on a phone, or pretend to feed a doll or stuffed animal?) | Yes | No |
| 4. | Does your child like climbing on things? (**FOR EXAMPLE**, furniture, playground equipment, or stairs) | Yes | No |
| 5. | Does your child make unusual finger movements near his or her eyes? (**FOR EXAMPLE**, does your child wiggle his or her fingers close to his or her eyes?) | Yes | No |
| 6. | Does your child point with one finger to ask for something or to get help? (**FOR EXAMPLE**, pointing to a snack or toy that is out of reach) | Yes | No |
| 7. | Does your point with one finger to show you something interesting? (**FOR EXAMPLE**, pointing to an airplane in the sky or a big truck in the road) | Yes | No |
| 8. | Is your child interested in other children? (**FOR EXAMPLE**, does your child watch other children, smile at them, or go to them?) | Yes | No |
| 9. | Does your child show you things by bringing them to you or holding them up for you to see – not to get help, but just to share? (**FOR EXAMPLE**, showing you a flower, a stuffed animal, or a toy truck) | Yes | No |
| 10. | Does your child respond when you call his or her name? (**FOR EXAMPLE**, does he or she look up, talk or babble, or stop what he or she is doing when you call his or her name?) | Yes | No |
| 11. | When you smile at your child, does he or she smile back at you? | Yes | No |
| 12. | Does your child get upset by everyday noises? (**FOR EXAMPLE**, does your child scream or cry to noise such as a vacuum cleaner or loud music?) | Yes | No |
| 13. | Does your child walk? | Yes | No |

| | | |
|---|---|---|
| 14. Does your child look you in the eye when you are talking to him or her, playing with him or her, or dressing him or her? | Yes | No |
| 15. Does your child try to copy what you do? (**FOR EXAMPLE**, wave bye-bye, clap, or make a funny noise when you do) | Yes | No |
| 16. If you turn your head to look at something, does your child look around to see what you are looking at? | Yes | No |
| 17. Does your child try to get you to watch him or her? (**FOR EXAMPLE**, does your child look at you for praise, or say "look" or "watch me"?) | Yes | No |
| 18. Does your child understand when you tell him or her to do something? (**FOR EXAMPLE**, if you don't point, can you child understand "put the book on the chair" or "bring me the blanket"?) | Yes | No |
| 19. If something new happens, dose your child look at your face to see how you feel about it? (**FOR EXAMPLE**, if he or she hears a strange or funny noise, or sees a new toy, will he or she look at your face?) | Yes | No |
| 20. Does your child like movement activities? (**FOR EXAMPLE**, being swung or bounced on your knee) | Yes | No |

## Appendix C

Developmental Screener: Ages 4-11 years

AQ-10 (Child Version)

| | **Please tick one option per question only:** | **Definitely Agree** | **Slightly Agree** | **Slightly Disagree** | **Definitely Disagree** |
|---|---|---|---|---|---|
| 1 | S/he often notices small sounds when others do not | | | | |
| 2 | S/he usually concentrates more on the whole picture, rather than the small details | | | | |
| 3 | In a social group, s/he can easily keep track of several different people's conversations | | | | |
| 4 | S/he finds it easy to go back and forth between different activities | | | | |
| 5 | S/he doesn't know how to keep a conversation going with his/her peers | | | | |
| 6 | S/he is good at social chit-chat | | | | |
| 7 | When s/he is read a story, s/he finds it difficult to work out the character's intentions or feelings | | | | |
| 8 | When s/he was in preschool, s/he used to enjoy playing games involving pretending with other children | | | | |
| 9 | S/he finds it easy to work out what someone is thinking or feeling just by looking at their face | | | | |
| 10 | S/he finds it hard to make new friends | | | | |

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## Appendix D

Parenting Styles and Dimensions Questionnaire

**Directions:**
This questionnaire is designed to measure *how often* you exhibit certain behaviors towards your YOUNGER/OLDER CHILD. Please read each item on the questionnaire and think about *how often* you exhibit this behavior and place your answer on the line to the left of the item
**REMEMBER:** For each item, rate how often you exhibit this behavior with your YOUNGER/OLDER CHILD.

I EXHIBIT THIS BEHAVIOR:
1 = Never
2 = Once In Awhile
3 = About Half of the Time
4 = Very Often
5 = Always

_____ 1. I am responsive to my child's feelings and needs.
_____ 2. I use physical punishment as a way of disciplining my child.
_____ 3. I take my child's desires into account before asking him/her to do something.
_____ 4. When my child asks why he/she has to conform, I state: because I said so, or I am your parent and I want you to.
_____ 5. I explain to my child how I feel about the child's good and bad behavior.
_____ 6. I spank when my child is disobedient.
_____ 7. I encourage my child to talk about his/her troubles.
_____ 8. I find it difficult to discipline my child.
_____ 9. I encourage my child to freely express (himself)(herself) even when disagreeing with me.
_____ 10. I punish by taking privileges away from my child with little if any explanations.
_____ 11. I emphasize the reasons for rules.
_____ 12. I give comfort and understanding when my child is upset.
_____ 13. I yell or shout when my child misbehaves.
_____ 14. I give praise when my child is good.
_____ 15. I give into my child when the child causes a commotion about something.
_____ 16. I explode in anger towards my child.
_____ 17. I threaten my child with punishment more often than actually giving it.
_____ 18. I take into account my child's preferences in making plans for the family.

_____ 19. I grab my child when being disobedient.

_____ 20. I state punishments to my child and do not actually do them.

_____ 21. I show respect for my child's opinions by encouraging my child to express them.

_____ 22. I allow my child to give input into family rules.

_____ 23. I scold and criticize to make my child improve.

_____ 24. I spoil my child.

_____ 25. I give my child reasons why rules should be obeyed.

_____ 26. I use threats as punishment with little or no justification.

_____ 27. I have warm and intimate times together with my child.

_____ 28. I punish by putting my child off somewhere alone with little if any explanations.

_____ 29. I help my child to understand the impact of behavior by encouraging my child to talk about the consequences of his/her own actions.

_____ 30. I scold or criticize when my child's behavior doesn't meet my expectations.

_____ 31. I explain the consequences of the child's behavior.

_____ 32. I slap my child when the child misbehaves.

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**Robinson, C. C., Mandleco, B., Olsen, S. F., & Hart, C. H. (2001). The Parenting Styles and Dimensions Questionnaire (PSDQ). In B. F. Perlmutter, J. Touliatos, & G. W. Holden (Eds.),** ***Handbook of family measurement techniques: Vol. 3. Instruments & index*** **(pp. 319 - 321). Thousand Oaks: Sage.**

## Appendix E

Representational Measure of Mind-Mindedness

There are no right or wrong answers to the following questions. You should feel free to write about the first things that come into your head, no specific description is required.

1. Can you describe your YOUNGER/OLDER CHILD for me?

_____

_____

_____

_____

_____

_____

_____

## Appendix F

Sample Responses: Parental Mind-Mindedness

Below are sample responses from parents in this study (responses have been compiled across multiple respondents to protect anonymity):

Lower Mind-Mindedness:

- "She is a super happy 18-month old who talks a lot and is beginning to form clear words. She is energetic, outdoorsy, active, and rambunctious."
- "Knows all of his letters, sounds they make, numbers, one-to-one counting, and counting by multiples. He is very boisterous and chatty. Rarely complains about the food he is served or bedtime. Very energetic and seems to 'bounce off the walls' a lot."

Higher Mind-Mindedness:

- "He has a strong, determined personality. He is one of the most imaginative and creative people I have ever met! He is sensitive, thoughtful, compassionate, and caring. He is also curious, yet shy, and sometimes strong-willed."
- "She's a really funny kids, who likes to play "jokes" on me, which I didn't know a two-year-old could do. Very headstrong, stubborn, and mischievous. She has an amazing imagination, is very inquisitive, and loves reading."

## Appendix G

Parenting Stress Index- 4- Short Form

Note: These are sample questions provided by the publisher:

Circle SA if you strongly agree with the statement.
Circle A if you agree with the statement.
Circle NS if you are not sure.
Circle D if you disagree with the statement.
Circle SD if you strongly disagree with the statement.

1. When my child wants something, my child usually keeps trying to get it.
2. My child is so active that it exhausts me.
3. My child appears disorganized and easily distracted.
4. Compared to most, my child has more difficulty concentrating and paying attention.
5. My child will often stay occupied with a toy for more than 10 minutes.

## Appendix H

Perceived Stress Scale

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate by circling *how often* you felt or thought a certain way.
Name _____Date _____
Age _____ Gender (Circle): M F Other _____

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often

1. In the last month, how often have you been upset because of something that happened unexpectedly?..... 0 1 2 3 4

2. In the last month, how often have you felt that you were unable to control the important things in your life? ..... 0 1 2 3 4

3. In the last month, how often have you felt nervous and "stressed"? ..... 0 1 2 3 4

4. In the last month, how often have you felt confident about your ability to handle your personal problems? ..... 0 1 2 3 4

5. In the last month, how often have you felt that things were going your way?..... 0 1 2 3 4

6. In the last month, how often have you found that you could not cope with all the things that you had to do? ..... 0 1 2 3 4

7. In the last month, how often have you been able to control irritations in your life?..... 0 1 2 3 4

8. In the last month, how often have you felt that you were on top of things?. 0 1 2 3 4

9. In the last month, how often have you been angered because of things that were outside of your control?..... 0 1 2 3 4

10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? ..... 0 1 2 3 4

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References The PSS Scale is reprinted with permission of the American Sociological Association, from:

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