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Parental support, control, and stress: parenting practices and beliefs of parents of children with and without ADHD

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Parental Support, Control, and Stress: Parenting Practices and Beliefs of Parents of Children with and without ADHD

by

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ABSTRACT

The purpose of this study was to examine perceived parenting practices, parenting stress, and parental beliefs in families with and without a child diagnosed with Attention-Deficit/Hyperactivity Disorder (ADHD). This study provides a systemic focus by also investigating demographic characteristics and considering both parents' and children's perceptions of parenting behaviours. Twenty-five parents of children (7 to 16 years) diagnosed with ADHD and 19 parents of children with no diagnosis participated. Children from 27 parent-child dyads also participated. Parents of children diagnosed with ADHD reported significantly higher levels of parenting stress and a more external parental locus of control. Parents and children in the comparison group showed greater concordance in perceived parenting behaviours, but the parenting practices of the two groups did not differ. Significant associations were detected between demographics and parenting factors in both groups, yet none overlapped. Results are discussed in terms of the implications for treatments designed to support children with ADHD.

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Thank you. Thank you. Thank you.

For Bubba and Gloria

&

Deanna Mae Winters and John Dunion

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LIST OF TERMS & ABBREVIATIONS

Definition of Key Terms

Attention-Deficit/Hyperactivity Disorder. Attention-Deficit/Hyperactivity Disorder (ADHD) is a complex and prevalent child-onset disorder, affecting approximately 3 to 7% of children (American Psychiatric Association, 2000), characterised by developmentally inappropriate levels of inattention and/or impulsivity. The symptoms are pervasive, occur in multiple-settings and are associated with a number of negative long-term impairments (Barkley, 2000).

ADHD-diagnosed group. The ADHD-diagnosed group, in the present study, includes parents of children who have a previous diagnosis of Attention-Deficit/Hyperactivity Disorder from a psychologist, psychiatrist, or family physician. The term is also used to describe the children of these parents, some of whom participated, who are considered the “focus child” (see definition of “focus child”).

Behavioural control. Behavioural control involves parental monitoring, rules, and knowledge of the child’s whereabouts by the parent; however, the additional factor of “age-appropriateness” is particularly relevant to defining behavioural control. As children transition from childhood to adolescence, and onto adulthood, it is expected that parental monitoring and enforcement of rules will decrease in order to promote/encourage the child to develop a sense of independence and become comfortable with their own identity (Barber & Harmon, 2002).

Child/Children. For the purposes of this study, the terms “child” and “children” refer to children and adolescents of any age unless specified otherwise.

Comparison group. The comparison group refers to the parents, or parent-child dyads when applicable, of children who have no clinical diagnosis and do not present with any notable behavioural, emotional, or learning challenges.

Dimensions of parenting. Parenting dimensions refer to the "features, qualities, the descriptive scheme used to capture the nature of parenting" (Skinner, Johnson, & Snyder, 2005). The current study focuses on three parenting dimensions: parental support, behavioural control, and psychological control.

Family. The term 'family' refers to "two or more persons related by birth, marriage, or adoption, who reside together" (Statistics Canada Census definitions, 2006).

Focus child. The focus child is the child who the parent participants are asked to consider when responding to relevant survey items, and is primarily used to discriminate this child from their siblings in cases of families with more than one child.

Parenting practices. Parenting practices are the behaviours a parent engages in as a means of carrying out their parenting goals. Parenting practices include the "specific, goal-directed behaviours through which parents perform their parental duties" (Darling & Steinberg, 1993, p. 488). Unlike 'parenting styles', parenting practices are domain specific and involve "goal-directed parenting behaviours" and "have a direct link to a child's behaviour and outcomes" (Lee, Daniels, & Kissinger, 2006). The terms "parenting practices" and "parenting behaviours" are used interchangeably throughout this paper.

Parenting stress. Parenting stress is a distinct type of stress (Theule, Wiener, Tannock, & Jenkins, 2010) that increases as the demands of the parenting role, as perceived by the parent, exceeds the resources, sometimes also perceived, available to the parent (Abidin, 1992; Duchovic, Gerskensmeyer, & Wu, 2009).

Psychological Control. Psychological control refers to parenting practices aimed at controlling the child by intruding on their psychological and emotional development (Barber, Stolz, & Olsen, 2005). For example, psychological control has been characterized as parents' excessive use of manipulative parenting behaviours, including guilt-induction, shame, love withdrawal, and constraining verbal expression (Barber & Harmon, 2002; Soenens & Vansteenkiste, 2010).

Socialization. Socialization is the process by which individuals acquire knowledge, skills, values, and attributes of their character – all of which allow them to function as contributing members of relevant groups and society as a whole (Berns, 2007).

Abbreviations

ADHD	Attention-Deficit/Hyperactivity Disorder
CD	Conduct Disorder
CRPBI-30	Children's Report of Parent's Behaviour – 30 item (Schludermann & Schludermann, 1988)
CRPBI-108	Children's Report of Parent's Behaviour – 108 item (Schaefer, 1965).
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders – Forth Edition (Text Revision; APA, 2000).
LD	Learning Disorder
ODD	Oppositional Defiant Disorder
PLOC	Parental Locus of Control scale; two, of five, subscales were used in this study to measure parental cognitions/beliefs: Parental Responsibility and Parental Control of Child's Behaviour (referred to as 'Parent Lacks Responsibility' and 'Parent Lacks Control' in this study; Campis, Lyman, & Prentice-Dunn, 1986).
PSS	Parental Stress Scale (Berry & Jones, 1995).

CHAPTER ONE: INTRODUCTION AND RATIONALE

Background to the Study

One of the most influential factors in nurturing a child's development and determining who they become in adulthood is the relationship they have with their parent(s). Moreover, parents are arguably the most significant agents in the socialization of a child. The ecological model of socialization stresses the importance of recognizing the child does not develop in a vacuum, but in a complex ecology where they are influenced by, and also influence, various factors (Barber, 2002; Belsky, 1984; Gallagher, 2002). At any point in this dynamic process, there are a number of measurable outcomes, which in turn influence all other factors, and the process as a whole.

Parenting, in short, refers to "a complex activity that includes many specific behaviours that work individually and together to influence child outcomes" (p. 1). Parents are required to make decisions about how to parent their children on a daily basis and in a variety of situations. The outcomes of parenting decisions depend, in part, on characteristics of the child as well as factors outside of the parent-child relationship (e.g., relations with peers, socioeconomic status, culture and subculture, and characteristics of the community/neighbourhood; O'Connor, 2002).

Decades of research have consistently identified two primary influential components of parenting: a *supportive component,* defined by a number of affective and nurturant behaviours, and a *controlling component*, defined by regulating and disciplinary type behaviours (Barber, Stolz, & Olsen, 1995). Researchers have also emphasized the importance of differentiating between *behavioural control* and *psychological control*; the difference being that *behavioural control* refers to attempts to regulate and supervise the child's behaviour (e.g. curfews), while *psychological control* refers to interfering with the child's "inner" world (e.g. promoting guilt; Barber, Xia, Olsen, McNeely, & Bose, 2012; Reitz, Dekovic, & Meijer, 2006). Parenting that encourages psychological autonomy while continuing to provide discipline, affection, and support is associated with the best adjustment outcomes later in life (Holmbeck, Shapera, & Hommeyer, 2002; O'Connor, 2002). In contrast, interference with exploration and employing manipulative means (i.e. psychological control) is associated with interruptions in social and emotional development (Soenens, Luyckx, Vansteenkiste, Luyten, Duriez, & Goossens, 2008).

Understanding the parent-child relationship also requires recognizing that the child and parent are intertwined in cycles of reciprocal causality (Reitz, Dekovic, & Meijer, 2006), meaning that the parent-child relationship is bidirectional and dynamic. Parenting behaviours influence the child, but are also influenced by characteristics of the child (e.g. temperament; Gallagher, 2002). Moreover, characteristics of the parent, such as level of stress and beliefs about parenting roles, also influence parenting behaviours (Heiman, Zinck, & Heath, 2008).

A common theme throughout the socialization literature is recognition that parenting is "a highly complex [task] that often must be performed within very demanding situations, with limited personal and physical resources, and in relation to a child who by virtue of some mental or physical attribute may be exceedingly difficult to parent" (Abidin, 1990, p. 298). Therefore, in order to understand the parent-child relationship it is first necessary to understand the how the various components of this complex task interact.

Problem Statement

Much of the previous parenting literature examines parenting practices and related factors in families of children who do not have significant behavioural and/or emotional concerns. There is also an extensive body of work aimed at comparing the parenting practices of different cultures and circumstances. Though these research efforts are important, it is unfortunate that understanding the parent-child relationship in populations where there is evidence that dysfunctional parenting has significant negative implications, such as families of children with Attention-Deficit/Hyperactivity Disorder (ADHD), has received less attention.

A related issue concerns the focus of the literature on ADHD. Specifically, because ADHD is primarily associated with academic underachievement (Frazier, Youngstrom, Glutting, & Watkins, 2007; Loe & Feldman, 2007) and externalizing behaviours (Miranda, Grau, Rosel, & Melia, 2009), it is not surprising that the relevant literature focuses on behavioural modification strategies, educational interventions and academic outcomes. However, ADHD not only affects academic success, but other areas of functioning (e.g. social competence) and the family system as a whole.

Purpose of the Study

The present study investigated perceived parenting practices, parenting stress, and parental beliefs both within and between families. The families included in the study comprised two groups: a group of parent-child dyads where the child has a diagnosis of ADHD, and a group of families where the focus child has no diagnosis.

The overarching goal of this study was to better understand the parenting behaviours of parents of children with ADHD compared to parents of children that are not clinically identified and do not present with any known behavioural or learning difficulties. A second overall goal was to explore the concordance of parenting behaviours as perceived and reported on by the child and his/her parent. Finally, this study examined potential differences in these two subsamples with respect to parenting stress and parental beliefs, particularly as they relate to parenting behaviours and characteristics of the family, parent, and child. The hope is that the outcomes of this study will be useful in supporting previous findings, clarifying discrepancies in the literature, and identifying additional avenues that would allow for a better understanding of how to support these families. As such, this investigation is both inferential and exploratory in nature (Nenty, 2009).

Independent and dependent variables.

To examine parenting behaviours and related factors, and to compare them in families with a child diagnosed with ADHD and parent-child dyads where the child does not present with significant learning or behavioural concerns, several independent (i.e., demographic) and dependent variables were selected. The demographic variables of interest included: family structure and number of children in the family, and child age, gender, birth order, and grade range. The dependent variables for this study were the three parenting dimensions most often studied in the parenting literature (i.e., parental support, behavioural control, and psychological control), parenting stress, and parental beliefs related to parental responsibility and control of child's behaviour. Common factors found throughout the general parenting literature to be strongly associated with parenting behaviours, as well as emerging throughout the literature as factors that discriminate parents of children with ADHD from parents in comparison groups were used in the selection of "related factors" for this study.

Significance of the Study

As McKee and colleagues (2008) highlight, it is important to study both the specific and diffuse effects of parenting practices in specific contexts, such as parenting a child with attention-deficit/hyperactivity disorder (ADHD). These authors emphasize that although parenting has long been accepted as a critical determinant of child externalizing behaviour, exploring the parenting practices in specific contexts, such as families including a child diagnosed with ADHD, is necessary to understanding how these families are similar and different from other populations. Recognition of these differences and similarities is a necessary first step in determining where preventative supports are most needed, and identifying components to include when designing effective preventative strategies and multimodal interventions.

As previously mentioned, the overarching purpose of the present study is to determine if there are differences in the parenting practices, and related factors, of parents of children with and without ADHD. The additional aim of this study is to examine relations between these parenting factors and characteristics of the parent, child, and family. Finally, because the practical reason for studying parenting behaviours (and related factors) is to gain a better understanding of their determinants and effects, this study considers parenting practices from both the parent and child perspective.

CHAPTER TWO: LITERATURE REVIEW

Introduction

This chapter serves two main purposes: (a) to outline the previous literature, including historical and theoretical conceptualizations of parenting behaviours, the factors that influence parenting behaviours both directly and indirectly, and the positive and negative impacts parenting behaviours have on child development indicators; and (b) to give a critical analysis of the recent empirical literature related to parenting children with Attention-Deficit/Hyperactivity Disorder (ADHD). The focus is on consistent and conflicting findings from qualitative studies and meta-analyses published within the last decade. In particular, the methodological issues and limitations of the studies are highlighted with respect to their potential impact on the findings. Studies were excluded from the review if the focus was on children outside the age range of the current study (i.e., ages 7 to 16 years) or employed methods that were not comparable to the current study.

Throughout this review, the terms “parenting behaviours” and “parenting practices” are used synonymously. The chapter begins with a brief introduction to the concepts of parenting and parent-child relationships and a brief review of the relevant historical and theoretical frameworks. Next, the three parenting dimensions relevant to the present study are discussed with respect to their determinants and their impact on the child. Following the overview of the general literature on the determinants and outcomes of parenting behaviours, the review turns to parenting within a specific context: parenting a child with Attention-Deficit/Hyperactivity Disorder. The chapter concludes with a summary and discussion of the research presented. At this time, the purpose of the present study is discussed with consideration of re-occurring themes and gaps in the current literature. Finally, the research questions for the present study are presented, and some predictions are made.

Parenting: Conceptualization and a Brief Review of the History

Parenting is a complex, broad, and dynamic construct, with multiple determinants and multiple effects. Therefore, it is not surprising that there is no single comprehensive theory of parenting, and there are a vast number of tools and methods used to assess the various components subsumed under the umbrella construct of parenting (Smith, 2011). Parenting, in short, refers to the "series of decisions about the socialization of [a child]" made by the parent (Kagan, 1975). When thinking about how one 'parents' their child, one of the main tasks for any parent involves determining what they are doing to support their child in "becoming a responsible, contributing member of society" (Berns, 2007, p. 129).

Multidimensional conceptions of parenting recognize that it involves an immeasurable number of interrelated factors. However, decades of research have identified core 'aspects' of parenting that repeatedly emerge as important factors throughout the literature. The central dimensions of parenting, first introduced in the 1960s, that continue to surface as important dimensions of parenting behaviour are: (a) parental support, (b) behavioural control, and (c) psychological control (Barber, Stolz, & Olsen, 2005; Darling & Steinberg, 1993; Galambos, Barker, & Almeida, 2003). Importantly, though there is strong evidence for the importance of these three core components of parenting, the lack of a unified definition and conceptualization of parenting and of the various components is a pervasive issue in the parenting literature (Grolnick, 2003; McKee, Colletti, Rakow, Jones, & Forehand, 2008). For example, in an examination of several decades of parenting research, Skinner, Johnson, and Snyder (2006) identified approximately 20 to 30 different definitions and related/comparable constructs for each of the core parenting dimensions.

Despite the issues related to defining and conceptualizing parenting dimensions, the extensive literature on parent-child relations has consistently led to recognition of three global and relatively independent dimensions of parenting. As previously mentioned, parental support (i.e., responsiveness and connectedness to the child), behavioural control (i.e., regulation of the child's behaviour through firm and consistent discipline), and psychological control (i.e., control of the child's behaviour through psychological means such as love withdrawal and guilt induction; Barber & Harmon, 2002; Darling & Steinberg, 1993; Galambos, Barker, & Almeida, 2003; Maccoby, 2000; Skinner, Johnson, & Snyder, 2005) are the primary dimensions of parenting discussed in the contemporary literature.

Frameworks for studying parenting.

An investigation of six decades of socialization literature reveals two primary lines of research and theory: the study of global parenting characteristics (i.e., parenting styles) and the study of specific parenting practices (Darling & Steinberg, 1993). Notably, these two lines of research are not completely distinct, and many of the findings overlap and can be understood in the framework of the other. A brief chronological account of each of these lines of research/theory is provided, followed by a comparison and outline of how the framework of the current study relates to these two conceptualizations.

Broad parenting typologies.

Domain general parenting frameworks include conceptualizations of parenting that discuss the determinants and outcomes of parenting with respect to broad parenting typologies or “parenting styles” (Baumrind, 1970; Maccoby & Martin, 1983). Each parenting style is made up of patterns, or aggregates, of specific parenting behaviours (Anderson & Branstetter, 2012). The study of global parenting characteristics is most often associated with Diana Baumrind (1965; 1970; 1991) who described the positive and negative effects of different patterns of parenting behaviours, or parenting styles.

Parenting style refers to the “constellation of attitudes toward the child that are communicated to the child and create an emotional climate in which the parent’s behaviours are expressed” (Darling & Steinberg, 1993, p. 493). The most common parenting styles discussed in the parenting literature include: (a) *authoritative*, (b) *authoritarian*, (c) *indulgent*, and (d) *neglecting/uninvolved* (Lee, Daniels, & Kissinger, 2006). According to Baumrind (1991), parents’ behaviours are comprised of two orthogonal childrearing dimensions: responsiveness and ‘demandingness’. Each of the four parenting styles is characterised by a grouping of high and low levels of positive and negative parenting behaviours that fall under the two childrearing dimensions, and each is associated, to some extent, with different outcomes for the child (Baumrind, 1996; Maccoby & Martin, 1983). The authoritative parenting style involves a balance of affection and responsiveness to the needs of the child, as well as developmentally appropriate levels of parental monitoring (i.e., rule setting and enforcement; Anderson & Branstetter, 2012). In contrast, the authoritarian parenting style is associated with placing a high value on obedience, and may restrict the child's autonomy (Smith, 2010). These parenting styles have been used for several decades to assess and understand the impact that the parenting climate has on the development of the child. What remains consistent in this line of research is that the authoritative style is viewed as optimal (Maccoby, 1992) and the authoritarian parenting style is most often associated with negative outcomes (e.g., hostility, rebelliousness, and aggression; Baumrind, 1991; Berns, 2007).

Although the study of parenting styles is still pervasive in the relevant literatures, many researchers argue that it may be more useful to deconstruct the characteristics that make up parenting styles, or typologies, to better understand which dimensions are most influential in specific contexts and how the dimensions interact with characteristics of the parent, child, and family. For example, Barber (1997) and other prominent researchers in this area argue that focusing on the specific components (or behaviours) that make up the aggregated typologies (e.g., authoritarian parenting style) is necessary for understanding such a complex construct.

The main argument for the need to study specific parenting behaviours relates to the consideration that the components that make up the aggregates are not necessarily mutually exclusive, nor can they be understood as opposite ends (i.e., extremes) of parenting dimensions (Barber, Stolz, & Olsen, 2005; Murphey, 1992; Tein, Roosa, & Michaels, 1994). Instead, the components coexist, to varying degrees, in parent-child relationships and they interact with one another over time (Rogers, Buchanan, & Winchell, 2003). The typological approach has been criticized for representing an oversimplification of a complex and dynamic process. As well, because studies adopting the typological approach generally focus on distinguishing between different parenting styles, it is possible that some parents do not fit neatly into a particular ‘style’. When the purpose of a study is to understand the effects of specific parenting practices, the typological approach often introduces significant methodological limitations. For example, Lee, Daniels, and Kissinger (2006) examined the parenting practices of 7,866 parents in the United States and derived four clusters, based on patterns of parenting practices (i.e., decision making, discussion, involvement, expectation, and rules) that differentially influenced child behaviours and outcomes (e.g., self-concept, locus of control, and math and reading scores). Although three of the four clusters were reminiscent of Baumrind’s parenting styles (i.e., authoritative, authoritarian, and neglecting), one of the four clusters derived could not be likened to any of Baumrind’s parenting styles. Therefore, Lee and colleagues (2006) argued that while there is value in understanding the effects of patterns of parenting behaviours, the classic typological approach does not allow for an adequate understanding of parenting from a multidimensional perspective.

Specific parenting behaviour frameworks.

The second type of framework for understanding parenting includes models that emphasize the importance of discussing and measuring the relative and unique influence of specific parenting constructs (e.g., warmth/support, control, and rejection; Studsrod &

Bru, 2009) and the behavioural indicators used to operationalize them (e.g., positive affect, monitoring, and criticism; McKee, Colletti, Rakow, Jones, & Forehand, 2008). The present study is based on a domain specific parenting framework. Specifically, the focus of this study is on measuring parenting practices associated with the three core parenting dimensions discussed earlier (i.e., parental support, behavioural control, and psychological control; Barnett, Shanahan, Deng, Haskett, & Cox, 2010). As such, the following sections focus primarily on studies that have included these three dimensions of parenting.

Parenting practices.

Parenting practices are the individual behaviours a parent engages in as a means of carrying out their parenting goals. Parenting practices include the "specific, goal-directed behaviours through which parents perform their parental duties" (Darling & Steinberg, 1993, p. 488). Unlike parenting styles, parenting practices are domain specific and involve purposeful parenting behaviours linked to children's behaviours and developmental outcomes (Lee, Daniels, & Kissinger, 2006). Notably, domain specific models do not assume that the three dimensions of parenting described previously (i.e., support, behavioural control, and psychological control) account for all forms of negative and positive parenting behaviours, but they recognize them because they have consistently been shown to characterize parent-child relationships as they relate to key outcomes for the child (O'Connor, 2002).

Parental support.

Parental support refers to the extent to which the parent responds to the child's needs in an accepting, responsive, and caring manner. In his seminal work on parenting factors, Schaefer (1965) defined this dimension as "Love: Positive evaluation, sharing expression of affection, emotional support" (p. 415). Parental support is well recognized in the relevant literature to be one of the most important parenting behaviours, as it satisfies one of the child's basic needs: acceptance (Galambos, Barker, & Almeida, 2003). With respect to the effects of parental support, also referred to as warmth, greater parental support has consistently been shown to be associated with low levels of both internalizing (e.g., depression) and externalizing symptoms (e.g., aggression; McKee et al., 2008; Plunkett, Henry, Robinson, Behnke, & Falcon, 2007). Recent studies suggest that parental support has the strongest links to "parenting effects" compared to the dimensions of behavioural and psychological control (Barber, Stolz, & Olsen, 2005; Galambos et al., 2003; Gallagher, 2002).

Behavioural control.

Behavioural control is a construct associated with parenting behaviours aimed at controlling the child's activities (McKee, Colletti, Rakow, Jones, & Forehand, 2008). Unlike psychological control, however, behavioural control is typically viewed as a positive parenting strategy. For example, behavioural control, a dimension Grolnick and Pomerantz refer to as 'structure' (2009), is often found to predict greater prosocial behaviours and fewer, or less severe, externalizing behaviours. Similarly, parents of children with behavioural problems have been shown to employ fewer or less consistent disciplinary strategies (i.e., behavioural control; Barber, 1996; Gallagher, 2002), though the direction of this effect is not completely understood. Additionally, maladaptive behavioural control (i.e., low levels of monitoring) in young children has been linked to aggression and delinquent behaviour later in life (Reitz, Dekovic, & Meijer, 2005). Notably, the findings related to the relationship between behavioural control and outcomes (e.g., externalizing and internalizing problems) are somewhat inconsistent. This is particularly true if one fails to consider the age of the participants (children, adolescents, or young adults) and the methodology used when comparing findings across studies. For example, Manzeske and Stright (2009) found that a high level of behavioural control during adolescence was associated with poor emotional regulation when the children entered post-secondary studies. Though this finding may seem contradictory to previous findings for behavioural control, it is necessary to consider that behavioural control, parents' distress, and parents' reactivity were measured by having parents recall these factors retrospectively.

One of the primary reasons for the inconsistent, or even competing, findings related to parental behavioural control relates to the fact that operational definitions and methods of assessment vary substantially across studies (Barber, 2002; Gallagher, 2002; Grolnick, 2002). Nonetheless, when defined in terms of the use of sufficient and developmentally appropriate discipline, monitoring, communication, and involvement, behavioural control has typically shown to be associated with positive adjustment in several domains of functioning (e.g., academic achievement, peer relationships, emotional stability; Fung & Lau, 2010; McElhaney, Porter, Thompson, & Allen, 2008;

Reitz, Dekovic, & Meijer, 2005). Based on a four-year longitudinal investigation of parenting behaviours and related factors in 120 families (children aged 10 years at T1 and 14 years at T2), Putnick and colleagues (2008) created a model of the influences of parenting behaviours on child outcomes. This model proposed that parental behavioural control influences a range of outcomes (e.g., scholastic competence, social acceptance, physical appearance, behavioural conduct etc.) indirectly by affecting the child's self-concept.

Psychological control.

Though first introduced by Schaefer in the 1960s (Schaefer, 1965) it was only within the past two decades that developmental psychologists and socialization researchers have fully recognized the importance of studying parental psychological control (Soenens & Vansteenkiste, 2010). Psychological control as a construct separate from behavioural control has been validated in cross-cultural studies (Barber, Stolz, & Olsen, 2005), and there is ample evidence suggesting that psychological control has its own set of determinants, and outcomes for the child. A parent who uses psychological control may use manipulation, love withdrawal, conditional regard, or ridicule to keep the child dependent on the parent, which in turn affects their development of autonomy and reduces their self-worth (Barber, Xia, Olsen, McNeely, & Bose, 2012). Not surprisingly, these parenting practices are unequivocally associated with poor developmental outcomes (Soenens & Beyers, 2012), such as lower self-esteem, internalizing and externalizing behaviours (McKee, Colletti, Rakow, Jones, & Forehand, 2008), poor academic achievement (Lee, Daniels, & Kissinger, 2006), and symptoms of psychopathology (Haseby, Nucci, & Nucci, 2004).

Relations between parenting behaviours.

Although there is substantial evidence supporting the value of examining parenting practices independently, it is notable that they are not orthogonal. In particular, there are ongoing debates related to differentiating behavioural and psychological control. Though these parenting dimensions both fall under the umbrella of ‘parental control,’ there is strong evidence indicating that they are more different than they are the same (Anderson & Branstetter, 2012; Barber, Xia, Olsen, McNeely, & Bose, 2012; Soenens, 2011). Though a comprehensive examination of the factors related to this debate is not within the scope of this review, it is certainly necessary to mention and will appear throughout the paper. The key difference between the two forms of control, according to many prominent researchers in the area, is “the domain over which control is exercised” (Barber et al., 1994, p. 1122; Smetana & Daddis, 2002), where the ‘domain’ refers to distinct targets of parents’ socialization efforts.

It is also important to consider that high or low levels of one dimension of parenting may moderate the effects or impact of other parenting behaviours. For example, though the findings of many studies support the association between behavioural control and positive outcomes for the child, others have found that this is only true if high levels of parental support accompany the behavioural control (Williams, Ciarrochi, & Heaven, 2012).

The 'Effects' of Parenting Practices

Although there is no single framework or theory on how to discuss parenting practices and their influence on child development, there is a consensus on how adequate, or positive, parenting is defined (O'Connor, 2002). Specifically, it is widely accepted that a parenting approach that is warm, responsive, and supportive of the child's development as an autonomous individual is associated with the best outcomes later in life (Grolnick, 2003; Kawabata, Alink, Tseng, van IJzendoorn, & Crick, 2011).

One important consideration with respect to the effects of parenting relates to the perception of parenting behaviours. As Soenens and Beyers (2012) astutely point out, "it is important to distinguish between what parents actually say and do (i.e., objective parenting practices) and how parental behaviour is experienced by adolescents" (p. 247). For example, are the negative influences associated with inducing guilt not dependent on whether or not the child feels guilty? Notably, the importance of perception is most often discussed with respect to parental psychological control, perhaps because the arguments are most clearly made; however, the same reasoning likely applies to all parenting practices. For instance, are parental attempts to show their love to their child (i.e., parental warmth/support) not dependent on whether or not the child feels supported? The answer to both of these questions is likely "yes" and underscores the complexity of studying parenting. Specifically, the child's sensitivity or temperament must not only be considered as one factor in the dynamic relationship, but also as the lens through which the child experiences it. As well, it follows logically that parents' perceptions of their own parenting behaviours must also be considered as a variable that is potentially separate from either actual, or objective, parenting behaviours and parenting behaviours as perceived by the child.

Factors Associated with Parenting Practices

As previously mentioned, the parent-child relationship is constantly evolving in a bidirectional manner (Gallagher, 2002). This makes understanding the intricacies of the relationship and differentiating factors that should be considered determinants from those that are better understand as outcomes a difficult task. Therefore, to fully appreciate and understand how parenting behaviours are affected by, but also affect the child, it is necessary to examine parenting behaviours and contextual factors simultaneously.

Previous studies have identified a large number of variables that serve as predictors, mediators, and moderators of parenting behaviours. As already noted, understanding the parent-child relationship also requires recognizing that the child and parent are intertwined in cycles of reciprocal causality (Reitz, Dekovic, & Meijer, 2006), meaning that the parent-child relationship is bidirectional and dynamic. Parenting behaviours influence the child, but are also influenced by characteristics of the child (e.g. temperament and behaviour); and characteristics of the parent, such as level of stress and beliefs about parenting roles, influence parenting practices (Heiman, Zinck, & Heath, 2008). Moreover, influences from sources beyond the parent and child and the child's reaction to their parent's demands have an effect on parenting behaviours (Li & Lee, 2012; Maccoby, 2000; Pluess & Belsky, 2009; Rogers, Wiener, Marton, & Tannock, 2009).

The following sections give a brief account of a number of factors found throughout the parenting literature to be strongly associated with parenting behaviours and the parent-child relationship. There is an extensive literature on the influence of factors beyond the child, parent, and family (e.g., culture, neighbourhood; Berns, 2007; O'Connor, 2002), but a review of these factors is beyond the scope of this paper. To support the goals of the current study, the following sections focus on the child and parent characteristics most often associated with parenting behaviours and the impact they have on the child.

Parenting stress.

Parenting stress is a distinct type of stress (Theule, Wiener, Tannock, & Jenkins, 2010) that increases as the demands of the parenting role, as perceived by the parent, exceeds the resources, sometimes also perceived, available to the parent (Abidin, 1992; Duchovic, Gerkensmeyer, & Wu, 2009). Parenting stress is strongly associated with parenting behaviours (Deater-Deckard, 2004; Solem, Christophersen, & Martinussen, 2011). For example, Guajardo, Snyder, & Petersen (2009) found that parenting stress was significantly associated with a more lax parenting approach (i.e., less appropriate discipline) and more overactive parenting (i.e., less responsive). In addition, parenting stress is associated with lower perceived parental control over children's behaviours (Harrison & Sofronoff, 2002) and less effective discipline strategies when dealing with externalizing behaviour problems (Duchovic, Gerkensmeyer, & Wu, 2009). As such, interest in understanding the determinants of parenting stress and the implications that parenting stress has for the parent-child relationship is of particular interest.

Additional evidence from longitudinal studies highlights the bidirectional relationship between parent and child effects (Putnick, Bornstein, Hendricks, Painter, Suwalsky, & Collins, 2008). For example, the Child Care and Family Project (CCFP), a large four-year longitudinal project in the United States, found that parenting stress at the beginning of the study was the strongest predictor of children's externalizing and internalizing problems at the completion of the project (Deater-Deckard, 2004). Additionally, as mentioned in the following section, the severity of children's externalizing problems is linked to incremental increases in parenting stress over time. Not surprisingly, parents who are distressed by their role as parents are more likely to use inconsistent and therefore less effective discipline strategies (Barnett, Shanahan, Deng, Haskett, & Cox, 2010).

Though the association between parenting stress and dysfunctional parenting practices is clearly established, several studies have shown that parenting stress does not inevitably lead to disruptions in parenting practices (Kotchick & Forehand, 2002). The implication of these findings is that there are likely additional factors that act as a sort of 'buffer' and reduce the negative impact that parenting stress has on parenting behaviours (Morgan, Robinson, & Aldridge, 2002).

Notably, parenting stress is its own construct, with its own determinants and effects (Anderson & Branstetter, 2012; Putnick et al., 2008; Solem et al., 2011). This does not necessarily mean that it is any more important than the other factors related to parenting behaviours, but it is evident that parental stress has such importance for the parent child relationship because it emerges as both a strong determinant of parenting practices and also interacts with related factors. In short, the interactions between parental stress, parenting practices and other factors (e.g., child temperament) capture the bidirectional nature of the parent child relationship.

Parental beliefs.

Aside from the determinants of parenting already discussed, it is important to consider parental cognitions and beliefs, as they also influence parenting behaviours (Bugental & Johnston, 2000). The current study focuses on two parental beliefs associated with parenting behaviours and parenting stress: parental beliefs about the amount of responsibility that should be assigned to parents regarding their child's behaviour and parental beliefs about the level of control they have over their child's behaviour. Both of these beliefs have been shown to be strongly related to overall parental locus of control (Hagekull, Bohlin, & Hammarberg, 2001). Parents with an external parental locus of control tend to attribute their children's development (e.g., successes and failures) and behaviour to forces outside of their control, while parents who hold a more internal parental locus of control are more likely to credit themselves for their child's development and behaviour (Freed & Tompson, 2011).

As well, there is a growing body of literature demonstrating that parents who feel in control of their children's behaviour, and more competent in their role as parents, report lower levels of parenting stress (Jones & Passey, 2004). Moreover, parental sense of competence is an important determinant in the level of warmth, or responsiveness, the parent shows towards their child (McLaughlin & Harrison, 2006)

Another line of research in this area relates to the relationship between parental beliefs and actual parenting behaviours. Specifically, several studies have shown that actual parenting behaviours are often inconsistent with parenting beliefs (Bugental & Johnston, 2000). As Smith (2010) highlights, “what parents would like to do, or feel is the right thing to do, may be very different from their actual behaviour with the child” (p. 159).

Characteristics of the child.

As mentioned previously, parenting is multiply determined and continuously interacts with characteristics of the child, such that parenting behaviours have an effect on the child, but characteristics of the child also influence parenting behaviours. Moreover, there is evidence suggesting that characteristics of the child mediate the association between parenting behaviours and developmental outcomes for the child (Rogers, Wiener, Marton, & Tannock, 2009).

Child age.

Research over the past decade related to the transition from childhood to adolescence has stressed the importance of parenting behaviours in the development of identity and autonomy (Caron, 2005; Caron, Weiss, Harris, & Catron, 2006; O’Connor, 2002). Therefore, it is not surprising that, in general, both parent and child reports of parenting behaviours indicate that parental behavioural control decreases with age (Barber, Stolz, & Olsen, 2005; Prinzie, Stams, Dekovic, Reijntjes, & Belsky, 2009). An important note here is that some studies have found a parallel increase in psychological control as behavioural control decreases (Kawabata, Alink, Tseng, van IJzendoorn, &

Crick, 2011; Smetana & Daddis, 2002), which could be explained by two separate mechanisms. First, a parent may want to control their child by imposing rules (e.g., strict curfews, monitoring computer use etc.), but they recognize that these restrictions are not developmentally appropriate, and therefore adopt more covert controlling strategies (i.e., psychological control). Alternatively, and not necessarily at the exclusion of the previous example, it is possible that excessive behavioural control becomes viewed (or experienced) as psychological control if it interferes with the child's development as an autonomous individual. This is particularly relevant for children transitioning from childhood into adolescence, and from adolescence to adulthood (Galambos, Barker, & Almeida, 2003).

Birth order.

Numerous studies have identified birth order as an important factor to consider in determining parenting practices. For example, Hotz and Pantano (2011) found that 'youngest child' status was associated with a more lax disciplinary style. As well, Someya, Uehara, Kadowski, Tang, and Takahashi (2000) identified that eldest children reported less parental support when compared to both "youngest" and/or "middle" children. Though the outcomes of these studies have been somewhat mixed, there is substantial evidence suggesting that birth order is associated in various ways to parenting behaviours and related factors (e.g., parenting stress). For example, though McLaughlin and Harrison (2006) did not identify birth order as a significant predictor of parenting behaviours, other researchers have found significant associations between 'only child' status, higher parenting stress, and less appropriate disciplinary strategies (Anastopoulous, Guevremont, Shelton, & DuPaul, 1992; Deater-Deckard, 2004).

Temperament.

Of the child characteristics that have been shown to influence parenting behaviours, child temperament is among those that have received the most attention over the past decades (Belsky, 1984; Lloyd & Hastings, 2009; Freed & Tompson, 2011). Temperament can be conceptualized as a biological predisposition that directly predicts adjustment, and interacts with parenting behaviours to predict outcomes (Gallagher, 2002). Research on child temperament is relevant to the present study as it subsumes individual differences in attention, emotional reactivity, and self-regulation. Gallagher (2002) suggested that temperament is comprised of several components (e.g., emotional reactivity and self-regulation) existing on continua where one extreme represents positive adjustment and the other represents pathology (e.g., anxiety disorders and ADHD). As such, this literature may be useful in better understanding the parenting behaviours of parents of children with ADHD.

Parents of children with a difficult temperament are often shown to use more negative parenting strategies (Belsky, 1984; Grolnick & Pomerantz, 2009). Additionally, there is evidence that parents of children with difficult, or hard-to-please, temperaments feel less competent in their parenting abilities, experience greater parenting stress, and use less effective discipline strategies (Abidin, 1990; Pinderhughes et al., 2000). Moreover, longitudinal investigations have demonstrated that a difficult temperament and parents’ reactions to their child interact to produce incremental increases in negative parenting strategies, such as the use of psychological control (Skinner, Johnston, & Snyder, 2005).

Disability.

As mentioned previously, having a child with a physical, cognitive, learning, or behavioural disorder is often associated with heightened parenting stress (Abidin, 1992; Deater-Deckard, 2004; Solem, Christophersen, & Martinussen, 2011). As well, and perhaps not surprisingly given the associations between stress and parenting practices, there is evidence of differences in parenting practices when comparing parents of children with a disability to parents of children with no known disability. For example, there is empirical support indicating that mothers of children with spina bifida, a birth defect resulting in physical challenges, demonstrate higher levels of psychological control compared to mothers of children without a congenital disorder (Holmbeck, Shapera, & Hommeyer, 2002). As well, there is evidence suggesting that parents of children with behavioural disorders, such as ODD and CD, engage in more harsh and less consistent parenting practices (Johnson, 1996). Several studies have also identified links between lower parental support, higher psychological control, and greater incidences of internalizing disorders (e.g., anxiety and depression; McLeod, Weisz, & Wood, 2007). Importantly, the direction of effects between perceived parental behaviours, disability status, and adjustment outcomes has not been determined (Wijsbroek, Hale, Raaijmakers, & Meeus, 2011).

Interactions between Factors

Longitudinal studies have provided strong evidence that the relationship between parent factors (e.g., parental beliefs and parenting stress), parenting behaviours (e.g., support, behavioural control, and psychological control), and child factors (e.g., behaviour problems) is bidirectional (Baker, McIntyre, Blacher, Crnic, Edelbrock, & Low, 2003; Barber et al., 2006; Kotchick & Forehand, 2002). According to both the empirical and theoretical bodies of literature, characteristics of the parent, such as personality and beliefs, influence parenting; however, parents' ongoing life experiences also affect their parenting behaviours (Belsky, 1984). Because children are an important part of parents' life experiences, they may also have an indirect influence on parenting behaviours.

There is substantial evidence indicating that parents who experience stress related to the parenting role are more likely to use psychologically controlling behaviours with their child/children (Deater-Deckard, 2004), and parents of children who engage in externalizing behaviours (e.g., aggression) experience greater parental stress (Rogers, Wiener, Marton, & Tannock, 2009). Therefore, it is likely that these negative features feed off one another and create a self-perpetuating (i.e., difficult to break) cycle.

Assessing Parenting

As previously mentioned, varieties of ways to assess parenting are found throughout the literature. The dominant methods include observation, interviews, and standardized questionnaires or rating scales (Smith, 2011). Additionally, within each method, different studies view the parent, child, or other family member (e.g., sibling) as the optimal informant. For the purposes of this paper, the remaining sections will focus on studies where questionnaires and ratings scales completed by parents and/or children were the primary data collection method.

Though increasingly common, studies of parenting behaviours rarely include ratings from multiple informants. Of the studies that have included multiple informants (e.g., two parents, parent and teacher, parent and child, etc.) agreement between informant ratings of parenting practices typically range from weak to moderate associations (De Los Reyes, 2011). Of particular interest for the current study are investigations that have included both parents' and children's reports of parenting behaviours. For instance, a large (N = 600 parent child-dyads) multitrait-multimethod (MTMM) investigation of parenting conducted by Kuppens, Grietens, Onghena, & Michiels (2009) found weak correlations between parent (mother) and child reports of psychological control ($r = .13$, $p < .01$), and small correlations between parent and child reports of both behavioural control ($r = .10$, $p < .05$) and parental support ($r = .26$, $p < .001$). Notably, although the p values here would be considered significant in many studies, they serve as a reminder of the importance of considering effect sizes for practical significance, particularly with large sample sizes (Kerlinger & Lee, 2000, Chapter 12). Similarly, Tein, Roosa, & Michaels (1994) found low to moderate levels of agreement between parents' and children's reports of parental behaviours (r = .13 to .36). Tein and colleagues (1994) explained the relatively low level of agreement: "... it may be that parents and children simply did not share the same definitions of, experiences of, or sensitivity to, parenting behaviours" (p. 350).

In the past, weak to moderate associations between parent and child ratings of parenting behaviours were often treated as measurement error in subsequent analyses, and were sometimes used as a criticism of instruments themselves (De Los Reyes, 2011). More recently, several researchers have suggested that rather than conceive of discordance as an anomaly, it be reconceptualised and considered as a variable in its own right (Smith, 2011). In fact, because the parent and child both experience the relationship from a different perspective, Maurizi and colleagues (2012) argue that to aggregate their responses or treat discordance as measurement error ignores the distinctiveness of their ratings and may provide an incomplete or inaccurate measure of the relationship. Further supporting that parents and children view parenting behaviours "through two different lenses" (McElhaney, Porter, Thompson, & Allen, 2008, p. 209) are findings that indicate that their individual reports differentially predict outcomes, such as relationship quality and internalizing problems (Barry, Frick, & Grafeman, 2008).

There is substantial variability in how previous studies have measured the level of agreement/concordance, or disagreement/discordance, between parent and child reports of parenting behaviours. The most common measurements of parent-child agreement include calculations of percentage agreement (Laniado-Laborin, Candelaria, Vilasenor, Woodruff, & Sallis, 2004), directional difference scores (Guion, Mrug, & Windle, 2009), absolute difference scores (Fung & Lau, 2010), and mean differences (paired sample *t* tests; Devore, 2006). Despite the interesting findings these methods have yielded, they raise the issue of whether variations in parents' and children's reports of parenting are quantitative (i.e., they are seeing different amounts of the same behaviours) or qualitative (i.e., they interpret the same behaviours differently; McElhaney, Porter, Thompson, & Allen, 2008).

In a review of strategies for collecting data from multiple sources with multiple methods, and dealing with discrepancies between responses from different sources, Holmbeck, Li, Schurman, Friedman, & Coakley (2002) highlighted the following: (a) data from each source/method is kept in its original form (disaggregated); (b) the data from multiple sources may be aggregated by summing standard scores; (c) aggregating scores using a latent variable; and (d) additional variables are created using the discrepancies, which can be used as either independent/predictor or dependent/outcome variables. Holmbeck and colleagues (2002) discuss the advantages and disadvantages of each approach and support the concerns raised by De Los Reyes (2011) regarding the second and third approaches, as the aggregation of data from multiple sources "does not distinguish between shared and unshared variance" (p. 10).

Summary

In sum, the current body of literature pertaining to parenting and parent-child relationships supports that there are three core dimensions of parenting that differentially influences the child. Additionally, there is evidence that various characteristics of the family, parent, and child interact to determine parenting behaviours and the effects these parenting behaviours have on the child.

Of the many factors examined in the socialization literature, there are several recurrent themes. Briefly, it seems that having a child with a difficult temperament, along with social and academic difficulties, is associated with increased parental stress.

Heightened parental stress is associated with lower feelings of parental competence, and all of the factors mentioned here have been shown to predict negative parenting practices. Furthermore, longitudinal investigations suggest that this is a bidirectional process whereby negative parenting practices are also associated with later behavioural problems, difficulties in peer relationships, an explosive temperament, and lower academic achievement (Barnett, Shanahan, Deng, & Haskett, 2010; Hassal, Rose, & McDonald, 2005; Johnston & Jassy, 2007).

The following sections provides an introduction to Attention-Deficit/Hyperactivity Disorder in children, followed by an overview of the literature on parenting practices and related factors within the specific context of parent-child relationships in families of children diagnosed with ADHD.

Attention-Deficit/Hyperactivity Disorder

Description and prevalence.

Attention-Deficit/Hyperactivity Disorder (ADHD) is a complex and prevalent disorder, affecting approximately 3 to 7 % of children (American Psychiatric Association, 2000) with most estimates indicating that it affects males at three to 10 times the rate of females (Barkley, 2006). The primary symptoms of ADHD include a persistent pattern of developmentally inappropriate levels of inattention and/or impulse control (Mash & Barkley, 2006). To meet the DSM-IV diagnostic criteria for either ADHD Predominantly Inattentive type or ADHD Predominantly Hyperactive-Impulsive type, a child must present with 6 out of 9 symptoms of *inattention* (e.g., “is often easily distracted by extraneous stimuli”) or *hyperactivity-impulsivity* (e.g., “often fidgets with hands or feet or squirms in seat", "often has difficulty awaiting turn"), respectively. Additionally, symptoms must persist for at least 6 months and be present prior to the age of 7 years. Children who meet the criteria for both the *inattentive* and *hyperactive-impulsive* subtypes are coded as ADHD Combined Type (APA, 2000). The developmentally inappropriate levels of inattention and/or hyperactive/impulsive behaviours characteristic of ADHD are displayed across situations, and result in impairments in social, academic and/or family functioning (Johnson & Reader, 2002). There is substantial evidence that the etiology and course of ADHD result from interactions between various biological and environmental factors (Conners, 2006; Pluess & Belsky, 2009).

Notably, comorbid diagnoses are extremely common in children with ADHD. For example, in a study of parent and child reported quality of life in children aged 6 to 17 years, Klassen, Miller, and Fine (2006) found that 43.1% of their ADHD sample had a comorbid Learning Disability and 27.6% had a comorbid diagnosis of ODD or Conduct Disorder. Similarly, a recent multimodal treatment study of ADHD in Canada and the United States indicated that 64% of children with ADHD have at least one comorbid disorder (Jensen et al., 2001). This means that only 33% of children with ADHD have ADHD alone.

Associated features of ADHD.

A developmental psychopathology framework is often applied to conceptualizing the characteristics of ADHD, how they develop over time, and how various factors (e.g., biology and familial relationships) affect this development (Johnston & Mash, 2001). A consortium of international researchers released a consensus statement on ADHD in 2002 urging other researchers, clinicians, and the public to recognize that ADHD is a valid disorder with clear genetic origins and neuropsychological characteristics that result in adverse outcomes for the individual and their families. However, they also highlighted that the genetic tendencies are expressed in interaction with the environment and that, over time, the outcomes of this interaction is a major determinant of developing associated disorders (e.g., ODD and CD) and negative outcomes (e.g., substance abuse, unemployment).

Academic achievement.

One of the most prominent, or perhaps earliest to be noticed, symptoms of ADHD is poor academic performance in grade school (Connor, 2002). Though the etiology of ADHD indicates changes in symptomatology across developmental stages, one of the most consistent findings is the negative impact the symptoms have in the areas of academic and employment success. For example, a meta-analysis of academic achievement in children, adolescence, and adults with ADHD found medium to large effect sizes for the impact of ADHD on academic performance (Frazier, Youngstrong, Glutting, & Watkins, 2010), which the authors used as a point to demonstrate the significant impact ADHD has on academic performance across developmental stages.

Interpersonal relationships.

There is a rapidly growing body of literature indicating that children with ADHD demonstrate poor social acuity related to interactions with their peers. Specifically, investigations have found that children with ADHD are more likely to show a positive bias, referred to as the positive illusory bias, in their perception of these relationships (Emeh, 2012). In social interactions with their peers, children with ADHD often report perceiving the interaction as more positive than the other child reports and tend to report greater social acceptance compared to what their peers, parents, and/or teachers report (Owens, Goldfine, Evangelista, Hoza, & Kaiser, 2007). Additionally, Gerdes, Hoza, and Pelham (2003) found that this positive bias might broaden and apply to other relationships, such as how children with ADHD perceive their relationship with their mothers. In the study conducted by Gerdes and colleagues (2003), though parents of children with ADHD reported a more negative perception of the parent-child relationship than parents in a comparison group, children with ADHD did not differ from the comparison group in their reports of perceived parent-child relationship quality.

Parent-child relationships and ADHD.

Given that several of the characteristics of the child associated with negative parent-child relationships are consistent with characteristics of ADHD (e.g., difficult temperament, disability), it is not surprising that studies have found differences in the parenting practices of parents of children with ADHD and parents of children with no presenting concerns (Gerdes et al., 2007; Rogers, Wiener, Marton, & Tannock, 2009). Investigations of the interactions between parents and children, or adolescents in particular, often indicate elevated occurrences of negative, aggressive, and less conflict-resolving behaviours (Grolnick, 2003; Li & Lee, 2012; Wells, et al., 2000).

Parenting Children with ADHD

As with any disorder, parenting a child with ADHD introduces unique challenges and circumstances. In particular, the behaviours, academic difficulties, and psychosocial difficulties associated with ADHD present distinctive considerations at the level of the child, parent, and broader social context.

While there are only a limited number of studies investigating the dimensions of parenting described above in parents of children with ADHD (e.g., Lifford, Harold, & Thapar, 2008; Rogers, Wiener, & Tannock, 2009), much more is known about differences in certain moderating and antecedent variables in comparison to parents of children with other disabilities and parents of children with no disability. Characteristics of the parent-child relationship and parenting practices in families of children with ADHD are of particular interest to the present study and are discussed in the following sections. Specifically, empirical studies conducted in the past decade related to parental stress, parental beliefs, and parenting practices in families of children with ADHD are highlighted.

Parenting children with ADHD: Parenting stress & parental beliefs

Parents of children with ADHD, particularly mothers, often report significant stress related to the parenting role (Abidin, 1992; McLaughlin & Harrison, 2006; Theule, Wiener, Tannock, & Jenkins, 2010). As previously noted, externalizing child problem behaviours, such as hyperactivity and aggression, are associated with increased parenting stress. Given the fact that externalizing problem behaviours are dominant symptoms of ADHD, particularly the hyperactive-impulsive subtype, it seems reasonable to assume that parents of children with ADHD would experience and report elevated levels of parenting stress. Studies investigating parenting stress in parents of children with ADHD consistently find that parents report experiencing significantly greater parenting stress than parents of children with no concerns (Duchovic, Gerkensmeyer, & Wu, 2009; Johnson & Mash, 2001; Solem, Christophersen, & Martinussen, 2011). Additionally, several studies have found that parents of children with ADHD endure more stress related to their role as parents compared to parents of children with other disabilities, even parents of children with related disorders, such as learning disabilities (Baker & McCal, 1995). It is less clear, however, how the parenting stress experienced by parents of children diagnosed with ADHD interacts with characteristics of the parent, child and family, and what impact it has on parenting practices, the parent-child relationship, and subsequently on the child.

McLaughlin and Harrison (2006) examined the role of maternal and child factors played in the parenting practices of 150 mothers of children diagnosed with ADHD and found that parental sense of competence contributed unique variance in predicting less effective parenting practices. Expanding on these findings, Rogers and colleagues (2009) found that parents of children with ADHD experienced greater parental stress, which was associated with a low sense of competence in parenting abilities and more controlling parenting practices. Together, these findings suggest that both stress and sense of competence influence the parenting practices of parents of children with ADHD. However, we do not fully understand how these factors interact or what their impact is on the parent-child relationship and developmental course of ADHD.

Parenting children with ADHD: Parenting practices

In a large scale study comparing the parent and child reports of perceived parent-child relationship quality in children with and without ADHD, Gerdes and colleagues (2007) found that children with ADHD perceived their parents as being more power assertive (e.g., frequent yelling and spanking) than did children in the comparison group. This study also found that mothers' of children with ADHD reported greater incidences of depression, and though the ADHD status of the child alone did not predict maternal warmth, mothers of children with ADHD who also indicated elevated depressed mood reported perceiving themselves as less warm than mothers of children with no diagnosis.

Several studies have found that the difficult-to-manage behaviours that children with ADHD often display are associated with harsh and punitive methods of parenting (Johnston & Jassy, 2007; McKee et al., 2004). There is also evidence that parents of children with ADHD may overreact to uncooperative behaviours demonstrated by their children (Morgan, Robinson, & Aldridge, 2002). Moreover, longitudinal investigations have shown that these overreactions elicit further difficult behaviours from the child, creating a cycle whereby the parent adopts a set of negative parenting practices (Drabick, Gadow, & Loney, 2008). However, some researchers argue that the parenting practices regarded by some as "negative" are inevitable responses to ADHD-related behaviours, and high levels of parental control are optimal in the context of this disorder (Grolnick, 2003).

Methodological Considerations relevant to the Parenting Literature

A significant issue with the parenting literature is that researchers often discuss findings as being contradictory when in fact they are comparing findings of studies that have used the same measures without consideration for the importance of age and/or developmental stage (Smith, 2011). Additionally, though the three dimensions of parenting discussed in this paper are well established, the diverse methods used to study their effects have yielded many inconsistent findings. According to Barber, Stolz, and Olsen (2005), many of the inconsistencies documented relate to the fact that these parenting constructs are at times aggregated (i.e., the typological approach), and when separate dimensions are assessed, they are not always all included (i.e., only two of the three core dimensions are measured). Along the same vein, Soenens and Beyers (2012) point out that one of the greatest problems that exists in the parenting literature is that “different researchers use different definitions and measures of variables related to [parenting behaviours]” (p. 245).

A related concern within the parenting literature is the tendency, at least historically, to rely on single-source and/or single-method designs (Kuppens, Grietens, Onghena, & Michiels, 2009). This is problematic when the purpose of the study is to evaluate research questions involving constructs as complex as the parent-child relationship. A final issue with the parenting literature, specifically as it applies to parenting children with ADHD, is that a substantial proportion of previous studies focus on examining specific parenting behaviours and related factors, but do so without the inclusion of a comparison group (Harvey, 2000). Together, these concerns highlight the need for future studies to consider the validity and specificity of the measures used, and to be mindful of study limitations before generalizing findings.

Summary of Literature Reviewed

Of the characteristics of the parent, the link between high levels of parenting stress and dysfunctional parenting behaviours is well established in the literature (Morgan, Robinson, & Aldridge, 2002). The symptoms of ADHD are consistent with the child factors discussed previously that are associated with dysfunctional parenting. Additionally, there is substantial evidence indicating that children with ADHD are at heightened risk for developing internalizing and externalizing disorders (Roberts, Joe, & Rowe-Hallbert, 1992). Considering that parents of children with ADHD are more likely to report heightened parenting stress, and may feel less in control of their children's behaviours, it is not surprising that parents of children with ADHD may engage in less effective discipline strategies. Furthermore, due to the difficulties these children present with, it is common for parents of children with ADHD to feel less support from family, friends, and community (Barnett, Shanahan, Deng, Haskett, & Cox, 2010). Together, these findings suggest that parents of children with ADHD may experience additional stress, feel less supported, and have daily interactions with their children that are more disagreeable than do parents of children with no diagnosis.

Despite the relatively extensive literature on the influences of parenting practices, few studies have examined the parenting behaviours of parents of children with ADHD. Moreover, in the general parenting literature, only a small number of studies have examined parenting behaviours, parenting stress, and parental beliefs simultaneously.

Fewer still have considered how parents' beliefs and level of parenting stress influence the dynamics of the parent-child relationship when a child has a diagnosis of ADHD. Again, because children with ADHD are at elevated risk for a number of negative developmental indicators, it seems that an important component of supporting them is to support their parents.

Rationale for the Present Study

Although the previous sections provide only a brief review of the parenting literature, it is clear that parenting practices play an important role in determining who a child becomes later in life. What is particularly evident based on this review is that we are quite limited in our understanding of the parenting practices, including their determinants and outcomes, in families of children with ADHD. This is unfortunate as children with ADHD are at elevated risk for a number of developmental indicators, and there is a growing understanding of the important role of the parent-child relationship in this population. Identifying similarities and differences in families with and without ADHD is an important first step in understanding how best to support both parents and children affected by ADHD and improve the long-term outcomes for these individuals.

Research Questions and Hypotheses

To fulfill the proposed goals, this study will address the research questions listed below. Though there is sufficient converging evidence in the literature to formulate hypotheses for some of the research questions, the literature was either insufficient or involved too many conflicting findings to propose theoretically and empirically supported hypotheses for all questions. Where there is sufficient previous literature, specific hypotheses related to the research questions are offered. The remaining questions are considered exploratory.

The first research question is as follows: Do the perceived parenting practices, levels of parenting stress, and parental beliefs of parents of children diagnosed with ADHD differ from those reported by parents of children with no diagnosis? Because the findings of previous studies investigating parenting of children with ADHD, though limited, are relatively inconsistent with respect to parenting behaviours on three core parenting dimensions (Johnston & Mash, 2001; Modesto-Lowe, Danforth, & Brooks, 2008; Rogers, Wiener, Marton, & Tannock, 2009), no specific hypotheses are provided. However, as this literature review has shown, the link between the behaviours and effects associated with ADHD and elevated stress for parents of these children is well established. As such, it is anticipated that parents of children with ADHD will report higher levels of stress than parents of children without ADHD (Hypothesis 1a). Related to the previous hypotheses, it is hypothesized that the parental beliefs of parents with ADHD will trend towards an external parental locus of control, such that they will report attributing less responsibility for children's behaviours to themselves/parents (i.e., parent lacks responsibility; Hypothesis 1b), and will also report less personal control over their children's behaviours (Hypothesis 1c).

The second research question is examined for each group separately and asks: Do parents' and children's reports of parenting behaviours indicate agreement or disagreement? Based on the conflicting findings regarding the level of agreement between parent and child reports in both non-clinical and clinical (Holmbeck, Li, Schurman, Friedman, & Coakley, 2002; Smith, 2011; Yahav, 2006), no predictions are made for this question.

The third research question asks: Does the level of agreement between parent and child reports of perceived parenting behaviours differ between these two groups? Having made no predictions regarding the within-group, specifically within-dyad, agreement of perceived parenting behaviours, no hypotheses are made for this final question.

Finally, the last research question for this study asks: What are the relations, if any, between perceived parenting practices, parental stress, parental beliefs, and characteristics of the parent, child and family? Considering the relatively consistent findings in the general parenting literature, it is anticipated that regardless of group membership, child's age will be negatively associated with behavioural control and positively related to psychological control (Hypothesis 2a). Additionally, and again irrespective of group, it is predicted that significant relationships between parenting stress, parental beliefs, and parenting behaviours will emerge. For example, parenting stress will be associated with a more external parental locus of control (i.e., parent lacks responsibility and parent lacks control; Hypothesis 2b), lower perceived parental support (child reported; Hypothesis 2c), and greater psychological control (child reported; Hypothesis 2d). No other predictions are made regarding the relations between independent and dependent variables.

CHAPTER THREE: METHODS

The purpose of this study was to compare and evaluate parenting behaviours and associated antecedent factors (e.g., characteristics of the parent, characteristics of the child, and demographic variables) in families that include a child with ADHD and families without a child with any psychological/psychiatric diagnosis. Chapter 3 will highlight the research methodology and procedures used in the present study; this is achieved through the following sections: research design, sampling and participants, materials, procedures, and the analysis plan used to address the research questions and hypotheses.

Research Design

The present study employs a non-experimental survey research design to investigate relationships among characteristics of the parent, family, and child – and parenting behaviours, parenting stress, and parental beliefs – and examine potential differences in these variables and relationships in families that either do or do not include a child diagnosed with attention-deficit/hyperactivity disorder (ADHD). Based on a review of the literature and consideration of the populations from which the samples were drawn, parent, child, and family variables were selected to serve as the independent variables. As well, three parenting dimensions (support, behavioural control, and psychological control), parenting stress, and two parental beliefs (beliefs about parental responsibility and parental sense of control over child's behaviour) served as dependent variables. The research measures, including demographic characteristics and parent and child reports of the dependent variables, were compiled to form online surveys. The instruments used to measure each variable were selected based on: (a) availability of the development and validation of the instruments with evidence of strong psychometric properties, (b) evidence of accurately measuring the constructs of interest as operationalized in Chapters 1 and 2 (i.e., validity), and (c) use in previous studies with populations comparable to those targeted in the present study. Participants completed all questionnaire items online.

Sampling and Participants

Sampling.

This study included two samples: one sample consisted of the clinical study group (i.e., parents, or parent-child dyads, of children diagnoses with ADHD) and the second sample was a comparison group of parents of children with no diagnosis. The target populations, and therefore recruitment strategies, differed between the two samples; however, common elements included: (a) families living in one of four medium to large Western Canadian cities; (b) one parent and one child from the family was able and willing to participate; (c) the child was between 7 and 16 years of age at the time of participation; (d) the child met the inclusionary for one of the two samples; and (e) the child did not meet the exclusionary criteria.

Clinical sample (ADHD-diagnosed group).

Participants for the ADHD-diagnosed group were achieved using a purposive convenience sampling approach (i.e., non-probability). Specific inclusionary and exclusionary criteria were described in the recruitment materials, or to parents whenever possible, and guided the targets of recruitment efforts.

The inclusionary criteria included that the child had a previous diagnosis of ADHD from a psychologist, psychiatrist, or pediatrician. Exclusionary criteria included children with a full-scale intelligence quotient (IQ) below 80; a previous diagnosis of a pervasive developmental disorder; and/or below average reading abilities that would prevent them from understanding and completing the questionnaire items independently. However, because some estimates suggest that the rate of comorbidities in children and adolescents with ADHD may be as high as 2/3 of all individual cases (Jensen 2001), not all comorbidities were exclusionary criteria. To reflect the comorbid diagnoses most often associated with ADHD, and consistent with previous studies (Modesto-Lowe, Danforth, & Brooks, 2008; Takeda, Ambrosini, deBerardinis, & Elia, 2012), children diagnosed with behavioural disorders (e.g., Oppositional Defiant Disorder, Conduct Disorder), Learning Disorders, and/or Anxiety Disorders were not excluded from participating.

Initial recruitment for the ADHD-diagnosed group involved inviting former clients of a local psychoeducational assessment clinic who, at the time of their assessment, consented to future contact for research purposes. This yielded six participants. To obtain a larger sample, brochures and advertisements were distributed to agencies, clinics, and learning centres that serve clients diagnosed with ADHD (see Appendix D for sample recruitment material). Additionally, the primary investigator attended parent support groups and a resource conference on ADHD to discuss the project with parents and provide them with information on how to participate, should they be interested. Finally, independent schools with programming for students with diverse learning needs were contacted. Those who agreed were asked to disseminate a notification about the study to the parents of their students.

Non-clinical sample (comparison group).

The comparison group was formed using a purposive sampling strategy. To specify, recruitment of the comparison group was purposive in that as individuals from the ADHD-diagnosed group responded to the invitation to participate, recruitment efforts were adjusted to target a similar demographic. For example, as the mean age and range of children in the ADHD-diagnosed group converged, recruitment efforts for the comparison group focused on independent schools in the four cities (i.e., Calgary, Lethbridge, Edmonton, and Vancouver). The sampling frame for the comparison group included parents, or parent-child dyads, of children between the ages of 7 and 16 years who had no clinical diagnosis and were not displaying behavioural or academic difficulties. Participants were recruited through posters and brochures displayed in coffee shops and community centres, referrals from parents in the ADHD-diagnosed group, and notifications in the weekly parent newsletter from an independent school. Responses to all invitations to participate resulted in a total of 55 parents and 38 children visiting the study's website.

Attrition and unusable data.

Of the 55 parents who visited the website, 11 participants were excluded from the final analyses. Of these 11 respondents, three were excluded because they only completed the demographic questions, and two only completed one of the seven pages containing survey items (i.e., dependent variables). One participant was excluded due to repeatedly being an extreme outlier, discussed further in Chapter 4. Finally, four parents were excluded because their children did not meet the inclusionary criteria and responses from one parent were not included in the study because their child met the exclusionary criteria (i.e., the child had been diagnosed with a pervasive developmental disorder).

Of the 38 children who visited the study's website, one individual entered no information, four children completed 10 or fewer of the 30 questionnaire items (33% or less completed), one child met the exclusionary criteria, four children did not meet the inclusionary criteria (see previous section), and one child provided an activation code that did not match a parent code. An additional child was excluded from the analyses because there was no variation in their responses and they completed the survey in less than two minutes, whereas the mean time taken by the remaining children to complete the survey was approximately 11 minutes. As such, it seems reasonable to assume that this participant had likely not read the questionnaire items before responding and their data was invalid.

Participants.

Participants in this study included a total of 77 parents and children. Specifically, 25 parents of children with a primary diagnosis of ADHD and 19 parents of children with no clinical diagnosis or concerns related to emotional, behavioural or learning disabilities (N = 44 parents). The two groups will herein be referred to as the ADHD-diagnosed group and the comparison group, respectively. For 14 families in the ADHD-diagnosed group and 13 families in the comparison group both a parent and the focus child participated in the study (total number of dyads, $N_{dyads} = 27$), while for the remaining 17 families only a parent participated. Independent samples *t*-tests indicated that there were no significant differences between the group where only a parent participated and the group where both the parent and child participated on any of the dependent variables (see Appendix B). As such, with the exception of analyses involving differences between parent and child ratings, scores from the full sample of 44 parents were used in all analyses. The demographic characteristics of the parent, family, and child described below reflect the total sample (N = 44).

Of the 44 parents who participated in this study, 90% (n = 40) were mothers and 10% (n = 4) were fathers, with an equal proportion of mothers and fathers in the ADHD-diagnosed and comparison groups (i.e., two fathers in each group). The difference between mothers and fathers as respondents in the current study is similar to what is typically found in the family literature and consistent with the proportion of mothers and fathers in an investigation of supportive and controlling parental involvement in children with ADHD conducted by Rogers, Wiener, Marton, and Tannock (2009). Additionally, independent samples *t* tests showed that mothers and fathers did not differ on any of the independent or dependent variables in this study (see Appendix B); therefore, as with Rogers and colleagues (2009), mothers and fathers were collapsed to form a single ‘parent’ sample to be used in all analyses.

The parent sample was comprised primarily of individuals of British Isles origins (47.7%), North American origins (13.6%), Western European origins (11.4%), East and Southeast Asian origins (9.1%), with the remaining individuals indicating Latin/Central/South American, Arab, South Asian, Eastern European, and French origins.

Of the parents participating directly in the study (versus the child's non-responding parent), the majority had completed high school (97%) and had some post-secondary education or training (86.4%).

The children in this study ranged in age from 7.5 years to 16.8 years of age (*M* = 11.4; *SD* = 2.6). Nineteen children in the ADHD-diagnosed group were male and six were female, while the comparison group included seven males and 12 females. A chi-square test of the proportion of males and females in each group was statistically significant, partial eta squared $\eta^2 = 6.9$, $p = 0.01$, one-tailed. Notably, the proportion of males and females in the ADHD-diagnosed group is a valid reflection of current gender ratio estimates, and similar to what has been found in recent studies of children with and without ADHD (e.g., Harvey, Danforth, Ulaszek, & Eberhardt, 2001; Rogers, Wiener, Marton, & Tannock, 2009).

Children in the clinically identified group had a previous diagnosis of ADHD from a psychologist (72 %), pediatrician (20 %), or psychiatrist (8 %). Twelve children had at least one other (comorbid) diagnosis (48%), including seven children diagnosed with a Learning Disorder, or Learning Disorders (LD; 28%), five children diagnosed with comorbid ADHD and Oppositional Defiant Disorder (ODD; 20%), four with an Anxiety Disorder (16 %), and one child with a comorbid diagnosis of Tourettes Syndrome (3.7%). The incidence of comorbid disorders found in the present sample is similar to previous studies (Harrison & Sofronoff, 2002). For example, in a study of parent and child reported quality of life in children aged 6 to 17 years, Klassen, Miller, and Fine (2006) found that 43.1% of their ADHD sample had a comorbid Learning Disability and 27.6%

had a comorbid diagnosis of ODD or Conduct Disorder. Similarly, a recent multimodal treatment study of ADHD in Canada and the United States indicated that only 33% of children with ADHD have ADHD alone, compared to 64% of children with ADHD and a comorbid disorder (Jensen, 2001). The ethnic composition of the children included in this study was similar to that of their parents. Child and family characteristics for each group and for the total sample are displayed in Table 1 and Table 2.

Independent samples *t* tests and chi-square analyses were conducted between the ADHD-diagnosed group and the TD group on all relevant demographic information (i.e., child gender, age, grade range, birth order, parent and child ethnicity, parent education level, marital status, and family structure). Results of these analyses, presented in Table 1 and Table 2, indicate that with the exception of gender, the ADHD-diagnosed and comparison groups did not differ on any of the demographic variables of interest.

Table 1

Child Demographic Characteristics for the ADHD-diagnosed and Comparison Groups

	ADHD-diagnosed (n = 25)		Comparison (n = 19)		Total (N =44)[a]		t or χ^2	p [b]
Child Characteristics								
Age – Mean (*SD*)	11.7	(2.5)	11.4	(2.6)	11.6	(2.5)	.461	.647
Gender							6.848	.014
Male	19	(76%)	7	(36.8%)	26	(59.1%)		
Female	6	(24%)	12	(63.2%)	18	(40.9%)		
Birth Order							1.57	.66
Only child	4	(16%)	6	(31.6%)	10	(22.7%)		
Youngest	8	(32%)	5	(26.3%)	13	(29.5%)		
Middle	4	(16%)	2	(10.5%)	6	(13.6%)		
Eldest	9	(36%)	6	(31.6%)	15	(34.1%)		
Comorbid conditions[c]	12	(48%)	-		-			
Learning Disorder	7	(28%)	-		-			
ODD	5	(20%)	-		-			
Anxiety Disorder	4	(16%)	-		-			
Grade Range								
< 50 - 60 %	7	(28%)	0		7	(15.9%)	8.22	.145
60-70%	8	(32%)	7	(36.8%)	15	(34.1%)		
70-80%	5	(20%)	5	(26.3%)	10	(22.7%)		
80-90%	4	(16%)	7	(36.8%)	11	(25%)		
90-100%	1	(4%)	0		1	(4%)		

Note: Values are displayed as number (%) unless otherwise noted.

[a] Total *N* refers to the full sample (i.e., the children of parent participants); twenty-seven children also participated.

[b] *p* values here are one-tailed, with significance indicated by * p < .05; [c] Five children had more than one comorbid diagnosis.

Table 2

Parent and Family Demographic Characteristics for the ADHD-diagnosed and Comparison Groups

	ADHD-diagnosed group (n = 25)		Comparison Group (n = 19)		Total (N =44)		t or χ^2	p [b]
Parent/Family Variables								
Mother responding	23	(92%)	17	(89.5%)	40	(90.1%)	.083	.585
Marital Status							3.07	.690
Married or common law	18	(72%)	16	(84.2%)	34	(77.3%)		
Single	1	(4%)	1	(5.3%)	2	(4.5%)		
Divorced or separated	6	(24%)	2	(10.5%)	8	(18.2%)		
Family Composition							3.76	.440
Two parent	21	(84%)	18	(94.7%)	39	(88.6%)		
Single parent	4	(16%)	1	(5.3%)	5	(11.4%)		
No. of children – Mean (*SD*)	2.2	(0.8)	2.1	(1.0)	2.1	(0.9)	.390	.698
Parent Education Level							9.41	.224
Some high school	0		1	(5.3%)	1	(2.3%)		
High school graduate	4	(16%)	1	(5.3%)	5	(11.4%)		
Certificate after high school	1	(4%)	3	(15.8%)	4	(9.1%)		
College or University	13	(52%)	7	(36.8%)	20	(45.5%)		
Graduate Degree	7	(28%)	7	(36.8%)	14	(31.8%)		

Note: Values are displayed as number (%) unless otherwise noted.
[a] The total *N* refers to the full sample (i.e., the children of parent participants); twenty-seven children also participated.
[b] *P* values here are one-tailed, with significance indicated by * $p < .05$.

Measures

Based on the research questions and hypotheses for this study, several dependent and independent variables were chosen as the focus. The primary independent variables of interest in this study, obtained from the demographics questionnaire described below, were the age of the child, child gender, child's grade range, and birth order; the family and parenting variables of interest were family structure and number of children in the family. The dependent variables in this study included: (a) parent and child perceptions of three dimensions of parenting (i.e., support, psychological control, and behavioural control), (b) parenting stress, and (c) parental beliefs (i.e., sense of control over child's behaviour and beliefs about parental responsibility). The following sections describe the measures used to evaluate the independent and dependent variables in the present study. A description of each measure, the internal consistency reliabilities (coefficient alphas), and suggestions for the interpretation of high and low scores is provided in Table 3. The questionnaire items for each scale and/or subscale used in the present study are provided in Appendix A.

Demographic information.

Parent participants completed a demographics questionnaire to provide information related to characteristics of the parent, child, and family. This questionnaire included information about the age of the child, gender of the child, ethnicity, birth order, and grade range, as well as parental marital status, parental education level, and family structure. Parents in the ADHD-diagnosed group completed an additional section to gather information related to the child`s diagnosis including the specific diagnosis, the date of the diagnosis, and the professional who provided the assessment and diagnosis/diagnoses. The ethnic origins and marital status classifications included in the demographic questionnaire were adopted from the 2006 Statistics Canada Census.

Dimensions of parenting.

Parent and child participants completed the Schludermann and Schludermann revision (1988, personal communication) of the Children's Report of Parent Behavior Inventory (CRPBI; Schaefer, 1965). The revised version of the CRPBI (i.e., CRPBI-30) was used to assess perceptions of three parenting behaviours, each associated with one of the core dimensions of parenting: Parental Support (i.e., Acceptance versus Rejection subscale), Psychological Control (i.e., Psychological Control versus Psychological Autonomy subscale), and Behavioural Control (i.e., Firm versus Lax Control subscale). The shorter CRPBI-30 was selected for this study, rather than the original, with consideration for the young age of child participants and the inclusion of children with ADHD who likely would have difficulty providing reliable responses on a longer survey.

Schludermann and Schludermann (1988) reported that the factor structure of the shorter CRPBI-30 is similar to the original instrument and correlations between corresponding dimensions were r = .95, r = .94, and r = .94 for the Acceptance (versus rejection), Psychological Control (versus psychological autonomy), and Firm Control (versus lax control), respectively. This indicates that, with respect to the three dimensions of interest, scores on the shorter CRPBI-30 give equivalent information to the original longer form (Schludermann & Schludermann, 1988). The CRPBI-30 was deemed appropriate for the purposes of this study as it measures specific dimensions of parenting, and includes a reliable measure of each of the three parenting dimensions that have dominated the literature for several decades. O'Connor (2002) pointed out that though each dimension is worthy of study in its' own right, due to the interactions and bidirectionality of parenting practices, it is neither possible nor prudent to assess dimensions of parenting in isolation.

Each of the three subscales from the CRPBI-30 consists of 10 items, with parents and children reporting their perception of parental support and control on a 3-point Likert-type scale from 1 = "*Not like her (him)/me"* to 3 = "*A lot like her (him)/me"* to reflect how well each item described themselves/their parent (Barber, Stolz, & Olsen, 2005). Because the original scale was designed to measure parenting from the child's perspective, items and response choices were modified for the parent survey following the rewording procedures (i.e., slight grammatical changes) used by Holmbeck, Shapera, and Hommeyer (2002). Each subscale has a possible minimum score of 10 and a maximum score of 30, with 20 being the neutral point (Schludermann & Schludermann, personal communication, 1988).

Test-retest reliability based on a sample 443 male and female children revealed correlations ranging from .79 to .89 for ratings of mothers and fathers across the three dimensions (Schludermann & Schludermann, 1988). Data from the same sample indicated adequate internal consistency with alpha values ranging from .63 (Firm Control) to .76 (Acceptance).

Child participants were asked to complete the measure with regard to the parent completing the parent survey (i.e., if their mother was completing the parent portion, questions were worded to focus on their mother rather than their father).

Parental support.

The Acceptance subscale from the CRPBI-30, completed by the parent and child, was used to measure parental support. High scores on this scale reflect positive parent-child relationships with the respondent feeling that the parent is responsive and accepting of their child (i.e., high acceptance/low rejection). A previous study examining parent-child relationships in children with ADHD found the subscale had good internal consistency ($\alpha = .87$). Similarly strong internal consistency coefficients (Cronbach's alpha) were found in this study with values for coefficient alpha of.84 and .88 for parent and child reports, respectively.

Parental psychological control.

The 'psychological control vs. psychological autonomy' subscale from the CRPBI-30, completed by both the child and parent, measured perceived parental psychological control. The items on the Psychological Control subscale assess perceptions of parenting behaviours that are dominating and intruding with respect to what the child thinks and feels. High scores on this subscale reflect intrusive parenting, greater use of manipulation, and a tendency to use guilt as a means of controlling the child. In this study, the Psychological Control subscale demonstrated high internal consistency with alpha values of .81 and .85 for parent and child reports, respectively.

Parental behavioural control.

The ‘firm control vs. lax control’ subscale from the CRPBI-30, completed by both the child and parent, measured parental behavioural control. The items on the Firm Control subscale measure the parenting behaviours aimed at controlling the child’s activities, a dimension often referred to as ”structure” (Grolnick, 2003). High scores on this scale reflect a parent perceived, by either themselves or their child, as having several strict rules. Notably, excessively high scores on this subscale have been associated with a level of control that becomes psychological in nature, particularly as children transition into adolescents and then adulthood (Galambos, Barker, & Almeida, 2003). Similar to what was reported in previous studies (Chao & Aque, 2009) the internal consistency of the Firm Control subscale was lower than the other subscales, but still fell in an acceptable range (α = .74 and .75 for parent and child reports, respectively).

Parenting stress.

Parenting stress was measured using the 18-item self-report Parental Stress Scale (PSS) (Berry & Jones, 1995) which includes both positive (e.g. emotional benefits and self-enrichment) and negative (e.g. demands on resources and restrictions) themes of parenthood. Items are rated on a 5-point response format ranging from 1 = “*Strongly Disagree*” to 5 = “*Strongly Agree*” and combined to yield a total parental stress score where higher scores represent greater parental stress.

The validity of the PSS has been demonstrated in several ways. For example, significant correlations were found between PSS scores and a measure of general stress, the Perceived Stress Scale, r (233) = .53, p < .01 (Berry & Jones, 1995). As well, mothers of children receiving treatment for behavioural problems obtained significantly higher scores on the PSS compared to a group of mothers of children with no presenting concerns (Berry & Jones, 1995).

Notably, Berry and Jones (1995) reported moderate inter-item correlations with a mean of .23. Similarly, mean item-whole correlations ranged from .27 to .59 with a mean of .43. However, the scale developers commented that the expected item-total correlations were not anticipated to be high, due to the broad construct (i.e., parental stress) being measured. Still, the internal consistency ($\alpha = 0.83$) reported by Berry and Jones (1995) indicates that it is a reliable measure. In the present study, the PSS demonstrated similarly strong internal consistency, with coefficient alpha measured at .88.

Parental beliefs.

Two subscales ("Parental Responsibility" and "Control of Child's Behavior") from the Parental Locus of Control Questionnaire (PLOC; Campis, Lyman, & Prentice-Dunn, 1986) were selected because of their fit with the constructs of interest in the present study. Specifically, these two subscales were used to measure the parental beliefs of attribution and feelings of control over child's behaviour.

The PLOC, in part, based on Rotter's (1966) Internal-External Scale, is a frequently used measure in clinical studies (Hagekull, Bohlin, & Hammarberg, 2001). Though some studies use the total score, the PLOC is considered a multidimensional tool consisting of five subscales. Acknowledging the need to differentiate the five PLOC subscales from other control constructs and measures, Hagekull and colleagues (2001) focused on understanding the conceptual basis of these two PLOC subscales.

Each subscale is a 10-item self-report measure. In the original version of the scale, all items were rated on a 5-point Likert type scale ranging from "*Strongly Disagree*" to "*Strongly Agree*". In the present study, the ratings were modified for the Parental Control subscale, as described below. The PLOC has been shown to be a psychometrically sound instrument for use in measuring parental locus of control in parents of older children (August, Braswell, & Thuras, 1998) and children as young as 33 months (Hagekull et al., 2001). Additionally, the PLOC has been shown to differentiate between parents reporting parenting problems and those without parenting problems, parents of children with behaviour problems and those of children with no reported behavioural concerns (Campis, Lyman, & Prentice-Dunn, 1986), and in comparisons of parents of children with learning disabilities and developmental delays (Jones & Passey, 2004). Roberts, Joe, and Rowe-Hallbert (1992) investigated the psychometric properties of the PLOC in parents of children with behavioural problems (i.e., ADHD and ODD) aged 2 to 12 years and found the scale to have adequate test-retest reliability (r = .829), strong internal consistency (α = .81), and validity with criterion measures of child coerciveness.

Parental responsibility.

Parents' beliefs related to the parental responsibility were measured using the 'Parental Responsibility' subscale from the PLOC. High ratings on this subscale are associated with a parent who believes that they are not responsible for their child's behaviour. As such, the Parental Responsibility subscale is referred to in this study as Parent Lacks Responsibility to reflect the construct it measures. Notably, unlike the second PLOC subscale used in this study, some Parental Responsibility subscale items are specific to the parent who is responding ("My child's behaviour problems are no one's fault but my own"), whereas other items tap more general beliefs about parental responsibility ("Parents whose children make them feel helpless just aren't using the best parenting techniques"). Campis, Lyman, and Prentice-Dunn (1986) reported the reliability of the Parental Responsibility subscale at a coefficient alpha of .79, which is lower than what was found in the present study (α = .84).

Control of child's behavior.

The Parent Control of Child's Behavior subscale from the PLOC measures parents' perceived control in relation to their child's behaviour. Hagekull, Bohlin, and Hammarberg (2001) suggest that this scale measures a unipolar construct similar to Bandura's (1989) conceptualization of self-efficacy and Ajzen's (1991) perceived behavioural control. Parents who feel unable to control their child's behaviour produce higher ratings on this PLOC subscale. The Parent Control of Child's Behavior scale, herein called 'Parent Lacks Control' to differentiate it from the CRPBI-30 control scales, has shown significant correlations with scales measuring parental self-efficacy and competence (Hagekull et al., 2001).

Compared to the Parental Responsibility scale, the original version of the 'Parent Lacks Control' subscale contains several modified adverbs in the question items (e.g., "My child's behaviour is often more than I can handle"). As Schaeffer and Presser (2003) point out, the use of modifying adverbs can lead to difficulty understanding what each question means for the individual. This is particularly true when the response items also include modifiers (e.g., strongly and/or somewhat ...agree, etc.). As such, the modifying adverbs were removed from all of these subscale items and the response scale was modified to a 4-point Likert scale ranging from 1 (*Never*) to 4 (*Always*) to improve the clarity of responses. For example, the above question was re-worded to read, “My child’s behaviour is more than I can handle.”

Taking the lead from Hagekull and colleagues (2001), it seemed equally necessary to differentiate the Control of Child’s Behaviour subscale (PLOC) from the other measures of control (CRPBI-30) included in this study. Based on an examination of the items on each scale and descriptions of each measure from previous studies, the important difference seems to be whether the focus is on behaviour or feelings. Specifically, the Firm Control subscale from the CRPBI-30 focuses on parents’ perceptions of specific parenting practices (i.e., the ‘what’ they are doing) whereas the control subscale from the PLOC appears to measure how effective they perceive their parenting behaviours to be (i.e., their sense of competence).

Campis, Lyman, and Prentice-Dunn (1986) reported the internal reliability of this subscale as having an alpha coefficient of .71. Additionally, the Parent Lacks Control scale has been used in several previous studies involving parents of children (ages ranging from 2 to 18 years) with ADHD, or behaviour problems, and has demonstrated internal reliabilities ranging from an alpha of .67 (Banks-Villegas, 1999) to .86 (Hassall, Rose, & McDonald, 2005). The internal consistency reliability observed in the present study indicates the scale is acceptably reliable ($\alpha = .73$).

Procedure

Upon receipt of ethical approval from the University of Calgary's Conjoint Faculties Research Ethics Board, parent-child dyads were recruited as explained earlier. Participants recruited from the psychoeducational assessment clinic were sent emails with links to the questionnaires, along with an activation code to be used by both members of the dyad. The purpose of the activation code was to link parent and child responses while maintaining anonymity and confidentiality. Individuals who responded to advertisements in school newsletters, online forums, and clinic offices and contacted the primary investigator expressing interest in participating were sent links, via electronic mail, to the parent and child questionnaires along with an activation code. The links took participants to the questionnaires posted on a secure (encrypted) internet site called Survey Monkey©. Participation was not compensated directly, though all participants had the option to provide contact information for entry into a draw for various gift certificates.

After reviewing the information and consent form, or assent form for children, participants were taken to the first page of questions with no more than 10 questions displayed per page. Parent participants completed the demographics questions, the CRPBI-30 (Acceptance, Firm Control, and Psychological Control), the PLOC subscales, and the PSS. Child participants completed the CRPBI-30 only.

Table 3

Descriptions of Research Measures, Reliabilities, and Interpretations of High and Low Scores

Scale/subscale	(α)[a]	Low score	High score	Sample item
CRPBI-30[b]				
Support	.84 (.88)	Low responsiveness to child's needs	Parenting aimed at making the child feel understood	"I am able to make my child feel better after he/she talks over his/her worries with me"
Psychological Control	.81 (.85)	Infrequent use of intrusive parenting practices	Often uses guilt and other means to control the child	"Brings up past mistakes when criticizing my child"
Behavioural Control	.74 (.75)	Parents who place few limitations on their child	Frequent setting of expectations and enforcement of rules	"I believe in having lots of rules and sticking with them" (Firm)
PSS	.88	Low parenting stress	Substantial stress resulting from role as parent	"It is difficult to balance different responsibilities because of my child"
PLOC		Internal parental LOC	External parental LOC	
Parental Responsibility	.84	Child's behaviours are related to the parent's efforts	Low parental responsibility for child's behaviours	"There is no such thing as good or bad children – just good or bad parents"
Parental Sense of Control	.73	Parent feels in control of their child's behaviour	Often feels unable to control child's behaviour	"My child's behaviour is sometimes more than I can handle"

[a] Coefficient alpha values are listed for parent and child separately as parent (child).
[b] Questions reworded for the child questionnaire.

Data storage.

Confidentiality and anonymity were, and are, primary concerns for this study. Participant confidentiality and the confidentiality of the data are protected by storing consent forms and related materials in a locked filing cabinet. The Survey Monkey© website where questionnaires were posted is a secure site and only the primary investigators have access to the password. As well, computers on which data are stored are located are in a locked room.

Electronic copies of the data will be retained for five years after any publication of the results; deleting it from the computer's hard drive after five years have elapsed will destroy all data. Any data stored in paper form will be destroyed through secured disposal.

Data analysis

Responses from the demographic form were first coded and entered into IBM® SPSS® Statistics version 20 using the coding guide presented in Appendix C.

Primary analyses.

The original plan of analysis for this study, with respect to group comparisons, was to conduct a MANOVA with group membership as the independent variable, and the individual survey subscales as each of the dependent variables. Unfortunately, despite efforts to attain a large representative sample, the sample sizes in this study (i.e., n = 25 and n = 19 for the ADHD and comparison groups, respectively) were too small to allow for any reasonable interpretation of a multivariate analysis. Therefore, it was decided that the most statistically robust way to address the research questions comparing the two groups on the dependent variables was through a series of independent samples *t* tests, using a Bonferonni correction for multiple analyses.

Next, to examine the agreement between parent and child perceived parenting behaviours, the association (Pearson's *r*) between their ratings on the CRPBI-30 were examined (i.e., 'intergenerational correlations' between parent and child-reports of parenting dimensions) for each group separately. Notably, there is some disagreement in the literature regarding how parent-child agreement should be measured. Several studies have examined interclass correlation coefficients (ICCs) to measure level of agreement (Fung & Lau, 2010); however, others, including the current study, have determined that ICCs may not be an accurate measure of agreement because the parent and child perceptions of parenting behaviours are treated as potentially separate variables.

To determine if parent and child reports of parenting behaviours differed from one another, paired-samples *t* tests (within group) will be conducted for each of the parenting dimensions measured. Next, to investigate group differences with respect to level of agreement between parents' and children's reports of parenting behaviours, independent samples *t* tests on the mean absolute difference scores at the subscale-level will be conducted. As well, to compare the level of parent-child agreement related to perceived parenting behaviours in the ADHD-diagnosed to the comparison group, Fisher's *r*-to-*z* transformation tests will be used for each of the three parenting dimensions.

Finally, to investigate the associations between independent and dependent variables, for the ADHD-diagnosed and comparison groups separately, bivariate correlations using Pearson's *r* coefficient (i.e., Pearson product moment correlations) were calculated. As well, associations between absolute difference scores (i.e., child reported minus parent reported) for each parenting dimension and other variables will be considered.

Exact *p* values are presented for all analyses and results are considered significant if the *p* value is less than the critical alpha using a Bonferonni adjustment for multiple comparisons within each scale. For all statistically significant results, as well as those that approached significance, Cohen's *d* values are provided to improve the interpretability of the practical significance (Cones & Foster, 2006).

Secondary analyses.

Item-level informant agreement.

To better understand the concordance and discordance between parents' and children's ratings of parenting practices, particularly with respect to directionality, an item-level discordance analysis will be performed (Maurizi, Gershoff, & Aber, 2012). This analysis allows for a more meaningful interpretation of the agreement and disagreement between informant ratings as it preserves the size and direction of agreement, or disagreement, at the item level (Maurizi et al., 2012). The procedure for this involves three steps. First, the item-level difference scores are calculated by subtracting parent ratings on each item of the CRPBI-30 from their child's ratings of the same item. Next, the item-level difference scores are weighted to preserve which respondent was consistently higher and/or lower on each subscale (Support, Behavioural Control, and Psychological Control). Finally, discordance patterns are then created using the median absolute values of parent and child weighted scores to determine if the parent and/or child were high or low compared to other parents and children. The number of times each respondent (parent or child) is either high or low is then used to classify dyads into four possible patterns: both low indicates a *concordant pattern*; parent and child high are labelled *mutually discordant*; and if parent was high and child was low, or vice versa, they were classified as *parent higher* and *child higher*, respectively.

Supplementary analyses.

Exploratory supplementary analyses might be performed depending on the findings from the primary and secondary analyses. These may include analyses to determine the influence of confounding variables and/or departures from normality.

CHAPTER FOUR: RESULTS

Chapter 4 presents the results of the data analyses used to examine the research questions for this study. The chapter is separated into four sections. The first section presents the ethical considerations/approval, and data preparation and tests of the data with respect to the assumptions necessary for conducting the main analyses. The second section presents the outcomes of the correlation analyses used to investigate the relationships between independent and dependent variables for the ADHD and comparison groups separately. Next, in section three, the analyses investigating potential differences between groups on each of the dependent variables are shown. Finally, the chapter concludes with supplementary and exploratory analyses selected based on the findings of the planned analyses.

The aim of the present study was to gain a better understanding of the parenting practices, parenting stress, and parental beliefs of parents of children with and without ADHD as they relate to one another, as well as to characteristics of the parent, family, and child. Forty-four parents of children aged 7 to 16 years participated in this study, including 25 parents of children with ADHD and 19 parents of children with no presenting concerns. Additionally, 14 children from the ADHD-diagnosed group and 13 children from the comparison group participated by providing ratings of their perceptions of their parents' parenting practices (i.e., 27 parent-child dyads and 17 ‘parent only’ respondents; total number of participants = 71).

Ethical Considerations and Approval

Ethical approval for this study was obtained from the Conjoint Research Ethics Board (CFREB) for the University of Calgary. Parent participants were provided with an overview of the study and notified of their (and their child's) right to withdraw prematurely with no repercussion and assurance that their data would be destroyed. Once parent participants had reviewed the information page, they were asked to read the consent form and indicate they were consenting to participation by selecting a box before they were able to access the questionnaire. Child participants were also provided with a brief description of the study and were required to indicate that they agree to participate (assent) before proceeding to the questionnaire.

After participants had completed the survey, they were taken to an information page that provided additional information related to the purposes of the study and the research benefits of the information that was gathered. The debriefing document also provided participant with the option to view a printable page with descriptions and contact information for resources in the community in the event that they had identified or experienced any emotional distress while completing the questionnaire.

Additionally, participants were provided with the opportunity to indicate their desire to have a summary of the findings sent to them at the conclusion of the study. Fourteen parents in the ADHD-diagnosed group (56%) and five parents in the comparison group (26.3%) chose to view the resources page. Finally, participants were encouraged to contact the researchers should they have any additional questions or concerns related to the study.

Data Preparation & Preliminary Analyses

The following section outlines the procedures taken to screen the data and to assess the data to ensure that the assumptions for the proposed analyses were met.

First, the data was entered into twice into IBM® SPSS® Statistics version 20 and once into a separate database (Microsoft Office Excel®) to ensure that all data was accurately entered. The data for the full sample and for each group was then examined using univariate and graphical approaches to determine if there were: (a) missing values, (b) values out-of-range; or (c) outliers, any of which may the influence the assumptions of the proposed statistical analyses and degrades the integrity of the findings. Finally, the data were assessed to determine if the assumptions had indeed been met.

Missing values and values out of range.

Missing data analyses and examination of the data for values out of range were also undertaken. Because the online survey was designed to require a response to each question before proceeding, it was not surprising that there were no missing values in the data for those who completed the questionnaires. However, if ideal conditions had prevailed perceived parenting data for both the parent and child would have been available (i.e., total N = number of dyads). Therefore, for the 17 families for which there was only parent data available, the children's ratings of parenting practices does represent a form of missing data. Unfortunately, this is a relatively common occurrence in multi-method and/or multi-informant research (Holmbeck et al., 2002). Additionally, as mentioned in Chapter 3, parents in the subsamples of 'parent only' and 'parent and child' were compared on each of the dependent variables using independent samples *t* tests, and no significant differences were found.

Outliers.

There were a number of mild outliers in the data sets; however, only one of them was a ‘repeat offender’ (i.e., an outlier on more than one or two scales or subscales). Upon further examination, this individual was the only participant indicating that they were “answering as a guardian,” which reflected their role as the focus child’s grandparent. Therefore, due to the wording of many of the items (e.g., “<u>my child</u> makes me…”, “parents who ... <u>their child</u>”), it is not possible to determine whether this individual was responding based on their own child (i.e., the parent of the child in their care) or the child in their care. Data for this participant was removed from the data set and was not included in any additional analyses, as it is possible that they do not represent an individual drawn from the population of interest (i.e., ‘unintended sampling’; Garson, 2012).

There were an additional five mild outliers on two or fewer scales or subscales. In three of these cases, they were only outliers by more conservative standards and an item-by-item analysis did not indicate any reason to discard them or alter their scores. Though the remaining two outliers did appear to represent ‘extreme responding,’ the patterns of their responses were consistent. Therefore, the truncation/recoding strategy described by Cousineau and Chartier (2010) was used to reduce the influence these scores may have had on the findings. This method of recoding involves moving the score on the target variable only to the next lowest (or highest) plus (or minus) one. Notably, these transformations were successful in reducing any deviations from normality. Additionally, all statistical analyses were conducted on the data prior to the transformations and again after the values were transformed and they did not affect the significant findings.

Parametric statistical assumptions.

Preliminary analyses were conducted to ensure that the data met the statistical assumptions necessary for calculating the Pearson's correlation coefficients and conducting the independent samples *t* test analyses. The assumptions necessary for conducting the *t* tests include that all dependent variables have an underlying normal distribution for each group, that the variances are relatively equal between the two groups (homogeneity of variance), and the scores in each cell are independent (Cone & Foster, 2006). Evidently, the parent- and child-reported parenting practices are not independent of one another; however, this is not a concern for the present study because the analyses are based on comparing the ADHD-diagnosed and comparison groups on the level of agreement from individual parent-child dyads.

To determine if there were violations of the assumption of normality, histograms, box-plots, and normal quantile-quantile plots (Q-Q plots) for each dependent variable were examined. To investigate the distribution of data further, the values for skewness, a measure of the symmetry of a distribution, and kurtosis, a measure of the peakedness of a distribution, were examined for each group and dependent variable separately. Skewness and kurtosis values for all dependent variables fell within acceptable limits (i.e., skewness < 2.0, and kurtosis < 2.0; Tabachnik & Fidell, 2007). Finally, to support the graphical and numerical methods, formal normality testing was also performed. The

Shapiro-Wilk (S-W) test was selected for these analyses because of its ability to retain adequate power when detecting departures from normality in smaller sample sizes (i.e., $n < 50$; Rozali & Wah, 2011), such as those found in the present study. The S-W tests confirmed that although the distribution of the majority of variables was not significantly non-normal, the test statistic for both the parent and child reported CRPBI-30 Parental Support subscales were significant. This indicates that the distribution of these data deviates significantly from that expected in a population where scores are normally distributed. Specifically, the Parental Support subscales were significantly negatively skewed. Attempts to normalize the data were undertaken, including first reflecting the variables and then using square root and Log transformations. Neither of these transformations was successful.

The second assumption required to meet the statistical assumptions for conducting the proposed analyses, the independent *t*-tests in particular, was homogeneity of variances. To test this assumption, the Levene's test for equality of variances was used. With the exception of the CRPBI-30 Psychological Control (parent) and CRPBI-30 Support (child) subscales, the Levene statistic was not significant. The Levene's statistics were $F(42, 1) = 5.58$, $p = .023$ and $F(25, 1) =10.12$, $p = .004$ for the Psychological Control (parent) and CRPBI-30 Parental Support (child) subscales, respectively. As such, the corrected values with equal variances not assumed are reported in the relevant analyses.

Primary Analyses

The primary research purpose for this study was to determine if there were differences in the parenting practices parents of children diagnosed with ADHD (ADHD-diagnosed group) and parents of children with no presenting concerns (comparison group). A secondary aim was to examine the level of agreement between parent and child perceived parenting practices in these two groups. Finally, this study sought to identify relationships between parenting practices, parenting stress, and parental beliefs between and within the subsamples (i.e., the ADHD-diagnosed and the comparison groups). To fulfill these purposes, the research questions for the present study were: (a) Do the perceived (by the parent and child) parenting practices, levels of parenting stress, and parental beliefs of parents of children diagnosed with ADHD differ from those of parents of children with no diagnosis? (b) Do parents' and children's reports of parenting behaviours indicate agreement or disagreement? (c) Does the level of agreement between parent and child reports of perceived parenting behaviours differ between these two groups? (d) What are the relations, if any, between perceived parenting practices, parental stress, parental beliefs, and characteristics of the parent, child and family?

Differences between the ADHD-diagnosed and comparison groups.

To determine if there were differences between the ADHD-diagnosed and comparison groups, a series of independent samples *t* tests were conducted for each of the dimensions of parenting (support, behavioural control, and psychological control), parenting stress, and parental beliefs (parental responsibility and sense of control). As previously mentioned, a MANOVA was originally planned, but was not possible given the sample size of the present study. However, because the analyses still involve multiple comparisons, it was decided that the significance level (α) would be adjusted using a Bonferonni correction to reduce the likelihood of committing a Type I error (i.e., falsely rejecting the null hypothesis). As such, independent samples *t* tests comparing the groups will only be considered significant if $p < 0.017$ (α/number of comparisons, .05/3) for the CRPBI-30 (parent and child reported), $p < .05$ for the PSS, and $p < .025$ (α/number of comparisons, .05/2) for the PLOC. However, trends that approach significance will also be discussed and effect sizes, based on Cohen's *d*, product-moment *r,* and the effect size statistic "*q*", are presented. Measures of effect size of $d = 0.2$ are considered "small", $d = 0.5$ are considered "medium", and $d \geq 0.8$ are considered "large" (Cohen, 1988; Nakagawa & Foster, 2004); effect size indexes for the significance of product-moment correlations (effect size statistic *r)* = .10, .30, and .50 are considered "small", "medium" and "large" respectively. Effect sizes for comparing correlations between groups (i.e., r_{adhd} vs. $r_{comparison}$) measured by "*q*" are the same as those for the product-moment *r* (Cohen, 1992). Scale means, standard deviations, and results of the *t* tests are presented in Table 4.

Parenting practices – parent reported.

Results from the independent samples *t* tests reveal that parents of children with ADHD reported similar levels of parental support ($M = 27.36$, $SD = 2.64$) compared to parents of children with no diagnosis ($M = 27.84$, $SD = 2.91$), $t(42) = -0.574$, $p = .569$, $d = 0.173$. As well, parents in the ADHD-diagnosed group ($M = 22.00$, $SD = 2.77$) did not differ significantly from the comparison group ($M = 21.84$, $SD = 2.83$) in their reports of

Table 4

Parent and Child-reported Dependent Variables and Mean Score Differences between ADHD and Comparison Group

	Scale Ranges	ADHD (n = 25)			Comparison (n = 19)			Differences	
		M	*(SD)*	Range	*M*	*(SD)*	Range	*t*	*p*
Parent Reported									
Support	10-30	27.36	(2.64)	22-30	27.84	(2.91)	21-30	-0.54	.569
Behavioural Control	10-30	22.00	(2.77)	16-26	21.84	(2.83)	16-27	0.19	.854
Psychological Control[a]	10-30	15.32	(3.96)	10-24	13.42	(2.12)	11-18	2.04	.048*
Parental Stress	18-72	39.92	(9.31)	18-60	32.47	(10.12)	18-52	2.53	.015*
Parental Beliefs									
P. Lacks Responsibility	10-50	34.97	(5.33)	26-45	29.42	(4.99)	20-39	3.51	.001**
P. Lacks Control	10-40	20.24	(2.88)	16-25	16.26	(2.56)	11-21	4.76	<.001***
Child Reported									
Support[a]	10-30	28.71	(1.44)	26-30	26.39	(4.03)	19-30	1.97	.068
Behavioural Control	10-30	21.07	(3.04)	17-28	19.85	(4.71)	11-28	0.81	.426
Psychological Control	10-30	17.14	(4.43)	11-27	14.46	(4.27)	10-24	1.60	.123
Difference Scores[c]									
Support	-	2.07	(2.05)	0-6	2.35	(1.69)	0-7	.446	.659
Behavioural Control	-	3.36	(2.06)	0-7	2.44	(2.54)	0-8	.945	.354
Psychological Control	-	3.57	(2.82)	0-9	2.43	(3.07)	0-8	.486	.631

Note: Child reported data based on 14 and 13 participants in the ADHD-diagnosed and comparison groups
*p < .05, ** p <.01, *** p < .001; [a] Levene's tests were significant. Values reported (t and p) reflect those for samples where unequal variances cannot be assumed; [c] Difference scores are the absolute differences in parent and child reported parenting behaviours.

behavioural control, *t* (42) = .185, *p* =.854, *d* = 0.057. Finally, though parents in the ADHD-diagnosed group reported using more psychological control (*M* = 15.32, *SD* = 3.96) compared to the comparison group (*M* = 13.42, *SD* = 2.11), the difference was not significant at the corrected alpha level of .017, *t* (42) = 2.04, *p* =.048, *d* = 0.60.

Parenting practices – child reported.

The between group comparisons of child reported parenting practices were similar to the group comparisons of parents' reports. When compared with the comparison group (*M* = 19.85, *SD* = 4.71), children in the ADHD-diagnosed group (*M* = 21.07, *SD* = 3.04) did not differ significantly in their reports of parental Behavioural Control, *t*(25) = .809, *p* =.426, *d* = 0.31. There was also no significant difference between the parental Psychological Control reported by children in the ADHD-diagnosed group (*M* = 17.14, *SD* = 4.44) and the comparison group (*M* = 14.46, *SD* = 4.27), *t*(25) = 1.60, *p* =.123, *d* = 0.62. Finally, though there was no significant difference between the Parental Support reported by children in the ADHD-diagnosed group (*M* = 28.71, *SD* = 1.44) and the comparison group (*M* = 26.38, *SD* = 4.03), *t*(25) = 1.97, *p* =.068, there was a trend towards significance such that children in the ADHD-diagnosed group reported perceiving higher levels of parent support. This difference represents a medium to large effect size (*d* = 0.77).

Parenting stress.

Parents of children with ADHD reported experiencing significantly more parenting-related stress (*M* = 39.92, *SD* = 9.32) than did parents of children with no diagnosis (*M* = 32.47, *SD* = 10.12), *t* (42) = 2.53, *p* =.015. The difference in parenting stress between the two groups represents a medium to large effect size (*d* = 0.77).

Parental beliefs.

Parents of children with ADHD indicated that they are significantly less likely to attribute a child's behaviour, successes, and failures to the parent (i.e., Parent Lacks Responsibility; *M* = 34.96, *SD* = 5.33) relative to parents of children with no diagnosis (*M* = 29.42, *SD* = 4.99), *t*(42) = 3.506, *p* =.001, *d* = 1.07.

Consistent with the trend towards an external parental locus of control found in parental responsibility, parents in the ADHD-diagnosed group indicated feeling significantly less of a sense of control over their child's behaviour (*M* = 20.24, *SD* = 2.88) compared to parents of children with no diagnosis (*M* = 16.26, *SD* = 2.56), *t* (42) = 4.76, $p < .001$, *d* = 1.46.

Within-group parent-child agreement.

First, bivariate correlations between parent and child ratings of the three parenting practices were examined. For the ADHD-diagnosed group, parent and child ratings of Behavioural Control (*r* =.058, *p* = .843) were not significantly related. Additionally, though not significantly correlated, parent and child ratings of Parental Support (*r* = .552, *p* = .056) and Psychological Control (*r* = .515, *p* = .059) did approach significance. In contrast to the ADHD-diagnosed group, parent and child ratings from the comparison group were significantly and positively related for Parental Support (*r* = .802, *p* = .001) and Behavioural Control (*r* = .760, *p* = .003), but no significant relationship was found for their ratings of Psychological Control (*r* = .302, *p* = .316).

To better understand the direction of difference(s) in parent and child reports of perceived parenting behaviours (i.e., does the parent or child rate the parenting behaviour higher?), a series of paired-samples *t* tests were conducted. Children in the ADHD-diagnosed group reported significantly higher levels of Parental Support (M = 28.71, SD = 1.44) compared to their parents (M = 26.78, SD = 2.89), $t(13) = -2.93$, $p = .012$. No other significant differences were detected between parents' reports and children's reports of perceived parenting practices in either group.

Group differences in level of parent-child agreement.

To compare the ADHD-diagnosed and comparison groups on agreements between parent and child perceived parenting behaviours, Fisher's *r*-to-*z* transformation tests were used for each of the three parenting dimensions. Parent and child ratings of Behavioural Control in the ADHD-diagnosed group ($r = .058$, $p = .853$), were significantly less congruent than agreement between parent and child reports of Behavioural Control in the comparison group ($r = .760$, $p = .003$), $z = -2.15$, $p = .031$, $q = -0.938$, two-tailed. For Psychological Control, parent-child agreement of the comparison group ($r = .302$, $p = .316$) was comparable to agreement between parents' and children's reports in the ADHD-diagnosed group ($r = .515$, $p = .059$), $z = .59$, $p = .555$. Similarly, though the level of agreement (correlation) between parents' and children's reports of parental Support was only significant in the comparison group ($r = .802$, $p = .001$), it was not significantly different from the concurrence of parent-child dyads in the ADHD-diagnosed group ($r = .552$, $p = .056$), $z = -1.11$, $p = .267$.

Discrepancies in parent and child reports of Parental Support in the ADHD-diagnosed group (*M* = 2.07, *SD* = 2.05) were not significantly different from the parent-child discrepancies in the comparison group (*M* = 2.35, *SD* = 1.69), t (25) = .446, p = .659. Similarly, the mean absolute difference scores from parent and child ratings of Behavioural Control did not differ between the two groups (*M* = 3.36, *SD* = 2.06; and *M* = 2.44, *SD* = 2.54 for the ADHD-diagnosed and comparison groups, respectively), t(25) = .945, p = .354). Finally, there were no significant differences found between the parent-child discrepancy scores of the ADHD-diagnosed group (*M* = 3.57, *SD* = 2.82) and the comparison group (*M* = 2.43, *SD* = 3.07), t (25) = .486, p = .631) with respect to parental Psychological Control.

Relations between variables (ADHD-diagnosed).

To identify relations between the independent and dependent variables, bivariate correlations (Pearson's *r*) were calculated for each group separately. Intercorrelations between the study variables revealed several significant correlations. Table 5 summarizes the correlations among participant characteristics and dependent variables for the ADHD-diagnosed group.

Table 5

Correlations between Independent and Dependent Variables for the ADHD-diagnosed Group

	Parenting Practices (CRPBI-30)									Beliefs		Stress
	Support			Behavioural Control			Psychological Control			Cont.	Resp.	
	Parent	Child	Dif.	Parent	Child	Dif.	Parent	Child	Dif.			
Child & Family Variables												
Child age	-.015	.020	0.64	-.418*	-.535*	-.181	-.211	-.129	.193	-.451*	-.177	-.205
Child gender	.103	.584*	-.027	.207	-.069	-.059	-.216	-.199	-.102	-.181	-.175	-.282
Child birth order	.395	.583*	0.44	-.159	.147	.051	-.160	.013	-.042	.004	.098	-.061
Child`s grade range	.128	.005	-.610*	.009	-.276	-.136	-.371	-.880***	-.225	-.216	-.024	-.320
No. of children	.011	-.148	-.403	.113	.124	-.209	.062	-.227	.216	-.054	-.213	.002
Parental Support												
Parent	-	**.522**	-.568*	-.228	-.112	-.387	-.223	-.148	.167	-.121	-.398*	-.376
Child		-	.242	-.382	.233	-.275	.118	.321	.100	.056	-.434	-.183
Difference			-	-.376	.171	.302	.472	.581*	-.233	.095	.085	-.058
Behavioural Control												
Parent				-	**.058**	.496	-.091	-.275	-.146	.099	.364	.044
Child					-	.277	.188	.244	.138	.315	.424	.425
Difference						-	.071	.091	-.329	.242	.532^{b}	.232
Psychological Control												
Parent							-	**.515**	-.225	.553**	-.035	.267
Child								-	.399	.088	.163	.240
Difference									-	-.426	.105	.068
Perceived Control										-	.313	.579**
Parental Responsibility											-	.548**
Parental stress												-

Note. Bolded values represent intergenerational correlations; * $p < .05$, ** $p < .01$, *** $p < .001$ (two tailed); ^{a} p =.051; ^{b} p =.050.

Associations between independent and dependent variables.

Of the parent, family, and child characteristics examined, children's age was negatively related to both parent and child reported Behavioural Control ($r = -.418$, $p = .037$; $r = - .535$, $p = .049$, respectively) and Parent Lacks Control ($r = -.451$, $p = .024$). This indicates that as the age of children in the ADHD-diagnosed group increased, both parents and children reported less Behavioural Control (i.e., rule setting). Interestingly, increased age was also associated with parents' reporting feeling more control over their children's behaviour. As well, gender (female) and birth order (youngest or only child status) were both significantly and positively related to child reported Parental Support ($r = .584$, $p = .028$; $r = .583$, $p = .029$, respectively).

Finally, child's grade range was negatively associated with child reported Psychological Control ($r = -.880$, $p < .001$), suggesting that children were more likely to report greater parental psychological control when their academic performance was lower (compared to other children in the sample, not their own past performance).

Associations between dependent variables.

In the ADHD-diagnosed group, parent reported Parental Support was significantly and negatively associated with Parent Lacks Responsibility ($r = -.398$, $p = .049$) and parent reported Psychological Control was positively associated with Parent Lacks Control ($r = .553$, $p = .004$). Additionally, Parental Stress was significantly and positively related to both Parent Lacks Responsibility ($r = .548$, $p = .005$) and Parent Lacks Control ($r = .579$, $p = .002$). Together these findings suggest that parents who experience greater stress in the parenting role also report beliefs consistent with an external parental locus of control (i.e., parent lacks responsibility and control for their child's behaviour). As well, parents who attribute less responsibility for children's behaviour to parents also reported being less supportive of their children. Finally, these findings indicate that parents who feel less in control of their children engage in greater psychological control.

Factors associated with discrepancies in parent and child reports.

To investigate whether agreement between parent and child reports of parenting practices was related to other study variables, correlations were computed between the absolute difference scores (i.e., child score minus parent score) and the independent and dependent variables. Notably, because absolute difference scores were used in these analyses, it is important to consider that larger absolute differences are indicative of lower agreement (i.e., magnitude); however, whether the child or parent reported higher levels is not represented (i.e., direction).

Differences in parent and child ratings of Parental Support were significantly and negatively related to child's grade range (r = -.610, p = .021) and parent reported Parental Support (r = -.568, p = .034). Difference scores in Parental Support were also significantly and positively related to child reported psychological control (r = .581, p = .029). This association suggests that greater divergence in parents' and their children's perceptions of parental support are associated with children reporting that their parent engages in psychological control. The only other relationship that approached significance was between the difference score for Behavioural Control and Parent Lacks Responsibility (r =.532, p = .05).

Relations between variables (comparison group).

Intercorrelations between participant characteristics and dependent variables for the comparison group are presented in Table 6.

Associations between independent and dependent variables.

Of the parent, family, and child characteristics examined, child's age was significantly and negatively correlated with child reported Parental Support (r = -.587, p = .035) and positively correlated with child reported Psychological Control (r = .609, p =.027), indicating that older children reported less parental support and greater parental psychological control. Significant, positive associations were also found between number of children in the family and parent reports of Behavioural Control (r = .576, p = .01). Finally, children's birth order was positively associated with parent reported Parental Support (r = .629, p = .001), and correlated negatively with parenting stress at a level approaching significance (r = -.440, p = .059). Based on the way that birth order was coded, these findings suggest that parents of younger children or only children report greater stress, but also perceive themselves as providing greater parental support.

Associations between dependent variables.

In the comparison group, Parenting Stress shared a significant negative relationship with both parent and child reported Parental Support (r = -.644, p = .003; r = -.848, p < .001) and a positive relationship with child reported Psychological Control (r = .725, p = .005). This indicates that increased parental stress is associated with less parental support and greater use of psychological control. Child reported Parental Support was also negatively related to child reported Psychological Control (r = -.819, p < .001).

Table 6

Correlations between Independent and Dependent Variables for the Comparison Group

	Parenting Practices (CRPBI-30)									Beliefs		Stress
	Support			Behavioural Control			Psychological Control			Cont	Resp	
	Parent	Child	Dif.	Parent	Child	Dif.	Parent	Child	Dif.			
Child & Family Variables												
Child age	-.184	-.587*	.466	-.413	-.457	.521	-.224	.609*	-.694**	.174	-.047	.181
Child gender	-.043	.211	-.330	-.044	-.407	.081	-.109	-.309	.295	-.095	.246	.136
Child birth order	.692**	.496	-.045	-.284	-.073	-.078	-.221	-.260	-.049	-.188	.180	-.440^{a}
Child`s grade range	-.368	-.068	-.194	.044	-.388	.487	.268	-.064	.638*	.074	.151	.218
No. of children	-.202	-.095	-.050	.576*	.506	-.147	.092	.220	-.235	-.154	-.330	.452
Parental support												
Parent	-	**.802****	-.280	-.064	.203	-.235	-.313	-.468	-.485	-.434	-.083	-.644**
Child		-	-.784**	.091	-.054	-.082	-.226	-.819**	-.547^{b}	-.518	-.387	-.848**
Difference			-	.005	.266	.002	.288	.842***	.411	.282	.466	.475
Behavioural control												
Parent				-	**.760****	-.014	.669**	.045	-.341	-.216	-.309	.144
Child					-	-.581*	.417	.190	-.319	-.155	-.133	.004
Difference						-	.385	.118	.302	.050	-.041	.254
Psychological control												
Parent							-	**.302**	.138	.071	.135	.242
Child								-	.349	.282	.153	.725**
Difference									-	.556*	.593*	.410
Perceived Control										-	.391	.437
Parental Responsibility											-	.245
Parental Stress												-

Note. Bolded values represent intergenerational correlations; * $p < .05$, ** $p < .01$; *** $p < .001$ (two tailed); ^{a} $p = .05$; ^{b} $p = .053$.

Finally, parent reported Behavioural Control and Psychological Control were positively related (r = .669, p = .002).

Factors associated with discrepancies in parent and child reports.

In the comparison group, absolute differences in parent and child ratings of Parental Support were significantly and negatively related to child reports of parental Support (r = -.784, p = .002) and positively correlated with child reported Psychological Control (r = .842, p < .001). A significant negative association was also found between child reported Behavioural Control and the absolute difference between parent and child ratings of the same variable (i.e., Behavioural Control; r = -.547, p = .053).

Difference scores for parent and child perceptions of parental Psychological Control were positively associated with child's age (r = .694, p = .009), child's grade range (r = .638, p = .019), and parental beliefs of lacking control (r = .556, p = .048) and responsibility for children's behaviours (r = .593, p = .033). Lastly, though the finding was not significant, there was a negative relationship between the discrepancy in parents' and children's ratings of Parental Support (r = -.547, p = .053).

Secondary Analyses

Item-level informant agreement.

To better understand the concordance between parents' and children's ratings of parenting practices, the item-level discordance analyses detailed in Chapter 2 (Maurizi, Gershoff, & Aber, 2012) were conducted for each of the parenting dimensions and groups separately. The proportions of dyads in each concordance label for parental Support, Behavioural Control, and Psychological Control are presented in Table 7.

Table 7

Percentage of Parent-child Dyads in Each Item-level Concordance Pattern for the ADHD-diagnosed and Comparison Groups (%)

	Perceived parenting practices (CRPBI-30)					
	Support		Behavioural Control		Psychological Control	
Discordance patterns	ADHD	Comparison	ADHD	Comparison	ADHD	Comparison
Mutually concordant	35.7%	38.5%	14.3%	61.5%	14.3%	30.8%
Parent high	0.0%	38.5%	35.7%	23.1%	50.0%	30.8%
Child high	35.7%	0.0%	21.4%	7.7%	28.6%	38.5%
Mutually discordant	28.6%	23.1%	28.6%	7.7%	7.1%	0.0%

Note. Total number of dyads = 27; [a] fourteen parent-child dyads; [b] thirteen parent-child dyads.

Notably, due to the relatively small number of dyads for which complete data was available (i.e., $n = 14$ and $n = 13$, for the ADHD-diagnosed and comparison groups) it was not possible to further investigate these patterns using chi-square analyses. Therefore, they are presented primarily as descriptive information.

Supplementary Analyses

Confounder(s).

First, to identify potential confounding variables, the chi-square goodness-of-fit tests and *t* tests presented in Chapter 2 (Methods) were considered. Having found that the percentage of males was significantly higher in the ADHD-diagnosed group (76%) compared to the comparison group (36%), $\chi^2(1, N = 44) = 6.848$, $p = .014$, the main analyses were repeated using an ANCOVA with gender serving as the covariate. The reported pattern of results remained the same: Parents in the ADHD-diagnosed group reported attributing significantly less responsibility to themselves, or parents in general (Parent Lacks Responsibility, $F(42) = 6.01$, $p = .005$) and felt significantly less control over their children's behaviour (Parent Lacks Control, $F(42) = 11.722$, $p < .001$). Additionally, parents in the ADHD-diagnosed group reported experiencing significantly more parental stress than did parents in the comparison group, $F(42) = 3.28$, $p = .048$.

Nonparametric statistical analyses.

Generally, *t* tests are considered robust with respect to violations of statistical assumptions (Brace, Kemp, & Snelgar, 2006). However, one must question statistically significant findings when they are aware of violations. In this study, the Levene statistic for Psychological Control was significant, indicating that the assumption of homogeneity of variances was not met. As well, data from both parent and child reports of Parental Support (CRPBI-30 subscale) were significantly negative skewed across groups.

A recent investigation of the *t* test versus the Mann-Whitney-Wilcoxon (MWW) found that for Likert questionnaires (5-point), the *t* test and MWW generated similar power, and suggested that researchers should not be concerned with finding a difference when there is not one in the population (de Winter & Dodou, 2010). However, de Winter & Dodou (2010) also found that the MWW was the more powerful test when distributions were peaked or skewed, as was the case in the current study. Therefore, considering that significant findings were detected with respect to Psychological Control, using the corrected value, as well as for group differences in Parental Support score differences, and also considering that the small sample size of the current study has the potential to reduce statistical power, MWW analyses were conducted.

Overall, findings of the MWW analyses were comparable to those found with the independent samples *t* tests, with the exception of the difference between groups for parent reported Psychological Control. Specifically, though parents in the ADHD-diagnosed group reported greater use of psychological control than the comparison group, the trend towards a significant difference identified in the *t* test (i.e., $p = .048 >$ critical α with the Bonferonni correction) was no longer present in the MWW test ($z = -1.53$, $p = .126$).

CHAPTER FIVE: DISCUSSION

The present study endeavoured to better understand parenting practices, and factors related to them, in families that include or do not include a child diagnosed with ADHD. To explore this topic a series of questionnaire items was administered to parents, and when possible, to their children. The questionnaire items that formed the parent survey were taken from established scales to measure three core dimensions of parenting (Parental Support, Behavioural Control, and Psychological Control), Parenting Stress, and two parental beliefs (Parental Responsibility and Parental Control of Child's Behaviour). Few previous studies had examined these variables simultaneously and fewer still have also considered the relations between these factors and parent, child, and family demographics. A final unique aspect of this study was that it considered perceptions of parenting behaviours from both the parent and child perspectives.

To fulfill the purpose, the research questions for the present study were: (a) Do the perceived parenting practices, levels of parental stress, and parental beliefs of parents of children diagnosed with ADHD differ from those reported by parents of children with no diagnosis? (b) Do parents' and children's reports of parenting behaviours indicate agreement or disagreement? (c) Does the level of agreement between parent and child reports of perceived parenting behaviours differ between these two groups? (d) What are the relations, if any, between specific parenting practices, parental stress, parental beliefs, and characteristics of the parent, child and family?

It was hypothesized based on past literature that parents of children diagnosed with ADHD would report greater levels of parental stress (Hypothesis 1a), and parental beliefs associated with an external locus of control (i.e., endorsing that parents lack responsibility and also lack control of their children's behaviours; Hypotheses 1b and 1c). Considering the relatively consistent findings in the general parenting literature, it was also predicted that regardless of group membership, children's ages would be negatively associated with behavioural control and positively related to psychological control (Hypothesis 2a). Additionally, and again irrespective of group, significant relationships between parenting stress, parental beliefs, and parenting behaviours were anticipated. Specifically, parenting stress was predicted to be positively related to parental beliefs suggestive of an external parental locus of control (i.e., parent lacks responsibility and parent lacks control; Hypothesis 2b), lower perceived parental support (child reported; Hypothesis 2c), and greater psychological control (child reported; Hypothesis 2d). No other predictions were made.

Summary of Results

The findings from the present study contribute to the rapidly expanding socialization literature in several ways. First, and among the most interesting findings of the current study, was that in contrast to what is suggested in much of the previous literature, parenting behaviours did not differ (significantly) between families where the focus child had a diagnosis of ADHD and families where the focus child had no presenting concerns or diagnoses. Second, supporting the previous literature and Hypotheses 1a and 1b, parents of children with ADHD reported greater levels of parenting stress, and were significantly less likely to assign responsibility for children's behaviours to themselves (or parents in general). Third, this study supported the hypothesis (1c) that parents of children with ADHD would report feeling significantly less able to control their children's behaviour compared to parents of children with no diagnosis. These findings suggest quite strongly that parenting factors, particularly parenting stress and parental beliefs regarding level of control are in need of further investigation.

Though it was not the primary investigative purpose of this study, an interesting and unexpected finding was that the patterns of significant and nonsignificant associations between the two groups differed. Of the six child and family demographic variables included in the correlation analyses with the dependent variables, there were several significant associations detected in both groups, yet <u>none</u> of them overlapped. In fact, often a significant relationship between variables was found in one group, and the same variables appeared uncorrelated in the other group. As such, and because the predictions made for the relations between variables were all made irrespective of group membership, there was only partial support for the second group of hypotheses. Specifically, findings from the ADHD-diagnosed group provide partial support for the prediction that there would be a negative correlation between child's age and behavioural control. Interestingly, although there was no support for the second part of this prediction (i.e., that there would be a positive association between child's age and psychological control) in the ADHD-diagnosed group, data from the comparison group did support this hypothesis. Findings for the ADHD-diagnosed group also supported the anticipated positive relationships between parenting stress and an external parental locus of control.

Additionally, though it was only true for the comparison group, there was evidence suggesting that dimensions of parenting are not independent. For example, there was a significant relationship between parent reported psychological control and behavioural control. This finding is inconsistent with the results of some previous studies (Smetana & Daddis, 2002) and further supports the need to better understand the similarities and differences between these two forms of parental control. Finally, though the association only emerged for the ADHD-diagnosed group, there was support for the negative association between children's perceptions of parental support and parental psychological control identified in previous studies (McElhaney, Porter, Thompson, & Allen, 2008).

The following sections provide a more in-depth interpretation of the findings of the current study as they relate to previous studies and to the research questions posed in Chapter 2. Following this, clinical implications are discussed and suggestions for future research are provided.

Explanation of Between Group Findings

Parenting practices.

Somewhat unexpectedly, there were no significant differences in the parenting practices of parents of children diagnosed with ADHD and parents of children in the comparison group. This finding is somewhat surprising given that the parenting behaviours of parents of children with ADHD are often found to be less effective (Chronis et al., 2007), more over-reactive (Johnson, Murray, Hinshaw, Pelham, & Hoza, 2002), and less responsive/supportive (Banks, Ninowski, Mash, & Semple, 2008).

Though the body of literature related to the parenting practices of parents of children with ADHD is quite limited, the trends observed in previous studies suggest that parents of children with ADHD are more controlling compared to parents of children with no diagnosis (Rogers, Wiener, Marton, & Tannock, 2009). However, some researchers have pointed out that this difference (i.e., more controlling) is both expected and necessary given the symptoms associated with ADHD (Grolnick, 2003; Webster-Stratton & Reid, 2011).

It is possible that the present study failed to identify differences between the parenting behaviours, particularly parental support, of parents of children with ADHD and the comparison group due to the restricted range observed for the Parental Support scale in the current study. Considering also that the sample sizes obtained in the present study were relatively small, the limited range likely led to deteriorations in measures of significance and effect sizes.

Another potential explanation for the nonsignificant findings of between-group comparisons of parenting practices relates to the non-random sampling method. Although attempts to recruit parents/families from various sources were taken, the parents who chose to participate were generally parents who were informed of the study at resource conferences, parent support groups, or because their child attends an independent school to meet their educational needs. Therefore, the parents comprising the ADHD-diagnosed group were likely representative of parents who are responsive, involved, and knowledgeable about ADHD. Similar findings have been noted in previous studies where the majority of participants came from families involved with ADHD associations

(Miranda, Grau, Rosel, & Melia, 2009). This is encouraging, but has the potential to limit how findings of research studies generalize to all parents of children with ADHD.

Parenting stress.

Parents of children diagnosed with ADHD reported significantly more parenting stress than did parents in the comparison group. This is consistent with the majority of studies investigating parenting stress in families of children with ADHD (Baker & McCal, 1995; Harrison & Sofronoff, 2002; Johnston & Mash, 2001; Rogers, Wiener, Marton, & Tannock, 2009; Theule, Wiener, Rogers, & Marton, 2011), and provides further support for the importance of addressing the emotional well-being of parents of children with ADHD.

Additionally, the findings from the current study further support those of Berry and Jones (1995) in their investigation of the psychometric properties of the Parental Stress Scale. Specifically, because the PSS was able to detect higher levels of parenting stress in parents of children with ADHD, compared to parents of children with no diagnosis/diagnoses, the scale may have clinical utility as a brief measure of parenting stress in parents of children with and without clinically significant behaviour problems. However, future studies are needed to replicate these findings. As well, conducting studies using the PSS on a large representative samples would be a useful first step in collecting data to be used as a normative sample. This would greatly improve the clinical utility of the measure, and would allow researchers to determine whether their samples are experiencing above or below average levels of parenting stress.

Notably, in this study, parenting stress (measured by the PSS) reported by parents in the ADHD-diagnosed group (M = 39.92, SD = 9.32) was slightly lower than that found by Berry and Jones (1995) in an investigation of parents of children with externalizing/behavioural problems (M = 43.2, SD = 9.1). However, given the distribution of scores, the difference here is almost negligible. Additionally, the difference in parenting stress reported in the ADHD-diagnosed group and the comparison groups (M = 32.47, SD = 10.12) in the present study is comparable to that of Berry and Jones' investigation (i.e., non-clinical group, M = 37.1, SD = 8.1). Therefore, considering that the difference in parenting stress between groups (i.e., clinical and non-clinical) in the present study was relatively consistent with that found by Berry and Jones (1995), the slightly lower parenting stress reported in this study was likely due to differences in either the methodology (e.g., web-based) and/or sample. The important note here is that whatever the difference might be, it affected subsamples of parents equally (i.e., ADHD-diagnosed and comparison groups) and parents of children with ADHD reported significantly higher levels of parenting stress.

Though the present study did not identify differences in the parenting behaviours of parents of children with ADHD compared to parents of children with no diagnosis, there is a significant body of literature indicating that parenting stress is associated with negative parenting practices (Deater-Deckard, 2004; Guajardo, Snyder, & Petersen, 2009; Solem, Christophersen, & Martinussen, 2011). Additionally, as previously mentioned, negative parenting practices and poor parent-child relationships are associated with increases in both internalizing and externalizing symptoms for the child (Barber, Stolz, &

Olsen, 2005; Hale, Engels, & Meeus, 2005; O'Connor, 2002). As such, considering that children with ADHD are already considered at greater risk for these outcomes, and the findings of the current study support that parents of children with ADHD experience heightened stress in the parenting role, it is evident that supporting the emotional well-being of these parents should be a priority for clinicians. Notably, though the association between parenting stress and dysfunctional parenting is well-established, researchers have identified several factors that may mediate this relationship (Morgan, Robinson, & Aldridge, 2002). Of particular relevance for understanding the findings from the current study, parental perceptions of child behaviour and perceived control have been shown to mediate the relationship between stress and parenting behaviours (Hastings & Johnston, 2001; Johnston, 1996).

Parental beliefs: responsibility & control.

The findings from the current study support those of previous studies, as well as the predictions made a priori, in detecting significant differences between parents of children with clinically significant behavioural concerns and parents of comparison children in feelings of parental responsibility and control of children's behaviour (McCabe, Goehring, Yeh, & Lau, 2008). However, one important note here is warranted. Considering the symptoms associated with ADHD, it is possible that it is actually adaptive of parents whose children have ADHD to hold a more external locus of control, as they are likely to experience a greater number of negative interactions with their children (Johnston & Mash, 2001). If parents of children with clinically significant symptoms of inattention and/or impulsivity (i.e., ADHD) were to blame themselves for not being "good parents" it would likely only result in additional stress.

In light of the significant findings indicating that parents of children with ADHD experience greater parenting stress and feel that they, and parents in general, are less in control of their child's behaviours compared to parents of children without an ADHD diagnosis, it is encouraging that neither parents or children in the ADHD-diagnosed group reported either fewer positive parenting practices or more negative parenting practices. It is possible that the lack of significant differences in parenting practices, despite elevated levels of parenting stress identified in the ADHD-diagnosed group, is related to a bias inherent in the sample of parents who participated. Specifically, one might assume that parents who are actively seeking out, and contributing to, understanding ADHD would be those who already have 'buffers' in place. This is particularly relevant because from a theoretical perspective, knowledge of the disorder should relate to beliefs regarding cause and controllability, and subsequently psychological distress (Harrison & Sofronoff, 2002). Specifically, if a parent attributes negative behaviours to the disorder and therefore recognizes that they are limited in their ability to control their child's behaviour, one might expect that they would experience less distress. However, in this study, parents of children with ADHD were more likely to view children's behaviour as being outside of parents' control, yet they still reported higher levels of parenting stress.

One possible explanation for this finding relates to the limited number of parental beliefs measured in the current study. Specifically, though the present study did find that parents of children with ADHD attributed their children's behaviour to forces outside of their control (i.e., external parental locus of control), we did not measure the extent to which parents viewed behaviours as internal, stable, and/or controllable by the child. As such, further investigation is needed to better understand the relations between parenting behaviours, parental beliefs and causal attributions. Additionally, as mentioned in the previous section, it would be valuable to expand the findings of the current study by examining parental beliefs and causal attributions as potential mediators of the relationship between parenting stress and parenting behaviours.

Parenting Practices: Parent-child Agreement/Disagreement

Parent and child reporting patterns.

Agreement between parent and child reports of parenting behaviours was first assessed by examining the bivariate correlations between informant reports. Within the ADHD-diagnosed group, though the level of agreement was extremely low for perceived Behavioural control (i.e., $r = .058$), agreement between parents and children was comparable to, or even higher than, previous studies for both Parental Support and Psychological Control (i.e., small to moderate correlations; Barry, Frick, & Grafeman, 2008; Kuppens, Grietens, Onghena, & Michiels, 2009). Similarly, agreement between parent and child reported Psychological Control in the comparison group was consistent with the low to moderate correlations found in the literature, as well as the level of agreement in the ADHD-diagnosed group. In contrast, agreements between parent and child reports of parenting behaviours in the comparison group were higher (i.e., significant correlations were found) than previous studies for both Parental Support and

Behavioural Control. Additionally, the association between informant ratings of Behavioural Control in the comparison group indicated significantly greater agreement between parent and child reports than what was found in the ADHD-diagnosed group. This is consistent with the findings of Tein, Roosa, and Michaels (1994) who found that parent and child ratings were less congruent in families of children with behavioural problems compared to families of children with few behavioural difficulties.

Interestingly, in the ADHD-diagnosed group greater discrepancy between parent and child ratings (absolute difference scores) of Behavioural Control were associated with parents who attributed less responsibility to parents (i.e., Parent Lacks Responsibility). It is possible, that this outcome reflects the findings of several studies that have indicated that parents of children with ADHD may be inconsistent in their disciplinary practices (Gerdes et al., 2007; McLaughlin & Harrison, 2006).

Despite having found no significant differences in parenting practices between the two groups, there was one particularly interesting outcome found in the within-group analyses of agreement/disagreement of parent and child ratings of parenting practices (i.e., paired samples *t* tests). Specifically, the current findings indicate that children with ADHD report greater parental support compared to their parents. Again, due to the limited range of the Parental Support subscale, interpreting this finding requires some caution. Still, this is an interesting outcome and lends support for the theory of some researchers regarding the positive illusory bias of children with ADHD. This theory is based on evidence that children with ADHD perceive interactions with an unfamiliar peer as more positive than what the other child reports (Diener & Milich, 1997). Moreover, children with ADHD have been shown to report having as many friends as their peers, and being equally well-liked by their classmates compared to children without ADHD, despite reports from parents and teachers indicating that they have few friends (Hoza et al., 2004).

Though the findings are quite limited, some studies have found evidence supporting that the positive illusory bias children with ADHD display in peer relationships may extend to other relationships, such as the parent-child relationship (Hoza, Pelham, Milich, Pillow, & McBride, 1993; Owens, Goldfine, Evangelista, Hoza, & Kaiser, 2007). A recent study investigating this theory found that children with ADHD, when compared at the dyad level, reported having a more positive relationship with their parents compared to their parents' perception (Gerdes et al., 2009).

Notably, though the restricted ranges on the Parental Support subscales may have reduced the likelihood of finding significant group differences, the mean parental support score for parents in the ADHD-diagnosed group was nearly identical to that of parents in the comparison group; however, children diagnosed with ADHD reported greater parental support (though not statistically significant) compared to children in the comparison group. The item-level discordance analyses also revealed that several children in the ADHD-diagnosed group consistently reported greater parental support than both their parents and other children in the sample (i.e., *child higher*). As well, none of the parents in the ADHD-diagnosed group were labelled *parent higher* based on self-reported parental support. Moreover, in the comparison group the opposite pattern emerged – several parents were labelled as *parent higher* and none of the children were categorized as higher (i.e., *child higher*).

An alternative explanation for the significantly higher child-reported parental support in the ADHD-diagnosed group relates to the arguments presented previously for the importance of treating parent and child reports of parenting practices as distinct variables. In particular, it is necessary to be cognizant of the fact that the parenting behaviours measured in this study are perceived parenting behaviours (i.e., they are purely subjective accounts). As such, considering that children with ADHD often feel like they are constantly getting into trouble (in school, at home, in the community etc; Barkley, 2006; Modesto-Lowe, Danforth, & Brooks, 2008), and parents in this sample were likely quite knowledgeable about the disorder and the challenges it poses for their child, it is possible that for the children in this study their parent(s) is/are perceived of as being highly supportive and accepting relative to other individuals with whom they interact.

Associations between Variables

As previously mentioned, one of the most interesting findings emerging from this study relates to the correlations between independent and dependent variables. Specifically, though several significant correlations were identified between variables in both the ADHD and comparison groups, there were no overlaps; strong relationships between variables in one group were often showing a very weak association in the other group, and vice versa. The major findings from the correlation analyses are presented in the following sections.

Associations between child factors and parenting behaviours.

Among the most interesting findings from the current study were the significant associations found between child's grade range and parenting practices, particularly with respect to how they differed between the ADHD-diagnosed and comparison groups. Specifically, in the ADHD-diagnosed group, there was a strong negative association between child's grades and child-reported psychological control, indicating that poorer grades were associated with greater use of psychologically controlling parenting behaviours, at least as perceived by, and reported on, by the child. This finding is consistent with what Smetana and Daddis (2002) found in their study of parenting behaviours and supports their argument that understanding parenting behaviours requires consideration of the domain specific antecedents. As they state, "...perceived psychological control is influenced by [children's] perceptions of the particular behaviours that are controlled, as well as the style in which that control is exercised" (2002, p. 574).

The findings related to parental psychological control and academic performance in ADHD in the present study are clearly insufficient to draw any specific conclusions; however, they are consistent with previous research that suggests there may be a bidirectional pattern whereby parents become intrusive in their child's learning in an attempt to control their child's academic achievement, which results in the opposite effect of increased ADHD behaviours and greater academic difficulties (Rogers, Wiener, Marton, & Tannock, 2009). Given the importance placed on academic achievement in our society, along with the association between ADHD and poor academic achievement, it is not surprising that it would be a primary target for parents of children with ADHD and the source of many stressful parent-child interactions (Deater-Deckard, 2004).

Interestingly, the findings from this study also indicated that age is associated with both behavioural and psychological control; however, the observed patterns were different between the two groups and only partially consistent with previous findings. Specifically, in the ADHD-diagnosed group it was found that as age increases parents and children report lower levels of firm control. This offers partial support for Hypothesis 2a. Though several studies have found this pattern in non-clinical populations (White, 2005), it is not yet an established theme in the literature on ADHD. Alternatively, this pattern may provide support for the claim that the externalizing behaviours and hyperactive/impulsive symptoms associated with ADHD often decrease with age (Barkley, 2006; Johnston & Jassy, 2007). Therefore, parents of children with ADHD may be adjusting the level of behavioural control appropriately.

Interestingly, the relationship between age and behavioural control identified in the ADHD-diagnosed group was not present in the comparison group. However, consistent with some previous findings and the second part of Hypothesis 2a, increased child age in the comparison group was associated with higher levels of child reported psychological control and lower child reported parental support (McElhaney, Porter, Thompson, & Allen, 2008).

Typically, the divergent effects of age on behavioural and psychological control are explained as parental control taking on different forms as children get older. Specifically, behavioural control does not necessarily decrease as the child gets older, but it has different meaning to the child and may be understood as psychological control (Soenens, 2011). Children desire greater autonomy and no longer require as much direct guidance from their parents as they get older. As such, behavioural control that persists at relatively high levels into the adolescent years begins to be viewed, by both parents and children, as intrusiveness and interference with the development of self as an autonomous individual (i.e., psychological control; Anderson & Branstetter, 2012; McElhaney et al., 2008). For example, if a parent tells an 8-year-old child that they are not allowed to take the bus across town to see a friend, this would be seen as appropriate rule setting and necessary for the child's protection. However, if a parent tells a 15-year-old child that they are not allowed to take the bus across town alone, this might be seen as overly controlling and a means of keeping the child dependent on them rather than developing a sense of independence. This theory was supported by findings from the comparison group such that age was not only significantly associated with increased psychological control, but also with decreased parental support and less behavioural control (though not significant; $r = -.413$, $p = .079$ and $r = -.457$, $p = .116$ for parent and child reports, respectively).

Parenting practices that limit the child's ability to develop an independent identity could be viewed as either psychological control or low responsiveness (i.e., low parental support). Considering this, it is possible that the associations between age and both parental support and psychological control observed in this study (for the comparison group) are related to one another. As noted in Chapter 2, parental support involves the parents' responsiveness to the child's needs. Therefore, it is possible that a lack of appropriate responsiveness to children's need to develop a sense of independence is perceived by the older children in the comparison group as both unsupportive and psychologically controlling. The strong negative association detected between child reports of parental support and psychological control further supports this notion.

Associations between parent/family factors and parenting.

Consistent with the predictions presented earlier, significant relationships were found between parenting stress and both of the parental beliefs associated with an external parental locus of control; however, this was only true of parents of children with ADHD. This finding is consistent with previous studies (Dukovic, Gerkensmeyer, & Wu, 2009) and underscores the importance of targeting interventions at reducing parents' subjective distress.

It was also found that in the ADHD-diagnosed group attributing less responsibility for children's behaviours to parents was associated with lower parent reported support. This is a particularly important finding as several longitudinal investigations have shown that parents' ability to be responsive when interacting with a child with ADHD is an important factor in the development of conduct problems (Johnson & Jassy, 2007). Additionally, there was strong relationship between parents' belief that they lack of control over their children's behaviour and increased use of psychologically controlling parenting practices. Together these findings suggest that although it may be adaptive to attribute some of children's behaviours to factors outside of parents' control (e.g., ADHD), doing so is associated with dysfunctional parenting behaviours. Importantly, the cross-sectional design of this study precludes the inference of any causal relationships between parental locus of control and parenting practices. However, it is possible that parenting stress influences parenting practices indirectly by altering parental beliefs regarding the level of control they have over their child's behaviours.

A final unanticipated finding was the relationship found in the comparison group between stress and parenting behaviours. Specifically, it was found that increased parenting stress was associated with greater child-reported psychological control, and decreased parent- and child-reported support. Together with findings from the ADHD-diagnosed group, these relationships highlight the many negative consequences that heightened parenting stress has on the parent-child relationship (Solem, Christophersen, & Martinussen, 2011).

The findings related to patterns of parent-child agreement, or disagreement as it may be, and the associations between factors emphasize the need for additional investigations into the factors associated with parent-child relationships in children with ADHD. Though the present study's design does not provide adequate information to make inferences of causality, the findings do contribute to the literature by consistently suggesting that the dynamics of the parent-child relationship in families of children with ADHD are different from those of families where no child has a diagnosis of ADHD. Moreover, the findings suggest that the parent-child relationship in families of children with ADHD cannot be fully understood within the framework of the general parenting literature.

Considerations and Limitations

The current study suffered from a number of limitations that must be considered when interpreting the results. The purpose of this section is to understand the findings in the context of the study`s design so that there is appropriate consideration for both significant and non-significant findings.

Possible study design limitations.

Sample size.

The issue of sample size is particularly relevant to the interpretation of results from the parent-child dyad analyses. With fewer than 15 dyads in each group, one anomaly could have greatly affected the overall results. Further, as individual differences are expected in both child and parent reports of parenting behaviours, a large representative sample would have provided a more accurate picture of the similarities and differences between parenting practices of children with and without ADHD. Another potential effect resulting from the small sample size is a reduction in the generalizability of conclusions that can be drawn from this study. In particular, given the relatively small sample size, it was not possible to perform more sophisticated analyses without introducing significant threats to the statistical power.

Additionally, the small sample size precluded examining potential differences related to subgroups within the sample. For example, it would have been interesting to investigate potential differences in perceived parenting behaviours and related factors between subtypes of ADHD. Similarly, given that the large body of literature indicating that each additional comorbid diagnosis is associated with increased negative outcomes

(Jensen et al., 2001), it would have been interesting to examine differences between children with ADHD only and children with specific comorbid diagnoses.

Cross-sectional nature.

A second characteristic that limited the conclusions that can be drawn from this study is the cross-sectional design. Though the significant trends that did emerge from this study are interesting and make unique contributions to the literature, the cross-sectional nature precludes making any inferences of causality. Only longitudinal designs and treatment effectiveness experiments allow for the investigation of bidirectionality, and a more thorough understanding of the interaction between parent and child factors (Kuppens, Grietens, Onghena, & Michiels, 2009).

Web-based format.

A final consideration related to the study's design is the online (web-based) format. Although the electronic/online design was chosen with the intention of ensuring anonymity for participants and obtaining as large a sample size as possible within the time available for completing this study, it also introduced several limitations and considerations. First, a particularly relevant issue for the current study was the lack of control the research had over ensuring parents had their children complete the child questionnaire after they had participated. Comparisons between the families where only the parent participant and families where complete data for the parent-child dyad were available indicated no significant differences; however, it does not determine if the participant were "missing at random" (MAR) or "missing completely at random" (MCAR), which excluded the use of any substitution techniques (Holmbeck et al., 2002).

In many cases, missing data likely resulted from a parent completing the survey and then forgetting to have their child complete the child portion. However, it is also worth considering that the nature of the questions (i.e., parenting practices) may have contributed to some parents' decision to not have their child participate. Unfortunately, because the current study design did not allow for any further investigation into the reason the data were missing, any explanation proposed would be based on pure speculation.

Similarly, several researchers have noted concerns with web-based studies that are completed on the participants own time from a location chosen by them. It is possible that the parents and children were not in similar emotional states because of this. For example, if one member of the dyad completed the questionnaire at home while the other completed it elsewhere, the setting may have had an impact on their responses. This is a particularly important consideration or this study as the emotional state of a participant may have been affected if they were completing the questions with the other informant nearby (i.e., at home) while answering questions related to their relationship. Similarly, the study was limited by the inability to control, or confirm, the independence of participant responses. Though parents were reminded in the information sheet and consent form to have their children answer independently, and it is probable that most did given that they were already volunteering their time, we were unable to determine if there was any communication between family members.

Group membership and severity of symptoms.

It may have been useful to include a screening measure of ADHD-related symptoms to all participants, rather than relying solely on reports of previous diagnoses as a measure of children`s inattentive and hyperactive behaviours. This would have been particularly useful because it would have allowed for the examination of potential differences related to subtypes of ADHD. Furthermore, the inclusion of behavioural ratings would have allowed us to determine whether inattentive and hyperactive/impulsive symptoms have divergent effects on parenting behaviours. Similarly, a brief indication of the child`s behavioural concerns in more than one setting (e.g., teacher and parent ratings) would likely have allowed the findings to better explore the parent and child factors. Though either or both of these additional pieces of information may have proven interesting or useful, the decision to include the measures selected was done with careful consideration for the amount of time participating in the study required to obtain as large a sample as possible. Given that it was difficult to obtain the relatively small sample size that was achieved, it seems that selecting the number of instruments in each study with consideration for time requested of participants will continue to be a balancing act.

However, in retrospect, it may still have been useful if the present study had included a brief measure of the severity of externalizing behaviours and inattention, as previous studies have identified significant relationships between the severity of child behavioural disturbance and ‘less effective parenting’ (McLaughlin & Harrison, 2006). As well, obtaining this data for the entire sample (ADHD-diagnosed and comparison) would have allowed us to determine if parents of children with subclinical behaviours (e.g., aggression, impulsivity) also report heightened parenting stress and an external parental locus of control.

Family psychopathology & ADHD.

Another potential limitation of the present study is that we did not have access to family and/or parents' individual psychological or medical histories. Although this decision was made in identifying an appropriate balance of depth and breadth of the demographic information collected and the length of time and appropriateness of questions for inclusion in a web-based survey, the potential confounds of not having this data are significant. Of particular interest would have been whether any other family members had also been diagnosed with ADHD. Due to the hereditable nature of the disorder, it is likely that many children with ADHD will have at least one parent who displays clinically significant symptoms (Barkley, 2006; Todd et al., 2001), even if they have not been formally diagnosed.

Additionally, with the recent advances in understanding the etiology of ADHD, specifically how genetic and environmental factors interact, studies have found that the number of individuals in the family diagnosed with ADHD has implications for various outcomes for the child, parents, and family system (Pluess & Belsky, 2009). Moreover, there is evidence to suggest that parent training for parents of children with ADHD is less effective when the parent also has a diagnosis of ADHD, or presents with clinically significant symptoms (Sonuga-Barke, Daley, & Thompson, 2002).

Clinical Implications

Despite the limitations, the findings of this study may have implications for interventions and preventative strategies for children with ADHD. Based on the findings of the present study, as well as a substantial number of previous studies, parents of children with ADHD experience significantly more stress (Jones & Passey, 2004; Morgan, Robinson, & Aldridge, 2002; Solem, Christophersen, & Martinussen, 2008) and feel less competent in the parenting role (Harrison & Sofronoff, 2002) compared to parents of children with no diagnosis. Moreover, the symptoms of ADHD are generally consistent with the ‘child characteristics’ most often indicated as being both antecedents and outcomes of negative parenting practices and parental stress in both the general and clinical parenting literatures. Therefore, it is evident that the presence of ADHD in children is a significant risk factor for the parent, child, and parent-child relationship.

Considering the more overt and disruptive symptoms of ADHD (i.e., poor self-regulation, impulsive behaviours, aggression), it is not surprising that the focus of intervention programs is often on behavioural modification and medication treatments. Although the inclusion of “parent training” is becoming increasingly recognized as a key component of a multi-modal treatment plan for ADHD (Gerdes, Haack, & Schneider, 2010; Webster-Stratton, Reid, & Beauchaine, 2011), it is possible that efforts are misplaced. For example, though many programs now include a parent component, the primary focus tends to be on teaching parents to manage their children’s behaviours (McLaughlin & Harrison, 2006; Treacy, Tripp, & Baird, 2005). Thus, often the various components of multi-modal treatment programs have one thing in common: they all focus on the child. The findings of the current study suggest that perhaps a slight shift in the goal of the parent training component of multimodal treatments for ADHD may be beneficial. Specifically, integrating multiple focal points (i.e., factors outside of the child) into the 'multi-modal' treatment plan would likely allow interventions to better support the child by supporting the entire family system.

In particular, it would be useful to include components aimed at supporting parents by reducing the stress they experience in the parenting role and helping them develop a greater sense of control and competence. It was previously noted that it might be adaptive for parents of children with ADHD to accept that they have limited control over their children's behaviour. However, it is also important for parents to believe that they have more control over the outcomes of a given situation than their child's behaviours. Several studies have found that when interventions include a component aimed at reducing parenting stress, parents' sense of competence increases and children's problem behaviours decrease (Gerdes, Haack, & Schneider, 2010; Jensen et al., 2001; Johnston & Mash, 2001).

Perhaps not surprisingly, particularly given the findings of the current study with respect to parents' sense of control over their children's behaviour, there is evidence that parents who experience significant parenting stress have greater difficulty "following through" and implementing interventions to support their child (Theule et. al., 2010). This only lends additional evidence for the need to include strategies aimed at improving parents' coping techniques and reducing parental stress in multi-systemic treatment programs for childhood ADHD. Moreover, considering the strong associations between parenting stress and parental beliefs of parents of children with ADHD identified in the present study, it would likely be useful for intervention programs to include a component designed to improve parents' sense of control over their child's behaviour (i.e., parental locus of control). While the effectiveness of such an intervention has only been measured in a few studies, there is preliminary evidence suggesting that it may be a beneficial addition to current programs. For example, Lloyd and Hastings (2009) reported that parents in a program for children with ODD generally developed a more internal parental locus of control upon successful completion of the program. Similarly, Grusec (2006) pointed out that dysfunctional parenting is not necessarily due to a lack of knowledge regarding how to control children's behaviours, but to maladaptive beliefs about the long-term success of these efforts.

Suggestions for Future Research

As previously mentioned, collecting multi-source and/or multi-method data is generally the preferred design when the goals of the research are to understand a complex relational construct (Smith, 2011). Unfortunately, despite attempts to collect data from multiple sources (i.e., parent and child reports of dimensions of parenting), only 61.4% of participating families in this study provided data for both the parent and child. Considering that the sample size was already relatively small (N = 44 parent participants), and the overarching goal included comparing parents of children diagnosed with ADHD to parents of child with no diagnoses (i.e., 2 groups), the proportion of missing data precluded performing more advanced statistical analyses related to the level of agreement/disagreement between parents' and children's ratings.

Although some interesting findings emerged within the discrepancy analyses, the small sample size limited the procedures that were carried out as well as the ability to generalize these findings to the population. Future studies are needed to replicate these findings in a larger sample. Increased sample sizes would also allow researchers to exclude cases from analyses when substantial data was missing from one informant (Holmbeck, et al., 2002), and conduct more sophisticated multivariate analyses.

It would also be interesting for future studies to examine the parenting factors included in the present investigation within and between different subtypes of ADHD. This would help to further clarify what the risk factors are for parents developing significant stress in the parenting role. Though it is not always possible, ideally, future studies should examine these factors using a longitudinal design. Longitudinal studies are necessary for better understanding how characteristics of the parent, child, and family interact with one another.

REFERENCES

Abidin, R. R. (1990). Introduction to the special issue: The stress of parenting. *Journal of Clinical Child Psychology, 19,* 298-301. doi: 10.1207/s15374424jccp1904_1

Abidin, R. R. (1992). Presidential Address: The determinants of parenting behavior. *Journal of Clinical Child Psychology, 21,* 407-412. doi: 10.1207/s15374424jccp2104_12

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50,* 179-211. doi: 10.101610749-5978(91)90020-T

American Psychiatric Association (2000). *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision.* American Psychiatric Association: Washington, DC.

Anastopoulous, A. D., Shelton, T. L., DuPaul, G. J., & Guevremont, D. C. (1993). Parent training for attention deficit hyperactivity disorder: Its impact on parent functioning. *Journal of Abnormal Child Psychology, 21,* 581-596. doi: 10.1007/BF00916320

Anderson, R. J., & Branstetter, S. A. (2012). Adolescents, parents, and monitoring: A review of constructs with attention to process and theory. *Journal of Family Theory & Review, 4,* 1-19. doi: 10.1111/j.1756-2589.2011.00112.x

Arim, R. G., Marshall, S. K., & Shapka, J. D. (2010). A domain-specific approach to adolescent reporting of parental control. *Journal of Adolescence, 33,* 355-366. doi: 10.1016/j.adolescence.2009.

August, G. J., Braswell, L., & Thuras, P. (1998). Diagnostic stability of ADHD in a community sample of school-aged children screened for disruptive behaviour.

Journal of Abnormal Child Psychology, 26, 345-356. doi: 10.1023/A:1021999722211

Baker, D. B., & McCal, K. (1995). Parenting stress in parents of children with Attention-Deficit Hyperactivity Disorder and parents of children with learning disabilities. *Journal of Child and Family Studies, 4,* 57-68, doi: 10.1007/BF02233954

Baker, D. B., McIntyre, L. L., Blacher, J., Crnic, K., Edelbrock, C., & Low, C. (2003). Pre-school children with and without developmental delay: Behaviour problems and parenting stress over time. Journal of Intellectual Disability Research, 47, 217-230.

Bandura, A. (1989). Perceived self-efficacy in the exercise of personal agency. The Psychologist: Bulletin of the British Psychological Society, 2, 411-424.

Banks-Villegas, T. M. (1999). *Parenting styles and cognitions in women with and without symptoms of attention-deficit hyperactivity disorder* (Unpublished master's thesis). University of Calgary, Calgary, AB.

Banks, T., Ninowski, J. E., Mash, E. J., & Semple, D. L. (2008). Parenting behaviour and cognitions in a community sample of mothers with and without symptoms of Attention-Deficit/Hyperactivity Disorder. *Journal of Child and Family Studies, 17,* 28-43. doi: 10.1007/s10826-007-9139-0

Barber, B. K. (1996). Parental psychological control: revisiting a neglected construct. *Child Development, 67*, 3296-3319. doi:10.1177/0743554897121002

Barber, B. K. (1997). Adolescent socialization in context – The role of connection, regulation, and autonomy in the family. *Journal of Adolescent Research, 12,* 5-11.

Barber, B. K., & Harmon, E. L. (2002). Violating the self: parental psychological control of children and adolescents. In B. K. Barber (Ed.), *Intrusive parenting: How psychological control affects children and adolescents* (pp. 15-22). Washington, DC: American Psychological Association Press.

Barber, B. K., Olsen, J. A., & Shagle, S. C. (1994). Associations between parental psychological and behavioral control and youth internalized and externalized behaviors. *Child Development, 65,* 1120-1136. doi: 10.1111/1467-8624.ep7252832

Barber, B. K., Stolz, H. E., & Olsen, J. A. (2005). Parental support, psychological control, and behavioral control: Assessing relevance across time, culture, and method. *Monographs of the Society for Research in Child Development, 70* (4, Serial No. 282).

Barber, B. K., Xia, M., Olsen, J. A., McNeely, C. A., & Bose, K. (2012). Feeling disrespected by parents: Refining the measurement and understanding of psychological control. *Journal of Adolescence, 35,* 273-297. doi: 10.10.1016/j.adolescence.2011.10.010

Barkley, R. A. (2000). *Taking Charge of ADHD: The Complete Authoritative Guide for Parents.* New York, NY: The Guilford Press.

Barkley, R. A. (2004). Critique or misinterpretation? A reply to Timimi et al. *Clinical Child and Family Psychology Review, 7,* 65-69. doi:10.1023/B:CCFP.0000020193.48817.30

Barkley, R. A. (2006). *Attention Deficit Hyperactivity Disorder: A Handbook for Diagnosis and Treatment (3rd Edition)*. New York, NY: Guilford Press.

Barkley, R. A. and 84 other behavioral scientists (2002). International consensus statement on ADHD, January 2002. *Clinical Child and Family Psychology, 5*, 89-111. doi: 10.1023/A: 1017494719205

Barnett, M. A., Shanahan, L., Deng, M., Haskett, M. E., & Cox, M. J. (2010). Independent and interactive contributions of parenting behaviours and beliefs in the prediction of early childhood behaviour problems. *Parenting: Science and Practice, 10,* 43-59. doi: 10.1080/15295190903014604

Barry, C. T., Frick, P. J., & Grafeman, S. J. (2008). Child versus parent reports of parenting practices: Implications for the conceptualization of child behavioral and emotional problems. *Assessment, 15,* 295-303. doi: 10.1177/1073191107312212

Baumrind, D. (1965). Parental control and parental love. *Children, 12,* 230-234.

Baumrind, D. (1970). Socialization and instrumental competence in young children. *Young Children, 26,* 104-119.

Baumrind, D. (1991). The influence of parenting style on adolescent competence and substance use. *Journal of Early Adolescence, 11,* 56-95. doi: 10.1177/0272431691111004

Baumrind, D. (1996). The discipline controversy revisited. *Family Relations, 45,* 405-411.

Belsky, J. (1984). The determinants of parenting: A process model. *Child Development, 55,* 83-96. doi: 10.1111/1467-8624.ep7405453

Berns, R. M. (2007). *Child, Family, School, Community: Socialization and Support – 7th Edition*. Belmont, CA: Thomson Wadsworth.

Berry, J. O., & Jones, W. H. (1995). The Parental Stress Scale: Initial psychometric evidence. *Journal of Social and Personal Relationships*, *12,* 463-472. doi: 10.1177/0265407595123009

Brace, N., Kemp. R., & Snelgar, R. (2006). *SPSS for Psychologists – Third Edition*. New York, NY: Psychology Press, Taylor & Francis Group.

Bugental, D. B., & Johnston, C. (2000). Parental and child cognitions in the context of the family. *Annual Psychology Review, 51,* 315-344. doi: 10.1146/annure.psych.51.1315

Bugental, D. B., Johnston, C., New, M., & Silvester, J. (1998). Measuring parenting attributions: Conceptual and methodological issues. *Journal of Family Psychology, 12,* 459-480.

Campis, L. K., Lyman, R. D., & Prentice-Dunn, S. (1986). The Parental Locus of Control Scale: Development and validation. *Journal of Clinical Psychology, 15*, 260-267. doi: 10.1207/s15374424jccp1503_10

Caron, A. L. (2005). *Trajectories of adolescent internalizing and externalizing problems: Parenting behaviors as predictors of change* (Doctoral Dissertation). Retrieved from: etd.library.vanderbilt.edu

Caron, A. L., Weiss, B., Harris, V., & Catron, T. (2006). Parenting behavior dimensions and child psychopathology: Specificity, task dependency, and interactive relations. *Journal of Clinical Child & Adolescent Psychology, 35,* 34-45. doi: 10.1207/s15374424jccp3501_4

Chao, R. K., & Aque, C. (2009). Interpretations of parental control by Asian immigrant and European American youth. *Journal of Family Psychology, 23,* 342-354. doi: 10.1037/a0015828

Chronis, A. M., Chacko, A., Fabiano, G. A., Wymbs, B. T., & Pelham, Jr., W. E. (2004). Enhancements to the Behavioral Parent Training paradigm for families of children with ADHD: Review and future directions. *Clinical child and Family Psychology Review, 7,* 1-21. doi: 10.1023/B:CCFP.0000020190.60808.a4

Chronis, A. M., Lahey, B. B., Pelham, W. E., Williams, S. H., Baumann, B. L., Kipp, H., Jones, H. A., & Rathouz, P. J. (2007). Parental psychopathology and maternal positive parenting predict future conduct problems in young children with attention-deficit/hyperactivity disorder. *Developmental Psychology, 43,* 70-82.

Cohen, J. (1992). A power primer. *Quantitative Methods in Psychology, 112,* 155-159.

Cone, J. D. & Foster, S. L. (2006). *Dissertation and Theses from Start to Finish: Psychology and Related Fields – Second Edition.* American Psychological Association: Washington, DC.

Conners, C. K. (2006). *Attention Deficit Hyperactivity Disorder – The latest assessment and treatment strategies.* Kansas City, MO: Compact Clinicals.

Connor, D. F. (2002). *Aggression and Antisocial Behavior in Children and Adolescents.* New York, NY: The Guilford Press.

Cousineau, D., & Chartier, S. (2010). Outliers detection and treatment: a review. *International Journal of Psychological Research, 3,* 58-67.

Darling, N. (1999). Parenting style and its correlates. *Clearinghouse on Elementary and Early Childhood Education.*

Darling, N., & Steinberg, L. (1993). Parenting style as context: an integrative model. *Psychological Bulletin, 113,* 487-496. doi:10.1037/0033-2909.113

De Los Reyes., A. (2011). Introduction to the special section: More than measurement error: Discovering meaning behind informant discordance in clinical assessments of children and adolescents. *Journal of Clinical Child & Adolescent Psychology, 40,* 1-9. doi: 10.1080/15374416.2011.533405

de Winter, J. C. F., & Dodou, D. (2010). Five-point Likert items: t tests versus Mann-Whitney-Wilcoxon. *Practical Assessment, Research & Evaluation, 15* (11), 1-12. Retrieved from http://pareonline.net/genpare.asp?wh=0&abt=15

Deater-Deckard, K. (2004). *Parenting Stress.* New Haven, CT: Yale University Press.

Deater-Deckard, K., Malone, P. S., Sorbring, E., Bombi, A. S., Chang, L., Dodge, K. A., . . . Al-Hassan, S. M. (2011). The association between parental warmth and control in thirteen cultural groups. *Journal of Family Psychology, 25,* 790-794. doi: 10.1037/a0025120

Devore, D. M. (2006). *Parent-Child Relations: New Research.* New York, NY: Nova Science Publishers, Inc.

Drabick, D. A. G., Gadow, K. D., & Loney, J. (2008). Co-occurring ODD and GAD symptom groups: Source specific syndromes and cross-informant comorbidity. *Journal of Clinical Child and Adolescent Psychology, 37,* 314-326. doi: 10.1080/15374410801955862

Duchovic, C. A., Gerkensmeyer, J. E., & Wu, J. (2009). Factors associated with parental distress. *Journal of Child and Adolescent Psychiatry Nursing, 22,* 40-48. doi: 10.1111/j.1744-6171.2008.00168.x

DuPaul, G. J. (1992). How to assess attention-deficit disorder within school settings. *School Psychology Review Quarterly, 7,* 60-74.

DuPaul, G. J., Anastopoulos, A. D., Shelton, T. L., Guevremont, D. Co. & Metevia, L. (1992). Multimethod assessment of attention-deficit hyperactivity disorder. The diagnostic utility of clinic-based tests. *Journal of Clinical Child Psychology, 21,* 394-402. doi: 10.1207/s15374424jccp2104_10

Emeh, C. C. (2012). The influence of parent behaviors on positive illusory bias in children with ADHD. *Journal of Attention Disorders.* Advance online publication. doi: 10.1177/1087054712441831

Faul, F., Erdfelder, E., Lang, A, & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioural, and biomedical sciences. *Behavior Research Methods, 39,* 175-191. doi: 10.3758/BF03193146

Frazier, T. W., Youngstrom, E. A., Glutting, J. J., & Watkins, M. W. (2010). ADHD and achievement: Meta-analysis of the child, adolescent, and adult literatures and a concomitant study with college students. *Journal of Learning Disabilities, 40,* 49-65. doi: 10. 1177/00222194070400010401

Freed, R. D., & Tompson, M. C. (2011). Predictors of parental locus of control in mother of pre- and early adolescents. *Journal of Clinical Child & Adolescent Psychiatry, 40,* 100-110. doi: 10.1080/15374416.2011.533410

Fung, J. J., & Lau, A. S. (2010). Factors associated with parent-child (dis)agreement on child behaviour and parenting problems in Chinese immigrant families. *Journal of Clinical Child & Adolescent Psychology, 39,* 314-327. doi: 10.1080/1537441003691693

Galambos, N. L., Barker, E. T., & Almeida, D. M. (2003). Parents do matter: Trajectories of change in externalizing and internalizing problems in early adolescence. *Child Development, 74,* 578-594. doi: 10.1111/1467-8624.7402017

Gallagher, K. C. (2002). Does child temperament moderate the influence of parenting on adjustment? *Developmental Review, 22,* 623-643. doi: 10.1016/S0273-2297(02)00503-8

Gerdes, A., Haack, L. M., & Schneider, B. W. (2010). Parental functioning in families of children with ADHD: Evidence for behavioral parent training and importance of clinically meaningful change. *Journal of Attention Disorders*, *16,* 147-156. doi: 10.1177/1087054710381482

Gerdes, A., C., Hoza, B., Arnold, L. E., Hinshaw, S. P., Wells, K. C., Hechtman, L., . . . Wigal, T. (2007). Child and parent predictors of perceptions of parent-child relationship quality. *Journal of Attention Disorders, 11,* 37-48. doi: 10.1177/1087054706295664

Gerdes, A. D., Hoza, B., & Pelham, W. E. (2003). Attention-deficit/hyperactivity disordered boys' relationships with their mothers and fathers: Child, mother, and father perceptions. *Development and Psychopathology, 15,* 363-382. doi: 10.1017/S0954579403000208

Grolnick, W. S. (2003). *The psychology of parental control: How well-meant parenting backfires*. Mahwah, NJ: Lawrence Earlbaum Associates.

Grolnick, W. S., & Pomerantz, E. M. (2009). Issues and challenges in studying parental control: Toward a new conceptualization. *Child Development Perspectives, 3,* 165-170. doi: 10.1111/j.1750-8606.2009.00099.x

Guajardo, N. R., Snyder, G., & Petersen, R. (2009). Relationships among parenting practices, parental stress, child behaviour, and children's social-cognitive development. *Infant and Child Development, 18,* 37-60. doi: 10.1002/icd.578

Guion, K., Mrug, S., & Windle, M. (2009). Predictive value of informant discrepancies in reports of parenting: Relations to early adolescents' adjustment. *Journal of Abnormal Child Psychology, 37,* 17-30. doi: 10.1007/s10802-008-9253-5

Hagekull, B., Bohlin, G., & Hammarberg, A. (2001). The role of parental perceived control in child development: A longitudinal study. *International Journal of Behavioral Development, 25,* 429-437. doi: 10.1080/01650250042000438

Hale, W. W., Engels, R., & Meeus, W. (2006). Adolescent's perceptions of parenting behaviours and its relationship to adolescent Generalized Anxiety Disorder symptoms. *Journal of Adolescence, 29,* 407-417. doi: 10.1016/j.adolescence.2005.08.002

Harrison, C., & Sofronoff, K. (2002). ADHD and parental psychological distress: role of demographics, child behavioral characteristics, and parental cognitions. *Journal of the American Academy of Child and Adolescent Psychiatry, 41,* 703-711. doi: 10.1097/00004583-200206000-00010

Harvey, E. A. (2000). Parenting similarity and children with attention-deficit/hyperactivity disorder. *Child & Family Behavior Therapy, 22 (3),* 39-54. doi: 10.1300/J019v22n03_02

Harvey, E., Danforth, J. S., Ulaszek, W. R., & Eberhardt, T. L. (2001). Validity of the parenting scale for parents of children with attention-deficit/hyperactivity disorder. *Behaviour Research and Therapy, 39*, 731-743. doi: 10.1016/S0005-7967(00)00052-8

Haseby, Y., Nucci, L., & Nucci, M. S. (2004). Parental control of the personal domain and adolescent symptoms of psychopathology: a cross-national study in the United States and Japan. *Child Development, 75,* 815-828. doi: 10.1111/j.1467-8624.2004.00708.x

Hassall, R., Rose, J., & McDonald, J. (2005). Parenting stress in mothers of children with an intellectual disability: the effects of parental cognitions in relation to child characteristics and family support. *Journal of Intellectual Disability Research, 49,* 405-418. doi: 10.1111/j.1365-2788.2005.00673.x

Heiman, T., Zinck, L., Heath, N. (2008). Parents and youth with learning disabilities: Perceptions of relationships and communication. *Journal of Learning Disabilities, 41*, 524-534. doi: 10.1177/0022219408317860

Holmbeck, G. N., Li, S. T., Schurman, J. V., Friedman, D., & Coakley, R. M. (2002). Collecting and managing multisource and multimethod data in studies of pediatric populations. *Journal of Pediatric Psychology, 27*¸ 5-18. doi: 10.1093/jpepsy/27.1.5

Holmbeck, G. N., Shapera, W., & Hommeryer, J. S. (2002). Observed and perceived parenting behaviors and psychological adjustment in pre-adolescents with spina bifida. In B. K. Barber (Ed.), Intrusive parenting: How psychological control affects children and adolescents (pp. 191-234). Washington, DC: American Psychological Association.

Jensen, P. S., Hinshaw, S. P., Swanson, J. M., Greenhill, J. L., Conners, C. K., Arnold, L. E., . . . Wigal, T. (2001). Findings from the NIMH Multimodal Treatment Study of ADHD (MTA): Implications and applications for primary care providers. *Developmental and Behavioral Pediatrics, 60-73.*

Johnson, J. H., & Reader, S. K. (2002). Assessing stress in families of children with ADHD: Preliminary development of the Disruptive Behavior Stress Inventory (DBSI). *Journal of Clinical Psychology in Medical Settings, 9,* 51-62. doi: 10.1023/A:1014136029697

Johnston, C. (1996). Parent characteristics and parent-child interactions in families of nonproblem children and ADHD children with higher and lower levels of oppositional-defiant behavior. *Journal of Abnormal Child Psychology, 24,* 85-104. doi: 10.1007/BF01448375

Johnston, C., & Jassy, J. S. (2007). Attention-deficit/hyperactivity disorder and oppositional/conduct problems: Links to parent-child interactions. *Journal of the Canadian Academy of Child and Adolescent Psychiatry, 16,* 74-79.

Johnston, C., & Mash, E. J. (2001). Families of children with attention-deficit/hyperactivity disorder: Review and recommendations for future research.

Clinical Child and Family Psychology Review, 4, 183-207. doi: 10.102.3/A:1017592030434

Jones, H. A., Epstein, J. N., Hinshaw, S. P., Owens, E. B., Chi, T. C., Arnold, L. E, Hoza, B., & Wells, K. C. (2010). Ethnicity as a moderator of treatment effects on parent-child interaction for children with ADHD. *Journal of Attention Disorders, 13,* 592-600. doi: 10.1177/1087054709332158

Jones, J., & Passey, J. (2004). Family adaptation, coping, and resources: Parents of children with developmental disabilities and behaviour problems. *Journal of Developmental Disabilities, 11*, 31-46.

Kawabata, Y., Alink, L. R., Tseng, W-L., van IJzendoorn, M. H., & Crick, N. R. (2011). Maternal and paternal parenting styles associated with relational aggression in children and adolescents: A conceptual analysis and meta-analytic review. *Developmental Review, 31*, 240-278. doi: 10.1016/j.dr.2011.08.001

Kerlinger, F. N., & Lee, H. B. (2000). *Foundations of Behavioural Research – Fourth Edition*. Belmont, CA: Cengage Learning.

Klassen, A. F., Miller, A., & Fine, S. (2006). Agreement between parent and child report of quality of life in children with attention-deficit/hyperactivity disorder. *Child: Care, Health, & Development, 32,* 397-406. doi: 10.1111/J.1365-2214.2006.00609.x

Kokkinos, C. M., & Panayiotou, G. (2007). Parental discipline practices and locus of control: Relationship to bullying and victimization experiences of elementary school students. *Social Psychology of Education, 10,* 281-301. doi: 10.1007/s11218-007-9021-3

Kotchick, B. A., & Forehand, R. (2002). Putting parenting in perspective: A discussion of the contextual factors that shape parenting practices. *Journal of Child and Family Studies, 11,* 255-269. doi: 10.1023/A:1016863921662

Kuppens, S., Grietens, H., Onghena, P., & Michiels, D. (2009). Measuring parenting dimensions in middle childhood. *European Journal of Psychological Assessment, 25,* 133-140. doi: 10.1027/1015-5759.25.3.133

Laniado-Laborin, R., Candelaria, J. I., Villasenor, A., Woodruff, S. I., & Sallis, J. F. (2004). Concordance between parental and children's reports of parental smoking prompts. *Chest, 125,* 429-434. doi: 10.1378/chest.125.2.429

Lee, S. M., Daniels, M. H., & Kissinger, D. B. (2006). Parental influences on adolescent adjustment: parenting styles versus parenting practices. *The Family Journal: Counseling and Therapy for Couples and Families, 14,* 253-259. doi: 10.1177/1066480706287654

Li, J. J., & Lee, S. S. (2012). Association of positive and negative parenting behavior with childhood ADHD: Interactions with offspring monoamine oxidase-A (MAO-A) genotype. *Journal of Abnormal Child Psychology, 40,* 165-175. doi: 10.1007/s10802-001-9553-z

Lifford, K. J., Harold, G. T., & Thapar, A. (2008). Parent-child relationships and ADHD symptoms: A longitudinal analysis. *Journal of Abnormal Child Psychology, 36,* 285-296. doi: 10.1007/s10802-007-9177-5

Lloyd, T., & Hastings, R. P. (2009). Parental locus of control and psychological well-being in mothers of children with intellectual disability. *Journal of Intellectual & Developmental Disability, 34,* 104-115. doi: 10.1080/13668250902862074

Loe, I. M., & Feldman, H. M. (2007). Academic and educational outcomes of children with ADHD. *Ambulatory Pediatrics, 7*, 82-90. Retrieved from http://www.sciencedirect.com.ezproxy.lib.ucalgary.ca/science/article/pii/S1530156 70600267X

Maccoby, E. E. (1992). The role of parents in the socialization of children: An historical overview. *Developmental Psychology, 28*, 1006-1017. Retrieved from http://ovidsp.tx.ovid.com.ezproxy.lib.ucalgary.ca/sp-3.5.1a/ovidweb.cgi

Maccoby, E. E., (2000). Parenting and its effects on children: On reading and misreading behavior genetics. *Annual Review of Psychology, 51,* 1-27. doi: 10.1146/annurev.psych.51.1.1

Maccoby, E. E., & Martin, J. A. (1983). Socialization in the context of the family: Parent-child interaction. In P. H., Mussen & E. M. Hetherington (Eds.). *Handbook of Child Psychology: Vol. 4. Socialization, Personality, and Social Development (4th Edition).* New York: Wiley.

MacNaughton, K. L., & Rodrigue, J. R. (2001). Predicting adherence to recommendations by parents of clinic-referred children. *Journal of Consulting and Clinical Psychology, 69,* 262-270. doi: 10.1037//0022-006X.69.2.262

Manzeske, D. P., & Stright, A. D. (2009). Parenting styles and emotion regulation: The role of behavioral and psychological control during young adulthood. *Journal of Adult Development, 16,* 223-229. doi: 10.1007/s10804-009-9068-9

Mash, E. J., & Barkley, R. A. (2006). *Treatment of Childhood Disorders – Third Edition.* New York: The Guilford Press.

Maurizi, L. K., Gershoff, E. T., & Aber, J. L. (2012). Item-level discordance in parent and adolescent reports of parenting behavior and its implications for Adolescents' mental health and relationships with their parents. *Journal of Youth and Adolescence, 41,* 1035-1052. doi: 10.1007/s10964-011-9741-8

McCabe, K. M., & Goehring, K., Yeh, M., & Lau, A. S. (2008). Parental locus of control and externalizing behavior problems among Mexican American preschoolers. *Journal of Emotional and Behavioral Disorders, 16,* 118-126. doi: 10.1177/1063426608315139

McElhaney, K. B., Porter, M. R., Thompson, L. W., & Allen, J. P. (2008). Apples and oranges: Divergent meanings of parents' and adolescents' perceptions of parental influence. *Journal of Early Adolescence, 28,* 206-229. doi: 10.1177/0272431607312768

McKee, L., Colletti, C., Rakow, A., Jones, D. J., & Forehand, R. (2008). Parenting and child externalizing behaviours: Are the associations specific or diffuse. *Aggression and Violent Behavior, 13,* 201-215. doi: 10.1016/j.avb.2008.03.005

McLaughlin, D., & Harrison, C. (2006). Parenting practices of mothers of children with ADHD: The role of maternal and child factors. *Child and Adolescent Mental Health, 11,* 82-88. doi: 10.1111/j.1475-3588.2005.00382.x

McLeod, B. D., Weisz, J. R., & Wood, J. J. (2007). Examining the association between parenting and childhood depression: A meta-analysis. *Clinical Psychology Review, 27,* 986-1003. doi: 10.1016/j.cpr.2007.03.001

Modesto-Lowe, V., Danforth, J. S., & Brooks, D. (2008). ADHD: Does parenting style matter? *Clinical Pediatrics, 47,* 865-872. doi: 10.1177/0009922808319963

Miranda, A., Grau, D., Rosel, J., & Melia, A. (2009). Understanding discipline in families of children with Attention-Deficit/Hyperactivity Disorder: A structural equation model. *The Spanish Journal of Psychology, 12,* 496-505. Retrieved from http://redalyc.uaemex.mx/src/inicio/ArtPdfRed.jsp?iCve=17213008011

Morgan, J., Robinson, D., & Aldridge, J. (2002). Parenting stress and externalizing child behavior. *Child and Family Social Work, 7,* 219-225. doi: 10.1046/j.1365-2206.2002.00242.x

Morton, T. L. (1997). The relationship between parental locus of control and children's perceptions of control. *The Journal of Genetic Psychology, 158,* 216-225.

Nakagawa, S., & Foster, M. T. (2004). The case against retrospective statistical power analyses with an introduction to power analysis. *acta ethol, 7,* 103-108. doi: 10.1007/s10211-004-0095-z

Nenty, H. J. (2009). Writing a quantitative research thesis. *International Journal of Educational Sciences, 1,* 19-32.

O'Connor, T. G. (2002). Annotation: the 'effects' of parenting reconsidered: findings, challenges, and applications. *Journal of Child Psychology and Psychiatry, 43,* 555-572. doi: 10.1111/1469-7610.00046

O'Neil, K. M., & Penrod, S. D. (2001). Methodological variables in Web-based research that may affect results: Sample type, monetary incentives, and personal information. *Behavior Research Methods, Instruments, & Computers, 33,* 226-233.

Osbourne, J. W. (2010). Improving your data transformations: Applying the Box-Cox transformation. *Practical Assessment Research & Evaluation, 15.* Retrieved from http://pareonline.net/getvn.asp?v=15& n=12

Pinderhughes, E. E., Dodge, K. A., Bates, J. E., Petit, G. S., & Zelli, A. (2000). Discipline responses: Influence of parent's socioeconomic status, ethnicity, beliefs about parenting, stress, and cognitive-emotional processes. *Journal of Family Psychology, 14,* 380-400.

Pluess, M., & Belsky, J. (2009). Children's differential susceptibility to effects of parenting. *Family Science, 1,* 14-25. doi: 10.1080/19424620903388554

Plunkett, S. W., Henry, C. S., Robinson, L. C., Behnke, A., & Falcon, P. C. (2007). Adolescent perceptions of parental behaviors, adolescent self-esteem, and adolescent depressed mood. *Journal of Child and Family Studies, 16,* 760-772. doi: 10.1007/s10826-006-9123-0

Prinzie, P., Dekovic, M., Reijntjes, A. H., Stams, G. J., & Belsky, J. (2009). The relations between parents' big five personality factors and parenting: A meta-analytic review. *Journal of Personality and Social Psychology, 97,* 351-362. doi: 10.1037/a0015823

Putnick, D. L., Bornstein, M. H., Hendricks, C., Painter, K. M., Suwalsky, J. T. D., & Collins, W. A. (2008). Parenting stress, perceived parenting behaviours, and adolescent self-concept in European American families. *Journal of Family Psychology, 22*, 752-762. doi: 10.1037/a0013177

Reitz, E., Dekovic, M., & Meijer, A. M. (2006). Relations between parenting and externalizing and internalizing problem behaviour in early adolescence: Child behaviour as moderator and predictor. *Journal of Adolescence, 29,* 419-436. doi: 10.1016/j.adolescence.2005.09.003

Roberts, M. W., Joe, V. C., & Rowe-Hallbert, A. (1992). Oppositional child behaviour and parental locus of control. *Journal of Clinical Child Psychology, 21,* 170-177. doi: 10.1207/515374424jccp2102-9

Rogers, K. N., Buchanan, C. M., & Winchell, M. E. (2003). Psychological control during early adolescence: Links to adjustment in differing parent/adolescent dyads. *The Journal of Early Adolescence, 23,* 349-382. doi:10.1177/0272431603258344

Rogers, M. A., Wiener, J., Marton, I., & Tannock, R. (2009). Supportive and controlling parental involvement as predictors of children's academic achievement: Relations to children's ADHD symptoms and parenting stress. *School Mental Health, 1,* 89-102. doi: 10.1007/s12310-009-9010-0

Rozali, N. M., & Wah, Y. B. (2011). Power comparisons of Shapiro-Wilk, Kolmogorov-Smirnov, Lilliefors and Anderson-Darling tests. *Journal of Statistical Modeling and Analytics, 2,* 21-33.

Schaefer, E. S. (1965). Children's reports of parental behavior: An inventory. *Child Development, 36,* 413-424.

Schaeffer, N. C., & Presser, S. (2003). The science of asking questions. *Annual Review of Sociology, 29,* 65-88. doi: 10.1146/annurev.soc.29.110702.110112

Schludermann, E., & Schludermann, S. (1988). *Questionnaire for children and youth.* Unpublished manuscript.

Skinner, E., Johnson, S., & Snyder, T. (2005). Six dimensions of parenting: A motivational model. *Parenting: Science and Practice, 5,* 175-235. doi: 10.1207/s15327922par0502_3

Smetana, J. G., & Daddis, C. (2002). Domain-specific antecedents of parental psychological control and monitoring: The role of parenting beliefs and practices. *Child Development, 73,* 563-580. doi: 10.1111/1467-8624.00424

Smith, M. (2011). Measures for assessing parenting in research and practice. *Child and Adolescent Mental Health, 16,* 158-166. doi: 10.1111/j.1475-3588.2010.00585.x

Smith, B. H., Barkley, R. A., & Shapiro, C. J. (2006). Attention-Deficit/Hyperactivity Disorder. In E.J. Mash & R. A. Barkley (Eds.), *Treatment of childhood disorders – Third edition* (pp. 65-136). New York, NY: Guilford Press.

Soenens, B., & Beyers, W. (2012). The cross-cultural significance of control and autonomy in parent-adolescent relationships. *Journal of Adolescence, 35,* 243-248. doi: 10.1016/j.adolescence.2012.02.007

Soenens, B., & Vansteenkiste, M. (2010). A theoretical upgrade of the concept of parental psychological control: Proposing new insights on the basis of selfdetermination theory. *Developmental Review, 30,* 74-99. doi: 10.1016/j.dr.2009.11.001

Soenens, B., Luyckx, K., Vansteenkiste, M., Luyten, P., Duriez, B., & Goosens, L. (2008). Maladaptive perfectionistic self-representations: the meditational link between psychological control and adjustment. *Personality and Individual Differences, 38,* 487-498. doi: 10.1016/j.paid.2004.05.008

Solem, M-B., Christophersen, K-A., & Martinussen, M. (2011). Predicting parenting stress: Children's behavioural problems and parents' coping. *Infant and Child Development, 20,* 162-180. doi: 10.1002/icd.681

Someya, T., Uehara, T., Kadowski, M., Tang, S. W., & Takahashi, S. (2000). Effects of gender difference and birth order on perceived parenting styles, measured by the EMBU scale, in Japanese two-sibling subjects. *Psychiatry and Clinical Neuroscience, 54*, 77-81. doi: 10.1046/j.1440-1819.2000.00640.x

Sonuga-Barke, E., Daley, D., & Thompson, M. (2002). Does maternal ADHD reduce the effectiveness of parent training for preschool children's ADHD? *Journal of the American Academy of Child and Adolescent Psychiatry, 41*(3), 1-11. doi: 10.1097/00004583-20002060000-000009

Statistics Canada (2006). *Census Dictionary.* Statistics Canada Catalogue no. 92-566-XWE. Ottawa, Ontario. February 14. Retrieved from http://www12.statcan.ca/english/census06/reference/dictionary/index.cfm (accessed October 4, 2010)

Studsrod, I., & Bru, E. (2009). The role of perceived parental socialization practices in school adjustment among Norwegian upper secondary school students. *British Journal of Educational Psychology, 79,* 529-546. doi: 10.1348/000709908X381771

Tabachnick, B. G., & Fidell, L. S. (2007). *Experimental Designs Using ANOVA.* Belmont, CA: Duxbury.

Takeda, T., Ambrosini, P. J., deBerardinis, R., & Elia, J. (2012). What can ADHD without comorbidity teach us about comorbidity? *Research in Developmental Disabilities, 33,* 419-425. doi: 10.1016/j.ridd.2011.09.024

Tein, J. Y., Roosa, M. W., & Michaels, M. (1994). Agreement between parent and child reports of parental behaviors. *Journal of Marriage and the Family, 56,* 341-355.

Theule, J., Wiener, J., Tannock, R., & Jenkins, J. M. (2010). Parenting stress in families of children with ADHD: A meta-analysis. *Journal of Emotional and Behavioral Disorders, XX,* 1-15. doi: 10.1177/1063426610387433

Timimi, S., and 33 Coendorsers. (2004). A critique of the international consensus statement on ADHD. *Clinical Child and Family Psychology Review, 7,* 59-63. doi: 10.1023/B:CCFP.0000020193.48817.30

Todd, R. D., Rasmussen, E. R., Neuman, R. J., Reich, W., Hudziak, J. J., Buchotzs, K. K., ...Heath, A. (2001). Familiality and heritability of subtypes of attention deficit hyperactivity disorder in a population sample of adolescent female twins. *The American Journal of Psychiatry, 158,* 1891-1898. doi: 10.1176/appi.ajp.158.11.1891

Tuttle, A. R., Knudson-Martin, C., & Kim, L. (2012). Parenting as relationship: A framework for assessment and practice. *Family Process, 51*, 73-89. doi: 10.1111/j.1545-5300.2012.01383.x

Webster-Stratton, C. H., & Reid, M. J. (2011). Combining parent and child training for young children with ADHD. *Journal of Clinical Child & Adolescent Psychology, 40,* 191-203. doi: 10.1080/15374416.2011.546044

Wells, K. C., Epstein, J. N., Hinshaw, S. P., Connors, C. K., Klaric, J., Abikoff, H. B., . . . Wigal, T. (2000). Parenting and family stress treatment outcomes in Attention Deficit Hyperactivity Disorder (ADHD): An empirical analysis in the MTA study. *Journal of Abnormal Child Psychology, 28,* 543-553. doi: 10.1023/A: 1005131131159

White, A. (2005). *Assessment of parenting capacity: Literature review* (Research Report). Retrieved from NSW Department of Community Services website: www. community.nsw.gov.au/research_parenting_capacity.pdf

Wijsbroek, S. A. M., Hale, W. W., Raaijmakers, Q. A. W., & Meeus, W. H. J. (2011). The direction of effects between perceived parental behavioral control and psychological control and adolescents' self-reported GAD and SAD symptoms. *European Child Adolescent Psychiatry, 20,* 361-371. doi: 10.1007/s00787-011-0183-3

Williams, K. E., Ciarrochi, J., & Heaven, P. C. L. (2012). Inflexible parents, inflexible kids: A 6-year longitudinal study of parenting style and the development of psychological flexibility in adolescents. *Journal of Youth and Adolescence, 41,* 1053-1066. doi: 10.1007/s10964-012-9744-0

Wolfe, L. (2001). *Family resilience and parental competence: Contributions to variation on child depression scores in divorced and intact families* (Doctoral dissertation). Retrieved from http://www.ucalgary.ca/archives

Yahav, R. (2006). The relationship between children's and adolescents' perceptions of parenting style and internal and external symptoms. *Child: Care, Health and Development, 33,* 460-471. doi: 10.1111/j.1365-2214.2006.00708.x

APPENDIX A: RESEARCH MEASURES

Child Report of Parenting Behaviour Inventory (CRPBI-30)
Schludermann & Schludermann, 1988

Items from the CRPBI-30 were reworded for child questionnaires.
Rated on a Likert scale ranging from 1 "*A lot like me"* to 3 "*Not like* me"; or 1 "*Not like him/her*" to 3 "*Not like him/her*" for items on the children's questionnaires.

Acceptance subscale (Parental Support).
Alphas = .84 and .88 for parent and child reports, respectively.

As a mother (father), I feel that I am a person who...

... makes my child feel better after he/she discusses his/her worries with me.
... smiles at my child very often.
... am able to make my child feel better when he/she is upset.
... enjoys doing things with my child.
... is able to cheer my child up when he/she is sad.
... gives lots of care and attention to my child.
... believes in showing my love for my child.
...often praises my child (e.g., tells him/her that he/she did a good job).
... is easy to talk to.
... makes my child feel like the most important person in my life.

Psychological Control subscale (Psychological Control).
Coefficient alphas = .81 and .85 for parent and child reports, respectively.

As a mother (father), I feel that I am a person who...

... reminds my child of all of the things that I have done for him/her.
... tell my child if he/she really cared for me, he/she would not do things that cause me to worry.
... is always telling my child how he/she should behave.
... would like to be able to tell my child what to do all of the time.
... wants to control whatever my child does.
... tries to change things about my child.
... only keeps rules when it suites me.
... is less friendly with my child when he/she does not see things my way.
... will avoid looking at my child when I am disappointed in him/her.
... stops talking to my child when he/she has disappointed me, until he/she has pleased me again.

Firm Control subscale (Behavioural Control).
Coefficient alphas = .74 and .75 for parent and child reports, respectively.

As a mother (father), I feel that I am a person who...

... believes in having a lot of rules and sticking with them.
... insists that my child do exactly as he/she is told.
... is very strict.
... gives hard punishment.
... is easy on my child. **R**
... lets my child off easy when he/she does something wrong. **R**
... gives my child as much freedom as he/she wants. **R**
... lets my child go any place he/she wants without asking permission. **R**
... lets my child go out any time he/she wants. **R**
... lets my child do anything he/she would like to do. **R**

Parental Stress Scale (Parenting Stress).
Berry and Jones (1995)

Rated on a Likert scale from 1 "*Strongly Agree"* to 5 "*Strongly Disagree*"
Coefficient alpha = .88.

1. I am happy in my role as a parent. **R**
2. There is little or nothing I wouldn't do for my child if it was necessary.
3. Caring for my child sometimes takes more time and energy than I have to give.
4. I sometimes worry whether I am doing enough for my child.
5. I feel close to my child. **R**
6. I enjoy spending time with my child. **R**
7. My child is an important source of affection for me. **R**
8. Having a child gives me a more certain and optimistic view of the future. **R**
9. The major source of stress in my life is my child.
10. Having a child has left little time and flexibility in my life.
11. Having a child has been a financial burden.
12. It is difficult to balance different responsibilities because of my child.
13. The behaviour of my child is often embarrassing or stressful to me.
14. If I had it to do over again, I might decide not to have a child.
15. I feel overwhelmed by the responsibility of being a parent.
16. Having a child has meant having too few choices and too little control over my life
17. I am satisfied as a parent. **R**
18. I find my child enjoyable. **R**

Parental Locus of Control Scale (Parental Beliefs).
Campis, Lyman, Prentice-Dunn (1986)

The Parental Responsibility (‘Parent Lacks Responsibility) subscale is rated on a 5-point Likert scale ranging from 1 = *Never* to 4 = *Always*. Coefficient alpha = .88.

1. There is no such thing as good or bad children – just good or bad parents **R**
2. When my child is well-behaved, it is because he/she is responding to my efforts **R**
3. Parents who can’t get their children to listen to them don’t understand how to get along with their children **R**
4. My child/s behaviour problems are no one’s fault but my own **R**
5. Capable people who fail to become good-parents have not followed through on their opportunities **R**
6. Children’s behaviour problems are often due to the mistakes their parents made **R**
7. Parents whose children make them feel helpless just aren’t using the best parenting techniques **R**
8. Most children’s behaviour problems would not have developed if their parents had had better parenting skills **R**
9. I am responsible for my child’s behaviour **R**
10. The misfortunes and successes I have had as a parent are the direct results of my own behaviour **R**

The Parental Control of Child’s Behavior (‘Parent Lacks Control’) subscale rated on a 4-point Likert scale (modified) ranging from 1 = *Never* to 4 = *Always*. Coefficient alpha = .88.

1. I feel in control when it comes to my child **R**
2. My child’s behavior is more than I can handle
3. I feel that my child’s behaviour is hopeless
4. It is easier to let my child have his/her way than to put up with a tantrum or negative reaction.
5. I find that my child can get me to do things I really do not want to do
6. My child behaves in a manner very different from how I would want him/her to behave
7. When I am tired I let my child do things that I normally wouldn’t
8. I feel that I do not have enough control over the direction my child’s life is taking
9. I allow my child to get away with things
10. It is not too difficult to change my child’s mind about something

APPENDIX B: TESTS OF EQUALITY BETWEEN SUBSAMPLES

Table 8

Comparison of Dependent Variables between Parent-only and Parent-child Dyads

		Dyads (n = 27)			Parent only (n = 17)			Comparisons	
	Possible Range	*M*	*(SD)*	Range	*M*	*(SD)*	Range	*t*	*p*
Parent Reported									
Parenting Practices									
Parental Support	10-30	27.33	(2.80)	22-30	27.94	(2.68)	21-30	-.712	.480
Behavioural Control	10-30	22.11	(2.77)	16-27	21.64	(2.83)	16-26	.538	.559
Psychological Control	10-30	14.74	(3.60)	10-24	14.12	(3.10)	11-18	.589	.559
Parental Stress	18-90	36.59	(10.77)	18-60	36.88	(9.69)	18-51	-.090	.929
Parental Beliefs									
P. Lacks Responsibility	10-50	33.22	(6.05)	20-43	31.53	(5.49)	26-45	.936	.355
P. Lacks Control	10-40	18.81	(3.84)	11-25	18.06	(2.46)	14-23	.722	.475

Note: Child-reports of parenting behaviours are not calculated because there are only values for one group.

Table 9

Comparisons of Dependent Variables between Mother and Father Parent Participants

		Mothers (n = 40)			Fathers (n = 4)			Comparisons	
	Possible Range	*M*	*(SD)*	Range	*M*	*(SD)*	Range	*t*	*p*
Parent Reported									
Parenting Practices									
Parental Support	10-30	27.65	(2.64)	22-30	26.75	(4.03)	21-30	.622	.537
Behavioural Control	10-30	22.02	(2.80)	16-27	21.00	(0.96)	18-24	.846	.486
Psychological Control	10-30	14.62	(3.53)	10-24	13.25	(2.58)	12-14	.064	.446
Parental Stress	18-90	36.98	(10.06)	18-60	34.00	(13.46)	18-50	.528	.586
Parental Beliefs									
P. Lacks Responsibility	10-50	32.85	(5.88)	20-45	29.75	(5.18)	26-37	.608	.316
P. Lacks Control	10-40	18.58	(3.49)	11-25	18.00	(1.83)	16-20	.167	.749

Note: Child-reports of parenting behaviours are not calculated because there was only one child respondent in the group of fathers.

APPENDIX C: CODING GUIDE

The following was used to code demographic information before entering into SPSS©.

Group	
1	Clinical (ADHD-diagnosed)
2	Comparison
Gender	
1	Male
2	Female
Ethnicity	
1	British Isles Origins
2	French Origins
3	Aboriginal Origins
4	North American Origins
5	Caribbean Origins
6	Latin/Central/South American Origins
7	Western European Origins
8	Eastern European Origins
9	African Origins
10	Arab Origins
11	West Asian Origins
12	South Asian Origins
13	East and Southeast Asian Origins
14	Oceania Origins
15	Mixed (comment required)
Family Structure	
1	Two parent – (biological)
2	Two parent – (step-family)
3	Two parent – (adoptive or foster)
4	Two parent (blended)
5	Two parent (same sex)
6	Single mother (biological)
7	Single mother (adoptive or foster)
8	Single father (biological)
9	Single father (adoptive or foster)

Marital Status	
1	Unmarried
2	Married (to your child's other biological parent)
3	Married (to someone other than your child's other biological parent)
4	Divorced (from your child's other biological parent)
5	Divorced (from someone other than your child's other biological parent)
6	Widowed
7	Separated (from your child's other biological parent)
8	Separated (from someone other than your child's other biological parent)
9	Other (please specify)
Birth Order	
1	Eldest child
2	Middle child
3	Youngest child
4	Only child
Education level	
1	Did not complete High School
2	High School Graduate
3	Certificate (after High School)
4	College Degree (2 year)
5	College Degree (4 year)
6	University Graduate Degree
7	Post-Doctoral
Child's grade range	
1	< 50% in most classes
2	< 50% in some, but less than half of classes
3	50-60%
4	60-70%
5	70-80%
6	80-90%
7	90-100%

APPENDIX D: SAMPLE RECRUITMENT MATERIALS

Front

Children

Families

Knowledge

Support

Supporting Families of Children with Learning Disorders and Attention Deficit/Hyperactivity Disorder

RESEARCH PROJECT

WHO CAN PARTICIPATE? Parents (or caregivers) who have a child between the ages of 8 and 16 years.

WHAT IS INVOLVED? You and your child will be asked to complete a brief online questionnaire (20 minutes).

To thank participants for their time, all those who contribute to the study will be entered into a prize draw for various gift cards.

* Participation is completely anonymous and confidential.

Survey links and activation code on reverse

Back

SURVEY LINKS

PARENT QUESTIONNAIRE: http://www.surveymonkey.com/s/familyresearchstudyP

CHILD QUESTIONNAIRE: http://www.surveymonkey.com/s/familyresearchstudyC

ACTIVATION CODE
B2G2

* If you would like more information about this study, please contact the primary researcher

CONTACT INFORMATION

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Supporting Families of Children with Learning Disorders and Attention Deficit/Hyperactivity Disorder

RESEARCH PROJECT

We are examining factors that influence the parent-child relationship in children diagnosed with ADHD or a Learning Disorder.
The goal of this study is to better understand how these factors interact so that we can support children and their families.

WHO CAN PARTICIPATE? Parents (or caregivers) who have a child between the ages of 8 and 16 years

WHAT IS INVOLVED? You and your child will each complete a brief online questionnaire (about 20 minutes)

* Participation is completely anonymous and confidential

HOW DO WE PARTICIPATE? Follow the links & instructions below. You will be taken to the questionnaires and asked to put in a code. Create a 4-character code (letters or numbers) that begins with the letter "P". Please have your child use the same code.

Parent: http://www.surveymonkey.com/s/familyresearchstudyP

Child: http://www.surveymonkey.com/s/familyresearchstudyC

For information about the study, please contact the primary researcher.

CONTACT INFORMATION
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