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**The Influence of Coparenting Support on Fathers' Involvement with their Children
with Autism**

Jason L. Bloom

A Dissertation
Submitted to the Faculty of Graduate Studies
through the Department of Psychology
in Partial Fulfillment of the Requirements for
the Degree of Doctor of Philosophy at the
University of Windsor

Windsor, Ontario, Canada
2019
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The Influence of Coparenting Support on Fathers' Involvement with their Children with Autism

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Declaration of Originality

I hereby certify that I am the sole author of this thesis and that no part of this thesis has been published or submitted for publication.

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Abstract

The present study investigated how fathers of children with autism spectrum disorders (autism) are supported by their coparents, and the impact of this on fathers' involvement, motivation for involvement, and parenting stress. Fathers ($N = 76$) of children with autism aged 4-11 years completed an online survey, and 20 fathers completed an additional phone interview. Multiple regression analyses revealed that fathers' perceptions of coparenting support was not related to fathers' outcomes, such as involvement, satisfaction with involvement, parenting stress. Additional analyses revealed that fathers' perceptions of coparenting support was negatively related to their parenting stress. In turn, lower parenting stress was related to greater involvement with their children and greater satisfaction with involvement for fathers. Qualitative results suggested that fathers experience both positive and negative support from their coparents as well as from others, and that fathers are influenced both positively and negatively as a result of being involved with their children with autism. The present study has implications for fostering coparenting relationships, supporting fathers' involvement with their children, and facilitating fathers' involvement in treatment programs and research.

Dedication

This research is dedicated to all fathers who are raising a child with autism. I thank all of you for letting me hear your voices and I am always inspired and humbled by the stories you shared with me. I see you and I hear you, and I hope that this paper helps others to do the same. I hope that I have done you justice with this project.

Acknowledgements

I would like to acknowledge and thank the fathers of children with autism who participated in my study. Your participation was graciously appreciated and your help in spreading the word and getting other fathers involved was invaluable. To the fathers who took the time to participate in the additional phone interview with me, thank you once more for your open and honest responses, and for helping research studies like mine succeed.

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Introduction

Fathers are becoming more involved with their children than ever before, acting as equal parenting partners or coparents (Lamb, 2010; Pleck & Pleck, 1997). This increased involvement is due partly to more mothers working outside of the home, requiring fathers to become more involved, as well as to the increased motivation and commitment of fathers who are actively choosing to be more involved with parenting their children (Lamb, 2010; Marks & Palkovitz, 2004). Recent views on fatherhood suggest that fathers are involved with their children by responding to their unique needs in an attempt to ensure their well-being (Dollahite & Hawkins, 1998; Snarey, 1993). The generativity fathering framework may be especially helpful to frame fathering of children with disabilities, as these children have unique developmental challenges / needs that fathers respond to (Mitchell & Laszewicz, 2016).

Given the increased involvement of today's fathers, more research on father involvement is important and needed (Flippin & Crais, 2011). Researchers should be mindful that fathers are involved differently with their children than are mothers. For instance, fathers engage in play behaviours with their children more often than do mothers (Coyl-Shepherd & Hanlon, 2013; Dumont & Paquette, 2013; Fletcher et al., 2013; Newland et al., 2013; Paquette, 2004; Phares, Fields, & Kamboukos, 2009), and measuring fathers' play can provide a unique opportunity to understand and study father involvement. Lamb (2010) highlighted the importance of portraying fathers as more than 'only play partners' in research, so as not to miss fathers' other responsibilities (e.g., child-care activities). In the present study, the assessment of fathers' involvement with their children included both play and child-care activities.

Fathers' motivation for involvement with their children, in both play and child-care activities, can be influenced by the support they receive from others, including: family, friends,

and their parenting partner, or coparent. The support from coparenting partners can be especially influential to fathers' involvement with their children. Previous research demonstrated that parents of children with autism spectrum disorders report very high stress and, as a result, are more likely to seek support from their parenting partners than from outside sources (Birnbaum, Lach, Saposnek, & MacCulloch, 2012; Fiske, Pepa, & Harris, 2014; Hayes & Watson, 2013; Hock et al., 2012; McConnell Jr., 2015; Sim, Cordier, Vaz, Netto, & Falkmer, 2015). For fathers of typically developing children, higher support from their coparenting partners was related to higher father involvement in both physical play (Chen, 2012) and child-care activities (Cowan, Cowan, Cohen, Pruett, & Pruett, 2008; Cowan, Cowan, Pruett, Pruett, & Wong, 2009; Jia & Schoppe-Sullivan, 2011; McBride & Rane, 1998; Schoppe-Sullivan, Brown, Cannon, Mangelsdorf, & Sokolowski, 2008). However, the relationship between coparenting support and involvement in physical play or child-care activities for fathers of children with autism not yet been researched.

Fathers have been found to engage in play with their children with autism, including: physical play, rough-and-tumble play, playground play, piggyback rides, reading, baking, sports, board games, leisure activities, and more (Bloom, 2015; Jordan, 2003; Potter, 2016a; Vacca, 2013). For fathers of typically developing children, fathers' involvement in play was associated with better well-being for fathers (Coyle-Shepherd & Hanlon, 2013; Fletcher et al., 2013; Jenkins, 2009). The outcomes of play for fathers of children with autism have been studied less often. That being said, a few studies have found associations between father-child play and well-being and stress for fathers of children with autism (see Bloom, 2015; Kersh & Siperstein, 2007; Weiss & Diamond, 2003). Bloom (2015), Potter (2016b), and Mitchell and Lashewicz (2018) found qualitative support for the benefits of play and leisure for fathers of children with autism. For

instance, within a theme of *Father-Child Relationship*, one father in Bloom (2015) noted “a lot of what gave us the relationship to have that trust, was play” (p.76). Within a theme of *Personal Development*, a father in Potter (2016b) noted “we have changed and developed as people as a result of our involvement with our daughter” (p. 957).

Previous research has found that fathers are involved in child-care activities with their children with autism, though the literature is sparse. In one study of 306 fathers of children with autism, Potter (2016a) found that most fathers were responsible for managing their children’s morning, evening, and bedtime routines. In addition, many fathers indicated that they helped their children with homework, attended school meetings, were involved in the identification procedures at school, were involved in the school, e.g., parent-teacher association, and transported their children to activities or appointments (Potter 2016a; Potter, 2016b). Meadan, Stoner, and Angell (2015) interviewed seven fathers of children with autism about their roles and responsibilities and found that fathers were involved in morning routines, getting their children ready for school, helping with homework, and transportation. With respect to the outcomes of involvement on fathers’ well-being, Isenhour (2010) interviewed six fathers of children with autism about their involvement and found a theme of *Changing Views as Fathers*, including areas of personal growth and patience. For instance, one father noted “if I thought [being a father] would have required patience, it is even more so. Much more than I thought... I really had to change my viewpoint” (p.92).

The frequency of fathers’ involvement with their children may similarly be related to fathers’ satisfaction with their involvement. Previous research on fathers of typically developing children has found associations between fathers’ involvement with their children in play (e.g., playing interactively with them) and child-care (e.g., helping them get dressed), and their

satisfaction with involvement (Bouchard, 2000; Bouchard, Lee, Asgary, & Pelletier, 2007). Additional research has found a relationship between fathers' satisfaction with play and fathers' well-being (Agate, Zabriskie, Agate, & Poff, 2009; Poff, Zabriskie, & Townsend, 2010; Russell, 1987). However, much less research exists on the satisfaction of involvement for fathers of children with autism. Potter (2016a) found that 61% of 306 fathers reported being satisfied with their involvement with their children, including both play and child-care activities. Bloom (2015) found that fathers' satisfaction with play was related to fathers' well-being, with higher satisfaction related to less parenting stress and more life satisfaction. No studies were found on the relationship between coparenting quality and fathers' satisfaction with play for children with autism.

The present study explored the influence of coparenting support on fathers' motivation for involvement and fathers' actual involvement with their children with autism. Furthermore, additional outcomes of coparenting support were identified, including: fathers' satisfaction with involvement and parenting stress. Previous research had begun to identify the importance of fathers' satisfaction with their involvement in play, as this could influence other aspects of their well-being (see Bloom, 2015). Understanding parenting stress was especially important for fathers of children with autism, as they reported greater parenting stress than did fathers of both typically developing children and children with other disabilities (Dabrowska & Pisula, 2010; Fayerberg, 2012; Hayes & Watson, 2013; Merkaj, Kika, & Simaku, 2013). Thus, improvements in satisfaction with involvement and parenting stress could have particular importance for fathers of children with autism.

For the present study, the assessment of fathers' involvement with their children included involvement in play and child-care activities. Father-child play consisted of physical play

behaviours (e.g., tickling, wrestling, piggybacking) and play activities, that were generated by fathers of children with autism in a previous study (e.g., board games, playing with Lego, playing on a trampoline, playing sports; see Bloom, 2015). It was expected that these covered a wide range of types of father involvement in play. Fathers' involvement in child-care activities included involvement in the care (e.g., dressing, feeding, cleaning), education (e.g., teaching, dealing with difficult situations), and therapy (e.g., participating in therapy) of their children with autism.

The purpose of the present study was to identify the influence of coparenting support on fathers' involvement with their children with autism and the outcomes of this support for the fathers. Moreover, the present study identified fathers' motivation for involvement. A mixed-methods approach was used to analyze the research questions.

Fatherhood

The research discourse regarding fathers' involvement has continued to evolve and change over the years. For instance, in reviewing the research on fatherhood throughout the 20th century, researchers noticed that this work was often framed within a 'deficit paradigm' (Dollahite & Hawkins, 1998; Dollahite, Hawkins, & Brotherson, 1997; Marsiglio, Amato, Day, & Lamb, 2000). That is, fathering was often examined based on the impact of absent fathers on children or on fathers' perceived inadequate involvement, when compared to mothers (Dollahite & Hawkins, 1998; Dollahite, Hawkins, & Brotherson, 1997). Indeed, an issue that continues to be relevant in the literature today with research on fathers is that their involvement is often measured in comparison to mothers' involvement (Hawkins & Palkovitz, 1999; Kerry, 2000; Saracho & Spodek, 2008). This 'deficit paradigm' implicitly assumed that mothers' involvement

is more important or valuable than fathers, and that it is not important how much fathers are involved, only if they are as involved *as* mothers.

Towards the end of the 20th century, a non-deficit perspective of fatherhood began being discussed in contrast to this longstanding tradition of research that focused on the impact of inadequate fathering. This perspective was taken from Erikson's (1950) theory of psychosocial development and his concept of generativity (i.e., the individual's drive to guide and contribute to future generations). In 1993, Snarey provided empirical support for the generativity perspective of fathers. From there, a framework for generative fathering was identified by Dollahite and Hawkins (1998). In this view, fathering is proposed as generative work, as opposed to a social role that fathers may be fulfilling inadequately. That is, the proposed reason that fathers 'father' is to meet the needs of their children and to ensure their well-being, and not primarily in response to prescribed social expectations. Furthermore, the generative fathering framework allows for an examination of fathers' strengths and positive contributions and takes a developmental approach in understanding fathers' personal transformations and adaptations to their children's unique needs (Dollahite & Hawkins, 1998; Hawkins & Dollahite, 1997). In doing so, it provides a helpful framework for understanding what an 'effective' or 'involved' father may look like.

Dollahite and Hawkins (1998) proposed the term 'fatherwork' to best describe the act of generative fathering. The use of the word 'work' is intentional, as fatherwork (like housework) is an action that requires sustained effort and fathers have the agency to make choices in their fathering (Dollahite & Hawkins, 1998). Within the generative fathering perspective, fatherwork consists of seven activities: ethical work, stewardship work, development work, recreation work, spiritual work, relational work, and mentoring work (Dollahite & Hawkins, 1998). Ethical work

consists of fathers' commitment to their children and includes their continued presence and involvement. Stewardship work consists of fathers' ability to provide material resources and opportunities to their children. Development work consists of fathers' ability to respond and adapt to their children's developing, and changing, needs and wants. Recreation work consists of fathers' ability to play with their children at their level and to simultaneously challenge their children's skills. Spiritual work consists of fathers' ability to counsel, advise, and inspire their children, and does not necessarily imply religious beliefs. Relational work consists of fathers' ability to share, love, and converse with their children and to express empathy and comfort with them. Finally, mentoring work consists of fathers' ability to share stories and support the generative work of their children.

The generative fathering framework can be applied to research on fathers of children with disabilities. According to this framework, fathers act in response to their children's unique needs, and that fathering involves a sense of commitment and attention to children's developmental processes (Dollahite & Hawkins, 1998; Morman & Floyd, 2006). Moreover, this perspective includes a variety of 'fatherwork' that fathers may engage in at different stages of their lives. Given that children with disabilities often present with varied developmental challenges, needs, and courses that require responding to, this perspective can help to frame effective fathering for children with disabilities, including children with autism (Mitchell, Lashewicz, 2016).

Quotes and themes from fathers in qualitative studies have included experiences of generative fathering with their children with autism. Several studies have found support for 'development work'. In one study of 28 fathers of children with autism (aged 3-15), a theme of *You Have a Certain Vision...: Adjusting Expectations* was noted (Mitchell & Lashewicz, 2015). Mitchell and Lashewicz (2015) noted that fathers had to adjust their expectations of their

children to understand and grow in their fathering, and that they had become uniquely attuned and responsive to their children. In a more recent narrative study of 11 fathers of children with autism (aged 5-12), Mitchell and Laszewicz (2018) found a narrative of *Narratives of Adjustment*, where fathers reported that they had to adjust to their children's diagnoses. Bonsall (2018) interviewed and observed 5 fathers of children with disabilities (aged 7-11), including autism, and found themes of *Reorganization of Inner Thinking* and *Reorganization of Behaviour*. The responses indicated that fathers had a change in their perspective and commitment to giving their children the best life possible and that they adapted to their children's disability by changing their style of interactions. Furthermore, quotes and themes from fathers have also supported 'recreation work' (e.g., *Be Physically Active, Engaging in Play, Physical Interactions*), 'spiritual work' (e.g., *Direct Support for Children's Learning, Indirect Support for Children's Education, Teaching / Learning in Play*), and 'relational work' (e.g., *Father-child Relationships, Builds the Relationship, Affection*; Bloom, 2015; Potter, 2016b; Potter, 2016c). The generative framework appears to be one way to conceptualize fathers' involvement with their children with autism and was applied in the present study.

Autism Spectrum Disorders

Autism spectrum disorder is a pervasive neurodevelopmental disorder, with repetitive stereotypic behaviours and impairments in social communication and social interaction (American Psychiatric Association, 2013). Recent prevalence rates estimate that one in 59 children receive a diagnosis of autism, with boys being up to 4.5 times more likely to receive a diagnosis as girls (CDC, 2016; Christensen et al., 2019).

Parenting a child with autism is associated with increased parenting stress. A meta-analysis found that parents of children with autism reported higher parenting stress than did

parents of typically developing children and children with various diagnoses (e.g., Down's syndrome, cerebral palsy, cystic fibrosis, fragile X syndrome; Hayes & Watson, 2013). Fathers of children with autism report higher parenting stress than do fathers of either typically developing children or children with Down's syndrome (Baker-Ericzen, Brookman-Frazee, & Stahmer, 2005; Cohrs & Leslie, 2017; Dabrowska & Pisula, 2010; Darling, Senatore, & Strachan, 2012; Fayerberg, 2012; McStay et al., 2014; Merkaj, Kika, & Simaku, 2013). In studies where fathers were asked to share their perspectives, fathers' quotes have similarly highlighted the impact of parenting children with autism, including themes of *Stress*, *Impact on Parents* (e.g., feeling stressed), *Difficult Emotions*, and *General Negative Emotions* (Bloom, 2015; DePape & Lindsay, 2014; Myers, Mackintosh, & Goin-Kochel, 2009). For instance, in addition to stress, fathers of children with autism (primarily aged 3-11) in Myers et al. (2009) also reported 'marital strain', 'grief', 'depression', and 'guilt'.

Parents' stress can also have negative effects on their marital and coparenting relationships. Sim et al. (2017) recruited nearly 500 parents of children with autism, including 90 fathers, and found that stress increased the likelihood of parents experiencing a negative coparenting relationship. Saini et al. (2015) reviewed over 50 quantitative and qualitative studies on the relationship quality of parents of children with autism and found that parents of children with autism had lower relationship satisfaction than parents of typically developing children. Similar findings of lower relationship satisfaction were found in a recent meta-analysis of seven studies, including studies of only fathers of children with autism (Sim, Cordier, Vaz, & Falkmer, 2016).

Given the stress that parents of children with autism experience, it is important to understand the social supports available to them. Parents of children with autism may seek out

both formal (i.e., paid professional services) and informal social supports (i.e., unpaid emotional or physical support, often from family or friends; Marsack & Samuel, 2017). Previous research suggests that both formal and informal social supports are related to lower parenting stress, parenting burden, psychological distress, and depression, as well as higher life satisfaction and relationship satisfaction for parents of children with autism (Ekas et al., 2015; Ekas, Lickenbrock, & Whitman, 2010; Robinson et al., 2015; Zaidman-Zait et al., 2016; Zaidman-Zait et al., 2018). Informal social support may be more helpful to parents of children with autism than formal social support. In a qualitative study of 21 parents of children with autism (aged 3-9), including 5 fathers, a theme of *The Unsupportive ‘System’* was described, including statements from parents highlighting that the formal support system was inaccessible, unsupportive, and inadequately resourced (Woodgate, Ateah, & Secco, 2008). In addition, a recent study of 320 parents of adults with autism found that informal social support significantly predicted parents' quality of life, whereas no effect was found for formal social support (Marsack & Samuel, 2017). The informal social support that parents receive from their spouse may be especially important, above and beyond the support they receive from others. Robinson et al. (2015) surveyed over 200 parents of adolescents and young adults with developmental disabilities, including autism, and found that spousal support was significantly related to parenting burden, but that support from their own parents (i.e., the children's grandparents) was unrelated.

The stress of parenting children with autism necessitates that parents increasingly rely on one another for parenting support, beyond their marital relationship (Birnbaum et al., 2012; Hock et al., 2012; Sim et al., 2015; McConnell Jr., 2015). One father captured this notion, stating, “your relationship switches from being lovers and partners to being the leaders in the family, the facilitators, the executive committee” (Hock et al., 2012, p.11). Another father noted, “my wife

and I hold a stronger bond to keeping the family together" (Myers, Mackintosh, & Goin-Kochel, 2009, p. 680). Sim et al. (2019) interviewed 11 couples of parents of children with autism (aged 7-18) and found the overall theme of *We Are In This Together*. Moreover, May and colleagues (2017) interviewed 11 mothers and fathers of children with autism (aged 2-12) and identified a theme of *Adaptation of the Coparenting Relationship to the Emergence of a Child with an Autism Spectrum Disorder (ASD)*.

This stress can test parents' marital relationships. Hock, Timm, and Ramisch (2012) interviewed 10 mothers and nine fathers of children and adults with autism (aged 2-29) and identified a theme of *ASD Crucible*, noting that parents were stressed and that the diagnosis was a test on the couples' relationships. In another qualitative study, one father said that "autism does one of two things, it drives families apart, or makes them stronger" (Myers et al., 2009, p. 682). Furthermore, several qualitative studies have found that parenting children with autism can have both negative and positive effects on parents' marital and/or coparenting relationships. A study conducted by Myers et al. (2009) asked nearly 500 parents, including over 30 fathers, how their children with autism (aged 3-11) have affected their lives and their families' lives. Themes of *Marital Strain* and *Marriage Enriched* were identified (Myers et al., 2009). Some parents noted that their children's disabilities put a strain on their marriages, whereas others noted that their marriages were tested and strengthened. A meta-synthesis of qualitative articles on the parenting experiences of parents of children with autism identified themes of *Impact on Spouses*, including both positive and negative effects on the spousal relationship (DePape & Lindsay, 2014).

The previous research suggests that parenting a child with autism is a stressor on couples' relationships. As a result, parents' priorities often have to shift from focusing on their marital

relationships to their coparenting relationships. In addition, parents increasingly rely on their spouse or parenting partner for informal social support.

Coparenting Relationships

Parents' relationships with each other can have important implications for their involvement with their children, their own well-being, and the well-being of their children. This may be especially the case for parents of children with autism, who have additional parenting stress and responsibilities as a result of their children's diagnosis (Birnbaum et al., 2012; Darling et al., 2012; DePape & Lindsay, 2014; Hayes & Watson, 2013; Hock et al., 2012). Parents of children with autism may become more parent-centered and prioritize their coparenting relationships above their marital relationships, to provide appropriate care for their children (Birnbaum et al., 2012; Hock et al., 2012; Sim et al., 2015; McConnell Jr., 2015). Thus, the relationship between the children's parents, independent of their romantic/marital relationships, is of particular interest.

The concept of coparenting emerged from family systems theory, with the notion that parents represented an executive subsystem within the family and acted as 'co-managers', and that this subsystem was independent from their marital subsystem (Belsky, 1984; Feinberg, 2003). Coparenting has been defined as a role undertaken by two or more adults who share responsibility for the care and upbringing of a child, which includes the support (or lack thereof) that these adults provide to each other in childrearing (Feinberg, 2003; McHale & Lindahl, 2011). McHale and Lindahl (2011) added that coparents are any adults who work together to meet the children's needs and who are involved in the ultimate decision-making for the children. Coparenting behaviours can include both overt interactions, when both coparents are present, and covert interactions, when one coparent is absent (McHale & Lindahl, 2011).

Coparenting relationships are dynamic and can change over time and with respect to each child being parented. Coparenting relationships consist of the two adults who share responsibility for raising the child and is independent of their marital, romantic, or sexual relationships (Feinberg, 2003; McHale & Lindahl, 2011). These relationships are triadic in nature as they focus on the two adults in their parenting of a specific child (McHale & Lindahl, 2011). Feinberg (2003) noted that adults can simultaneously have positive coparenting relationships and negative marital relationships, or vice-versa, as these relationships are distinct.

Feinberg (2003) proposed a model of coparenting to conceptualize the components that encompass adults' coparenting relationships. The original model of coparenting consisted of four components, including: childrearing agreement, division of child-related labor, support - undermining, and joint management of family interactions (Feinberg, 2003). In 2012, Feinberg added parenting-based closeness as an additional measurable component of coparenting (Feinberg, Brown, & Kan, 2012).

The first component of Feinberg's (2003) coparenting model includes childrearing agreement and disagreement. This refers to the degree to which the coparents agree or disagree on a variety of child-related topics, including behavioural expectations for their child, the child's emotional and social needs, the child's safety, and/or methods of discipline (Feinberg, 2003). This component can be conceptualized as a dimension ranging from complete agreement to complete disagreement between coparents. Caring for children with autism requires coparents to either agree or disagree on several additional child-related topics (e.g., allocating financial resources, advocating for and deciding on intervention services, organizing daily routines, or altering expectations; Birnbaum et al., 2012; Saini et al., 2015).

The second component of Feinberg's (2003) model of coparenting includes the division of child-related labor between coparents. This encompasses dividing all of the duties and responsibilities for child-care, including finances, medical health, education, home maintenance, and/or play (Feinberg, 2003). An equal and agreed-upon division of labor is an important task for parents, including parents of children with autism, as it can strengthen parents' marital relationships as well (see Saini et al., 2015 for a review). Kent (2011) found that eight parents of children with autism (aged 5-13) had success assigning each other specific parenting roles and taking a 'divide and conquer' approach (theme of *Divide and Conquer*). For instance, one mother said "he (father) feels like 'if I'm working... we'll have the money to pay for this' ... and then for me it's kind of like delving into, 'okay what do I need to get done'" (Kent, 2011; p.85). Within a theme of *Responding to Change*, 22 parents of children with autism (aged 2-12) noted that their children's diagnosis of autism had an impact on their 'roles, responsibilities, and distribution of authority' (May, 2014).

The third component of Feinberg's (2003) model includes the support or undermining that parents receive from their coparents. Aspects of support can include coparents' warmth and supportiveness of their parenting partners, affirmation of their parenting competencies, acknowledgement of their contributions, and respect for their decisions and authority (Feinberg, 2003). On the other hand, aspects of undermining include coparents' criticisms, disparagement, and blame (Feinberg, 2003). The support - undermining dimension of coparenting is one of the most important for fathers, as the support that fathers receive from their coparenting partner is directly related to their well-being, self-efficacy, and involvement, for fathers of both typically developing children (Jia & Schoppe-Sullivan, 2001; McBride & Rane, 1998) and children with autism (May, Fletcher, Dempsey, & Newman, 2015; Sim et al., 2015). Themes from qualitative

interviews of 22 parents of children with autism (aged 2-12) highlight aspects of coparenting support, including *Working Together to Deal with the Job at Hand* (May, 2014).

The final component of Feinberg's (2003) original model encompasses the joint management of family interactions. This component includes interparental conflicts, parental coalitions, and balance. To manage interparental conflicts, coparents are responsible for controlling their communication and behaviour with one another (Feinberg, 2003). Themes from interviews of 22 parents of children with autism (aged 2-12) highlight aspects of this, including *Resolving Conflict* (May, 2014). If parents are unable to communicate and jointly provide care for their children, hostile interparental conflicts may ensue (Feinberg, 2003). Parental coalitions include the boundaries that coparents set in relation to other family members (Feinberg, 2003). The behaviours and attitudes exhibited in their coparenting relationship can simultaneously engage or exclude other family members from their family interactions (Feinberg, 2003). Coparents must also decide the degree to which they contribute to family interactions in a balanced manner (Feinberg, 2003). Fathers and mothers tend to have different emphases in their interactions with their children, with mothers often taking on more caregiving behaviours and fathers often taking on more play and discipline behaviours (Coyl-Shepherd & Hanlon, 2013; Fletcher, St. George, & Freeman, 2013; Newland et al., 2013; Paquette, 2004). Little research exists on whether this balance of family interactions is the norm for parents of children with autism as well. One study found qualitative evidence from 20 fathers, that both mothers and fathers engage in play with their children with autism (aged 4-11), with themes of *Mother's Role* (e.g., "my wife seeks out play with him more than I do", p.85) and *Father's Role* (e.g., "daddy is for playing, mommy is for comfort", Bloom, 2015, p. 86).

Feinberg added a fifth dimension of coparenting, parenting-based closeness, after responses from qualitative interviews with parents led to a theme of *Sharing the Joys of Parenthood* (Feinberg, Brown, & Kan, 2012). This dimension encompassed parents' experiences of working as a team, sharing in the celebration of seeing their children attain developmental milestones, and witnessing their partners develop as parents (Feinberg, Brown, & Kan, 2012). Researchers have identified similar themes of parenting-based closeness in several qualitative interviews with parents of children with autism, including: *We Work out our Differences*, *We're a Team*, *I've Got Your Back*, *Tag Team*, *Shared Parenting Endeavour*, *Shared Parenting Journey*, and *Shared Experiences* (Hock et al., 2012; May, 2014; Mendez et al., 2015; Sim et al., 2019).

For fathers, a high-quality relationship with their coparenting partners (i.e., positive experiences of support in the five dimensions) can have several benefits. Previous research has consistently found that more supportive coparenting relationships for fathers, regardless of their marital or cohabitating status, are related to higher father engagement, involvement, and competence with their typically developing children (Berryhill, 2017; Carlson, McLanahan, & Brooks-Gunn, 2008; Chen, 2012; Cowan, Cowan, Cohen, Pruett, & Pruett, 2008; Cowan, Cowan, Pruett, Pruett, & Wong, 2009; Hohmann-Marriott, 2011; Jia & Schoppe-Sullivan, 2011; McBride & Rane, 1998; Schoppe-Sullivan, Brown, Cannon, Mangelsdorf, & Sokolowski, 2008; Waller, 2012). With respect to play, Chen (2012) found that higher coparenting relationship quality was related to higher father involvement in physical play and leisure activities with their typically developing children (aged 8-11). For involvement in child-care, Cowan et al. (2009) found that the 96 fathers who attended a parenting intervention group with the child's mother had more involvement in child-care tasks than the 95 fathers who attended alone. Moreover,

Cowan et al. (2008) found that fathers' satisfaction with their couple relationships predicted their engagement with their children, for married, divorced, and never-married fathers. With respect to involvement in schooling, Berryhill (2017) sampled over 1800 mothers and fathers and found that coparenting support was significantly related to fathers' home-based (e.g., reading books, helping with homework) and school-based involvement with their typically developing children (e.g., attending open-houses, attending a class event), regardless of their coresident status. The relationship between supportive coparenting relationships and father involvement has not yet been researched for fathers of children with autism, though one study of over 240 Polish fathers of children with disabilities (including 15 with autism) found that fathers' cooperation with their wives was related to fathers' involvement in the care of their children and in the education of their children (Bragiel & Kaniok, 2014).

The coparenting relationships of parents of children with autism may be affected by their children's diagnosis. One study that reviewed questionnaires from nearly 500 parents of children with autism, found that 29% said that their children's diagnosis had a 'great negative impact' on their relationship with their coparents, and another 43% said that their children's diagnosis had a 'slight negative impact' (Sim, Cordier, Vaz, Netto, & Falkmer, 2017). Mendez and colleagues (2015) interviewed nine parents of children with autism (aged 3-6) about raising their children with their partners and found themes of both supportive coparenting (e.g., *Building Up*, *Balancing*, and *We're a Team*) and unsupportive coparenting (e.g., *Separate Tracks* and *Call Me If You Need Me*). Furthermore, Derguy et al. (2015) interviewed 50 mothers and fathers of children with autism (aged 3-10) regarding their needs and found a theme of *Relational Support*.

Despite the impact of their children's diagnosis, fathers of children with autism may also experience benefits from higher coparenting relationship quality. For instance, higher

coparenting relationship quality was associated with less parenting stress for over 150 parents of children with autism under the age of 13 (May et al., 2015). Longitudinally, for the 46 fathers of children with disabilities who completed self-reported questionnaires (aged 1-9), their higher coparenting quality predicted decreased parenting stress and increased well-being one year later (Norlin & Broberg, 2013). A recent study found that higher coparenting relationship quality was related to greater life satisfaction for fathers of children with autism (Tidman, Gomez, & Ekas, 2019).

Theoretical Background

Support from coparenting partners can influence fathers' motivation to become involved with their children. Ryan and Deci (2000) noted that behaviours are exhibited as a result of either intrinsic or extrinsic motivation. That is, individuals exhibit behaviours for authentic/self-determined purposes, or as a result of external pressures/rewards. In their self-determination theory, Ryan and Deci (2000) expanded on the singular view of motivation (i.e., motivated or not) and focused on what kind of motivation is being exhibited in the specific moment. In this framework, individuals' behaviours can be motivated by both intrinsic and extrinsic motivation, and the specific motivation may change from situation to situation, or behaviour to behaviour. The present researcher used self-determination theory to provide an understanding for how extrinsically motivated behaviours can become more intrinsically motivated. Ryan and Deci (2000) suggested that individuals have four main ways of regulating their behavior and that these four regulatory styles fall on a continuum from most self-determined to least self-determined. As individuals come to value and internalize a behaviour, their motivation for this behaviour becomes more self-determined.

Ryan and Deci (2000) proposed that intrinsic regulation is the most self-determined regulatory style. With intrinsic regulation, individuals have a personal desire to master their environment and seek pleasure in the absence of external rewards. In this case, fathers may become involved with their children because they truly enjoy this and find it pleasurable (Ryan & Deci, 2000).

Extrinsic motivation refers to behaviours that are exhibited as a means to an end. Ryan and Deci (2000) proposed three unique regulatory styles that fall within extrinsic motivation. These include external regulation, introjected regulation, and identified regulation, ranging from least to most self-determined. External regulation indicates that individuals' behaviours are governed entirely by external sources in the environment that provide control (e.g., rewards or punishments). In this case, fathers may become involved with their children because they are court-mandated to or because their partners are working and they are the only one around (Ryan & Deci, 2000). Introjected regulation indicated that individuals' behaviours are controlled by external sources that are now internalized and become self-imposed pressures (e.g., guilt or anxiety). For instance, fathers using introjected regulation may become involved with their children to avoid feelings of guilt or conflict (Ryan & Deci, 2000). Identified regulation refers to when individuals' external regulatory processes become internalized and integrated into their sense of selves and become consistent with their own values. Although identified regulation is considered to be extrinsically motivated, as the behaviour is exhibited for external reasons, it is considered to be more self-determined, as it is internally regulated. Fathers using identified regulation may become involved with their children because they value being involved, rather than because they find this activity pleasurable (Ryan & Deci, 2000).

Ryan and Deci (2000) proposed that specific social conditions, including interpersonal relationships, can nurture more self-determined motivation and internalization by satisfying individuals' needs. According to self-determination theory, humans have three innate psychological needs (Ryan & Deci, 2000). Specifically, humans have a need for competence (i.e., to feel that they *can* do the behaviour), a need for relatedness (i.e., to feel that they are *supported* in doing the behaviour), and a need for autonomy (i.e., to feel that they have the *freedom* to do the behaviour). Social conditions that make individuals feel as though they can do the behaviour well, that they are connected to and supported by others, and that allow them the freedom to attempt the behaviour, facilitate the integration of the behaviour into their set of values and sense of selves.

When these three needs are met, individuals' motivation becomes more self-determined and intrinsically motivating (Ryan & Deci, 2000). Individuals' needs can be supported by their social environments, including their friends, family, and parenting partners. For fathers of children with autism, support from their parenting partners may be especially important and influential (see Altieri & von Kluge, 2009; Brobst, Clopton, & Hendrick, 2009; Fiske, Pepa, & Harris, 2014; Hock, Timm, & Ramisch, 2012; Knapp, 2014; Ramisch, Onaga, & Oh, 2014; Sim, Cordier, Vaz, Netto, & Falkmer, 2015). Coparents who communicate feedback that conveys feelings of competence can support fathers' need for competence and enhance their intrinsic motivation to become involved in parenting. Similarly, coparents who provide a sense of security and support can meet fathers' need for relatedness and enhance feelings of intrinsic motivation to become involved in parenting. Finally, fathers who are allowed opportunities for self-direction and exploration by their coparents will become more self-determined in their motivation to be involved in parenting, as their need for autonomy is being met.

It follows that the more intrinsically motivated individuals are to perform a behaviour, the more they will in turn do so. A main tenet of self-determination theory is that individuals who are more self-determined in their behaviour have more engagement and persistence in their behaviour (Ryan & Deci, 2000). Ryan and Deci (2000) also stated that individuals who are more self-determined have more enjoyment and interest in their behaviour, and greater psychological well-being. That is, being self-determined toward a goal can lead to positive outcomes for individuals.

Self-determined motivation has been found to lead to positive outcomes for adults in many areas of life. Deci and Ryan (2008) noted that self-determined motivation was consistently related to positive psychological health and to enhanced energy. Self-determined motivation has also been positively related to happiness and physical health (see Miquelon & Vallerand, 2008), increased physical exercise (Wilson, Mack, & Grattan, 2008), greater work satisfaction and performance (Vansteenkiste et al., 2007), and closer romantic relationships, including: more honest interactions, more understanding, more affection, and greater negotiation of conflict (see La Guardia & Patrick, 2008, for a review).

With respect to the behaviour of parenting, fathers who are more self-determined in their motivation for involvement may similarly have positive outcomes. Previous research on father involvement has found support for self-determination theory. For fathers of typically developing preschool children, having their needs for competence, relatedness, and autonomy supported by their partner was significantly related to more intrinsic motivation for involvement with their children, which in turn was significantly related to increased father involvement and satisfaction with parenting (Bouchard, 2000; Bouchard & Lee, 2000; Bouchard, Lee, Asgary, & Pelletier, 2007). Similarly, for fathers of typically developing elementary school-aged children, fathers'

reports of their competence, relatedness, and autonomy were significantly related to their intrinsic motivation for involvement in parenting; and that intrinsic motivation for involvement in parenting was related to both fathers' involvement in, and satisfaction with, parenting (Ladage, 2015; Ray, 2016). Additional research has found that fathers' higher perceived competence in parenting (i.e., their self-esteem or need for competence) was significantly related to more involvement in physical play with their typically developing children (Freeman, Newland, & Coyl, 2008).

Fathers' perceptions of the support that they receive from their parenting partners can also have effects for fathers. For instance, fathers' perceptions of their partners' confidence in their parenting skills was related to their involvement in parenting and caregiving behaviours with their typically developing children (McBride & Rane, 1998; Maurer, Pleck, & Rane, 2011; Pasley, Futris, & Skinner, 2002).

In considering self-determination theory, when fathers feel that their parenting partners' build up their sense of competence in parenting, are available to them, support them, and encourage their autonomy in parenting, then their motivation to be involved in parenting may be more intrinsic. Furthermore, when fathers motivation for involvement in more intrinsic, they may then become more involved, be more satisfied with their involvement, and experience more positive outcomes from their involvement.

Father Involvement

The operationalization of father involvement has typically been defined in terms of the quantity of caregiving behaviours that fathers provide in comparison to that of mothers (Darling, Senatore, & Strachan, 2012; Hawkins & Palkovitz, 1999; John, Halliburton, & Humphrey, 2013; Kerry, 2000; Saracho & Spodek, 2008). This operationalization implicitly assumed that mothers'

involvement was more important or valuable than fathers, and that it is not important how much fathers are involved, only if they are as involved as mothers.

In 2004, Lamb introduced a clearer conceptualization of father involvement that included three components, namely: positive engagement activities, warmth, and control. Positive engagement activities include any direct physical interaction with the child in positive activities. Warmth centers on the responsiveness to the child, and control centers on knowing the child's whereabouts. According to Lamb (2004), positive engagement activities are described as a more quantitative component of father involvement (i.e., frequency of engagement activities), whereas warmth and control are described as more qualitative components (i.e., intensity of warmth or control).

Paquette (2004) proposed that mothers and fathers have complementary parenting roles. Specifically, fathers' involvement tends to involve physical play interactions, which complements mothers' tendency to be involved in caregiving and attachment-based interactions (Paquette, 2004). Fathers are often one of their children's first play partners and their interactions with children often includes roughhousing and physical play (Coyl-Shepherd & Hanlon, 2013; Dumont & Paquette, 2013; Fletcher et al., 2013; Flippin & Crais, 2011; John, Halliburton, & Humphrey, 2013; Kerry, 2000; Newland et al., 2013; Paquette, 2004; Phares, Fields, & Kamboukos, 2009). Coyl-Shepherd and Hanlon (2013) found that fathers' family play involved more frequent physical contact and rough-and-tumble play than did mothers. These findings are consistent cross-culturally, with fathers more involved in physical play, outdoor games, and sports than are mothers in Canada, the U.S.A, and in Taiwan (Clark, 2008; Newland et al., 2013). As a result, father-child play can provide researchers with an opportunity to measure fathers' involvement with their children.

Play Literature

Play behaviours are diverse and context-dependent, and vary with age and environment (Fein, 1981). Definitions of play are often based on the characteristics of play, which include being pleasurable and enjoyable, being spontaneous and/or voluntary, having no imposed goal from outside sources, and involving active engagement from the ‘players’ (Garvey, 1977). Some definitions add that play is flexible and typically involves attending to the action, and not the end product, of play (Roeyers & Van Berckelaer-Onnes, 1994).

Various types of play include exploratory, physical, functional, symbolic, and relational play. Exploratory, or sensory, play is often the first sensory experience of play and may include exploring toys in a water table or digging through a sandbox (Bairaktarova, Evangelou, Bagiati, & Brophy, 2011). Physical play involves any metabolic activity above the resting rate, and can include chasing, play fighting, running, and rough-and-tumble play, as well as repetitive physical play (Pellegrini & Smith, 1998). Functional play includes a recognition of the properties of the toy, and may include rolling a car on a mat or pushing a doll in a stroller (Jordan, 2003). Symbolic, or pretend, play is the peak of cognitive play and involves the recognition that play can be separated from the pure functional attribute of the object, and that objects can have ‘pretend’ functions or qualities (Jordan, 2003; Leslie, 1987). This may include using a block of wood as a cell phone or pretending a doll is sick. As children’s play becomes more cognitively complex, it also becomes more social. Relational, or social, play includes a process that begins with noticing the play of others, then playing alongside them, and eventually playing cooperatively or collaboratively (Jordan, 2003). Typically developing children are noted to exhibit all of these types of play in accordance with their cognitive and social development (Jordan, 2003).

In contrast, children with autism, given their unique difficulties in cognitive and social development, tend to engage in more exploratory and physical/repetitive play, and less functional, symbolic, and/or relational play (Flippin & Watson, 2011; Jordan, 2003; Potvin et al., 2013; Wing, 2003; and see Jung & Sainato, 2013 for a literature review). In a recent qualitative study of 20 fathers of children with autism (aged 4-11), themes of *Narrow/Rigid Play*, *Cognitive Limitations*, *Imaginative Limitations*, and *Social Limitations*, highlighted these difficulties and limitations (Bloom, 2015). Jordan (2003) noted that children with autism appeared comfortable with certain aspects of physical play with both their mothers and fathers, including chasing and ‘rough-and-tumble’. The few studies that have explicitly measured fathers’ play found both quantitative and qualitative evidence that they engaged in physical play with their children with autism, including small physical fights, swimming, tossing in the air, and play wrestling (Bloom, 2015; Potter, 2016a). As a result, focusing on physical play can help to shine a light on the play experiences of fathers with their children with autism.

Definitions of physical play additionally include at least moderate physical activity that results in a metabolic rate above the resting rate (Pellegrini & Smith, 1998; Simons-Morton et al., 1990). Fletcher and colleagues (2013) added that high-quality physical play included fathers who were attentive, playful, who communicated enjoyment, and who were attuned to their children’s abilities and interests. Physical play has various forms, including rhythmic stereotypies, exercise play, and rough-and-tumble play (Pellegrini & Smith, 1998).

Rhythmic stereotypies are defined as gross motor movements that are typically exhibited by infants and toddlers (Pellegrini & Smith, 1998). In addition, rhythmic stereotypies are also a defining symptom of children with autism (American Psychiatric Association, 2013). Given that the present study included children aged 4-11 (i.e., not infants or toddlers), and that this

behaviour was a symptom of autism (i.e., not representative of developmentally appropriate ‘play’), this was not an appropriate measurement of physical play for the present study. Instead, physical play was best conceptualized as including exercise play and rough-and-tumble play. These two forms of play are often discussed together. They include play that is physically vigorous and play that can be engaged in either alone or with others. Exercise play is often described in terms of play activities, such as running, jumping, or playing a sport (Pellegrini & Smith, 1998). Rough-and-tumble play is often described in terms of playful and vigorous behaviours, such as piggyback riding, or play wrestling (Pellegrini & Smith, 1998).

Play in Children with Autism

The characteristic impairments in social communication and interaction of children with autism can make friendships with same-aged peers difficult. Research suggests that children and adolescents with autism develop fewer friendships with peers (Koning & Magill-Evans, 2001, Orsmond et al., 2004), and that many of these involve less play, physical activity, and/or social interaction (Bauminger & Kasari, 2000, Childress, 2011; Obruskinova & Cavalier, 2010). In addition, Potvin et al. (2013) noted that children with autism may have fewer opportunities to participate in structured or semi-structured sport and/or recreation activities.

Although social communication and interaction impairments in children with autism may lead to less play with same-aged peers, research suggests that these children may have more play interactions with their parents. Solish et al. (2010) found that children with autism (aged 5-17) participated in fewer recreational activities with peers than both typically developing children and children with intellectual disabilities. On the other hand, children with autism participated in more recreational activities with their parents than both typically developing children and children with intellectual disabilities. Orsmond et al. (2004) found comparable rates for children

with autism, children with other developmental disabilities, and typically developing children, in their participation in social and recreational activities with parents. Furthermore, Potvin et al. (2013) found that children with high-functioning autism participated more frequently in recreational activities either alone or with their family, whereas a matched sample of neurotypical peers participated more often with others. Thus, children with autism engage in recreational or play activities with their parents as much as, or more than, other children. Interviews with parents of children with autism have supported this finding. For instance, parents indicated that their children had fewer opportunities for recreational activities with others outside of the family, and that parents then facilitated activities both inside and outside of the home to counteract this (Mactavish & Schleien, 2004). Moreover, in a recent study of 20 fathers of children with autism (aged 4-11), a theme of *Social Limitations* was identified, with one father stating “with my son, I feel sometimes a bit too much that I am kind of the only one that he plays with and it’s harder for him to play with other people” (Bloom, 2015, p.59).

Parents of children with autism may have a responsibility to facilitate play development with their children with autism (Wolfberg, 1999). In addition to the characteristic deficits in social communication and interaction, children with autism tend to take turns during play less often, initiate play less often, and engage in play that is more repetitive, object-focused, and passive (Childress, 2011; Freeman & Kasari, 2013; Pisula, 2008). Given these unique challenges, fathers have to adjust their approach while playing with their children with autism, including activating and sustaining play, and being flexible in their interactions to modify their behaviour to respond to their children’s unique characteristics (Kopp, 1982). Thus, fathers of children with autism were found to be more directive during play, initiate more during play, overcompensate for their children’s disability, and reported being more frustrated in not knowing effective ways

of playing with their children (Elder et al., 2003; El-Ghoroury & Romanczyk, 1999; Freeman & Kasari, 2013). During interviews, 20 fathers of children with autism (aged 4-11) made the following recommendations for play: *Be Flexible, Be Patient, Follow the Child's Lead and Interest, and Attend to your Child's Enjoyment* (Bloom, 2015). These findings are echoed by Mitchell and Lashewicz (2015, 2018) who interviewed 28 fathers and 11 fathers of children with autism, (aged 3-15 and 5-12 respectively), regarding their engagement in leisure activities and found themes of adjustment (e.g., *Stories of Adjustment and Adjusting Expectations*). Despite these unique challenges, fathers have been found to engage in physical play with their children with autism (Bloom, 2015; Jordan, 2003; Potter, 2016a).

Fathers' Physical Play with Children with Autism

In considering fathers' play with their children with autism, particularly their engagement in physical play, an important consideration is the gendered undertones of this type of interaction. Physical play has been an important piece in the conceptualization of fatherhood, with some theories going so far as to say that fathers' involvement in physical play is complementary to mothers' involvement in caregiving in the development of attachment relationships (Paquette, 2004). Furthermore, it is well known cross-culturally, that fathers are more involved in physical and rough-and-tumble play with their children than are mothers (Clark, 2008; Coyl-Shepherd & Hanlon, 2013; Dumont & Paquette, 2013; Newland et al., 2013; Paquette, 2004). For the purposes of the present study, the benefits of focusing on fathers' physical play are twofold, as fathers are known to engage in physical play with their children with autism, and both fathers and their children can benefit from this involvement.

Though few quantitative studies exist on the topic, fathers have been found to engage in physical play with their children with autism (Bloom, 2015; Potter, 2016a). Bloom (2015) found

that 20 fathers reported engaging in physical play behaviours (e.g., piggyback riding, tickling) and play activities (e.g., jumping on trampoline, board games, cooking) with their sons with autism (aged 4-11). One father stated, “he’s just starting to learn hide-and-seek, stuff like that, wrestling on the carpet, he’ll jump on me or I’ll jump on him, or poking at each other” (Bloom, 2015, p. 66). Potter (2016a) found that 75% of fathers reported playing with their children with autism (aged 19 and under) ‘several times a week’ or ‘every day’ and there was no difference in fathers’ frequency of play between their sons and daughters. However, Potter (2016a) found that fathers played more frequently with their younger children (10 years and under) than with their older children (over 10 years). In a similar vein, although no effect was found for child age, Bloom (2015) controlled for child age in his study as several fathers reported that they played with their children differently depending on their children’s age.

Other research has shown similar findings. For instance, Pisula (2008) found that 14 fathers of children with autism (aged 3-6) engaged in more physical contact (i.e., hugging, tickling, touching) during play than fathers of typically developing children or children with Down’s syndrome. In 2013, Vacca interviewed eight fathers of children with autism and found that all fathers reported playing physically with their children (e.g., throwing in the air, wrestling), in an effort to get them to smile and laugh. Keller et al. (2014) also interviewed seven fathers of children with autism (aged 4-6) and identified a theme of *Shared Activities*, which included physical touching (e.g., snuggling or wrestling).

Furthermore, both fathers and their children with autism may benefit from engaging in physical play. Bloom (2015) found that fathers’ involvement in physical play with their children with autism (aged 4-11) was significantly related to higher father-child relationship quality. Qualitative evidence was also found, highlighting that play builds the father-child relationship

and leads to feelings of closeness and affection between fathers and their children. Involvement in play has been found to be related to lower parenting stress in fathers of typically developing children as well (see Coyl-Shepherd & Hanon, 2013; Torres et al., 2014). For children with autism, numerous benefits from engaging in play with both their parents have been found, including: improved cognitive ability, socio-emotional well-being, communication, and motor skills (see Childress, 2011 for a review of the benefits for children with disabilities of engaging in play with their parents).

Fathers' Child-Care Literature

The literature on fathers' involvement in play with their children paints a clear, but incomplete, picture of father involvement. Fathers are more than 'play partners' and their involvement with their children includes activities and responsibilities beyond play, including their involvement in child-care (Lamb, 2010). As a result, several researchers make the case that definitions of father involvement should include many aspects, including: care-giving (e.g., bathing, dressing, feeding), transportation, teaching, and/or disciplining (Hawkins & Palkovitz, 1999; Lamb, 2004; 2010). These can be collectively referred to as fathers' involvement in child-care.

Fathers' involvement in child-care can be influenced by parents' level of education, employment status, and the child's sex. Several studies have demonstrated a relationship between greater level of education and greater involvement in child-care for fathers cross-culturally (Bianchi, Robinson, & Milke, 2006; England & Srivastava, 2013; Guryan, Hurst, & Kearney, 2008; McMunn et al., 2017). With respect to parents' employment status, several studies have found this to be related to fathers' involvement in child-care. Fathers' involvement in child-care is positively related to the amount of hours worked by mothers and negatively

related to the amount of hours worked by fathers (Bonney, Kelley, & Levant, 1999; Raley, Bianchi, & Wang, 2012; McMunn et al., 2017). In addition, Chesley and Flood (2016) compared at-home fathers to breadwinner fathers and found that at-home fathers were involved in significantly more child-care activities during the week and the weekends with their typically developing children. Pleck and Pleck (1997) detailed in their review article that fathers tended to be more involved with their sons than with their daughters. A recent study found a similar relationship, with fathers more involved in playing games, putting their child to bed, and supervising their child alone with typically developing sons than with daughters (McMunn et al., 2017).

Fathers' Child-Care of Children with Autism

Although fathers are involved in child-care activities, only a few studies have looked at fathers' involvement in child-care with their children with autism. One mixed-methods study by Potter (2016a) surveyed 306 British fathers of children with autism (aged 19 and under) on their involvement with their children. Potter (2016a) found that half of fathers were 'mainly' or 'equally' responsible for managing their children's morning, evening, and bedtime routines, and their sleeping problems. In addition, nearly half of the fathers indicated that they helped their children with homework and attended school meetings 'many times', and nearly three-quarters reported transporting their children to activities or appointments 'several' or 'many' times (Potter 2016a). Potter (2016c) interviewed 25 of these fathers and half of them indicated being 'significantly' involved in the formal procedures at school for identification as a student with a disability, and five reported being involved in the school in other capacities (e.g., parent-teacher association). Isenhour (2010) interviewed six fathers of sons with autism (aged 5-17) and found a theme of *Involvement in Education* that included helping with homework, participating in

educational decision-making, and attending Individual Education Plan meetings. Furthermore, Hay (2016) interviewed seven fathers of children with autism (aged 3-20) and found that three were actively involved in care-giving with their children. Though few quantitative studies exist on fathers' involvement in child care with their children with autism, Potter (2016a) reported that fathers with full-time employment were significantly less involved in the morning routine than fathers without full-time employment (e.g., part-time, retired, not in work); no differences were found regarding the child's sex.

Potential Outcomes for Fathers of Children with Autism

According to self-determination theory, individuals who engage in more intrinsically motivated (i.e., self-determined) behaviour will be more satisfied with their involvement and have greater psychological well-being (Ryan & Deci, 2000). Thus, when fathers' motivation for involvement with their children is more self-determined, they may report higher satisfaction and well-being. There have been few studies on satisfaction with involvement for fathers of children with autism. In one study, over 60% of fathers reported being satisfied with their involvement in child-care and play activities (Potter, 2016a). In another, Bloom (2015) found that fathers' satisfaction with play was related to greater well-being, including lower parenting stress and greater life satisfaction. Improving well-being may be especially important for fathers of children with autism, as they report higher parenting stress than other fathers with and without children with disabilities (Hayes & Watson, 2013).

Satisfaction with Involvement. In 2016, Potter surveyed 306 fathers of children with autism about their involvement in various child-care and play activities. In this study, 61% of fathers reported being satisfied with their overall level of involvement (Potter, 2016a). Mitchell

and Lashewicz (2015) interviewed 28 fathers of children with autism (aged 3-15) about their involvement in leisure activities and identified themes of *Satisfaction as Fathers* and *Joy*.

With respect to play, Bloom (2015) found that fathers' satisfaction with play was significantly related to fathers' well-being, including parenting stress and satisfaction with life, for fathers of children with autism (aged 4-11). Furthermore, qualitative interviews illustrated the importance of fathers' satisfaction with play, with themes of *Positive Emotions* and *Quality Time Together* (Bloom, 2015). No other studies were found on fathers' satisfaction with play for fathers of children with autism.

Research has found similar results for families of typically developing children. For instance, fathers' leisure satisfaction was the strongest predictor of family cohesion, adaptability, and functioning in both American (Buswell, Zabriskie, Lundberg, & Hawkins, 2012) and Canadian fathers of typically developing children (Nua, 2013). Moreover, parents' satisfaction with leisure activities was significantly related to parents' satisfaction with family life, over and above parents' involvement in leisure activities (Agate, Zabriskie, Agate, & Poff, 2009; Poff, Zabriskie, & Townsend, 2010).

Parenting Stress. Raising children with autism can be stressful, as evidenced by the experiences of fathers of children with autism. Fathers of children with autism reported higher daily stress than did fathers of typically developing children or children with Down's syndrome (Baker-Ericzen, Brookman-Frazee, & Stahmer, 2005; Dabrowska & Pisula, 2010; Darling, Senatore, & Strachan, 2012; Fayerberg, 2012; McStay et al., 2014; Merkaj, Kika, & Simaku, 2013; Sanders & Morgan, 1997). A recent meta-analysis found that parents of children with autism reported higher parenting stress than did parents of typically developing children and children of varying diagnoses (e.g., Down's syndrome, cerebral palsy, cystic fibrosis, fragile X

syndrome; Hayes & Watson, 2013). For children with autism, mixed findings exist on the influence of children's age on fathers' parenting stress, with some studies reporting that younger age was related to higher parenting stress (Baker-Ericzen, Brookman-Frazee, & Stahmer, 2005; Bloom, 2015; Sabih & Sajid, 2008), and others reporting no effect (McStay et al., 2014).

In addition, there are mixed findings comparing parenting stress of fathers and mothers of children with autism. The majority of previous research has found that mothers of children with autism experience greater stress than fathers (Baker-Ericzen et al., 2005; Dabrowska & Pisula, 2010; Merkaj et al., 2013), though a few studies have found that fathers of children with autism experience stress at comparable (Davis & Carter, 2008) or greater levels than do mothers (Rivard, Terroux, Parent-Boursier, & Mercier, 2014). Regardless of the mixed findings, it is evident that both fathers and mothers of children with autism experience elevated levels of parenting stress, especially when compared to parents of typically developing children and children with other diagnoses.

Present Study

The present study examined fathers' coparenting relationship quality and its relationship to fathers' motivation for involvement with their children. The present study also examined whether fathers' motivation for involvement was more self-determined when they were more supported by their coparents, and if fathers were more involved, more satisfied with their involvement, and had less parenting stress. The present study measured fathers' involvement by measuring the frequency of physical play behaviours and activities, and child-care activities that fathers engaged in with their children with autism.

Definition of Terms. For the present study, the term 'fathers' was defined as any self-identified male father figures of children with autism. These father figures may have included,

but were not limited to, biological fathers, stepfathers, grandfathers, foster fathers, adoptive fathers, or mothers' boyfriends. All individuals who identified themselves as fathers of children with autism were eligible to participate in the present study.

The term 'coparents' was defined as any adults identified by fathers as their primary parenting partners with whom they shared parenting responsibilities and childrearing. Fathers' coparents could have included, but were not limited to, wives, ex-wives, current partners, current girlfriends, or siblings. Each father must have identified a coparent in order to have been eligible for the present study.

Fathers' physical play consisted of both physical play behaviours and activities. Physical play behaviours focused on hands-on interactions between fathers and their children, including behaviours like wrestling and tickling. These related to the rough-and-tumble play component of physical play, as described in Pellegrini and Smith (1998). Physical play activities included games or activities that fathers engaged in with their children, such as jumping on the trampoline and cooking. The list of physical play activities in the present study were generated from a previous study on fathers of children with autism (Bloom, 2015, see Appendix A). These represented the exercise play component of physical play, as described in Pellegrini and Smith (1998). Positive engagement activities, a component of Lamb's (2004) definition of father involvement, was represented by both physical play behaviours and activities.

Fathers' involvement in child-care activities included their involvement in the care, education, and therapy of their children with autism. Involvement in care focused on fathers' provision of the basic necessities for their children, including feeding, dressing, and bathing. Involvement in education focused on fathers' teaching of skills and values to their children.

Involvement in therapy focused on fathers' involvement in the therapy of their children and in parent-training activities.

Participants for the present study were fathers of children with autism aged 4-11.

Children's diagnosis of autism was confirmed with parental reports and with the completion of a screening questionnaire. The age range was chosen because most children with autism are diagnosed by the age of 4 and will have developed enough physically to engage in various forms of play, education, and therapy. Moreover, children begin entering into adolescence by the age of 12. Adolescence includes many physical (e.g., puberty), social, and educational expectations that are unique to this age range. As such, fathers' involvement with their children with autism was limited to children aged 4-11.

For the present study, individuals and stakeholders within the population of interest (e.g., fathers of children with autism) acted as collaborators throughout the research process (Whyte, Greenwood & Lazes, 1989). This helped to ensure that the goals, methods, and conclusions of the study were relevant and helpful to fathers of children with autism, the population of interest. Having stakeholders involved in the research process allows for a shared understanding between researchers and the public, and more translation between decision-making and implementation (Boaz et al., 2018; Deverka et al., 2012). Previous studies on fathers of children with autism have noted that using this method of research was beneficial (Bloom, 2015; Fletcher-Watson et al., 2018). A father of a son with autism served as a Parent Advisor in the present study. The Parent Advisor actively collaborated with the researcher throughout the research process, including with survey development, recruitment, and thematic analysis.

Qualitative Component. The present study employed a mixed-methods design, with quantitative data collected from an online survey and qualitative data collected from open-ended

survey questions and follow-up telephone interviews, and both were used in parallel for the results. Qualitative analysis is a methodology that helps to describe, interpret, and understand individuals, and can be particularly helpful for unique populations by allowing for more richly detailed descriptions of individuals' experiences (Johnson & Onwuegbuzie, 2004; Kazdin, 2003). Taking a mixed-methods approach by combining qualitative and quantitative information can help to gain a deeper understanding of the results by using qualitative information and to simultaneously generalize results by using quantitative information (Johnson & Onwuegbuzie, 2004; Kazdin, 2003). Moreover, by collecting the qualitative and quantitative information concurrently, both are given equal priority and can be used to complement each other in the interpretation stage (Johnson & Onwuegbuzie, 2004; Kazdin, 2003). This type of mixed-methods approach can provide a rich description that can be helpful for under-researched participants like fathers of children with autism (Cridland, Jones, Caputi, & Magee, 2015). Qualitative analysis has been used to complement quantitative analysis previously with fathers of children with autism (see Bloom, 2015, Potter, 2016a). Given that little research exists on the coparenting quality of fathers of children with autism, a qualitative component was an important part of the present study.

Research Questions and Hypotheses

The research questions of the present study were developed to further the literature on fathers of children with autism. They are listed in detail below, along with their rationale and subsequent hypotheses.

Research Question 1: How is fathers' motivation for involvement with their children with autism related to the support they receive from their coparents?

According to self-determination theory, when an individual's needs for competence, relatedness, and autonomy were supported, their behaviour becomes more intrinsically motivating (Ryan & Deci, 2000). Fathers of children with autism have to increasingly rely on their coparents for support, given the stress they experience and the lack of external or formal supports (Birnbaum et al., 2012; Hock et al., 2012; Marsack & Samuel, 2017; Sim et al., 2015). Previous research with fathers of typically developing children has found that when fathers' needs for competence, relatedness, and autonomy are supported by their coparent, they were more intrinsically motivated to be involved with their children (Bouchard, 2000; Bouchard et al., 2007; Ladage, 2015; Ray, 2016). From this, Hypothesis 1 was developed.

Hypothesis 1: Fathers' total motivation for involvement. It is predicted that coparenting relationship quality will be related to fathers' total self-determined motivation for involvement with their children.

1a: Intrinsic involvement in physical play. It is hypothesized that higher coparenting relationship quality will be positively related to intrinsic total motivation for involvement in physical play.

1b: Intrinsic involvement in play activities. It is hypothesized that higher coparenting relationship quality will be positively related to intrinsic total motivation for involvement in play activities.

1c: Intrinsic involvement in child-care. It is hypothesized that higher coparenting relationship quality will be positively related to intrinsic total motivation for involvement in child-care.

Research Question 2: How are fathers involved with their children with autism and what are the predictors of this involvement?

Previous research suggested that fathers are involved with their children with autism, in both play (see Bloom, 2015; Jordan, 2003; Mitchell & Lashewicz, 2018; Potter, 2016a; Vacca, 2013) and childcare (see Meadan et al., 2015; Potter, 2016a; Potter, 2016b). However, less is known about the predictors of this involvement. For fathers of typically developing children, the literature suggested that supportive coparenting relationships were related to fathers' more frequent involvement with their children (Berryhill, 2017; Chen, 2012; Carlson et al., 2008; Cowan et al., 2008; Schoppe-Sullivan et al., 2008). Less is known regarding fathers of children with autism, though one study in Poland found a similar relationship between coparenting support and fathers' involvement (Bragiel & Kaniok, 2014). From this, Hypotheses 2 was developed.

Hypothesis 2: Fathers' involvement. It is predicted that coparenting relationship quality will be related to fathers' involvement with their children in physical play, play activities, and child care. It is also predicted that fathers' total motivation for involvement will mediate this relationship.

2a: Involvement in physical play. It is hypothesized that higher coparenting relationship quality will be positively related to the frequency of fathers' involvement in physical play.

2b: Mediation. It is hypothesized that the relationship between coparenting relationship quality and the frequency of fathers' involvement in physical play will be mediated by fathers' intrinsic total motivation.

2c: Involvement in play activities. It is hypothesized that higher coparenting relationship quality will be positively related to the frequency of fathers' involvement in play activities.

2d: Mediation. It is hypothesized that the relationship between coparenting relationship quality and the frequency of fathers' involvement in play activities will be mediated by fathers' intrinsic total motivation.

2e: Involvement in child-care. It is hypothesized that higher coparenting relationship quality will be positively related to the frequency of fathers' involvement in child-care activities.

2f: Mediation. It is hypothesized that the relationship between coparenting relationship quality and the frequency of fathers' involvement in child-care activities will be mediated by fathers' intrinsic total motivation.

Research Question 3: How are fathers satisfied with their involvement with their children with autism and what are the predictors of this satisfaction?

Previous research suggested that fathers are fairly satisfied with their involvement with their children with autism (Bloom, 2015; Potter, 2016a). However, less is known about the predictors of this involvement and satisfaction with involvement.

Hypothesis 3: Fathers' satisfaction with involvement. It is predicted that coparenting relationship quality will be related to fathers' satisfaction with involvement with their children in physical play, play activities, and child care. It is also predicted that fathers' total motivation for involvement will mediate this relationship.

3a: Satisfaction with involvement in physical play. It is hypothesized that higher coparenting relationship quality will be positively related to fathers' satisfaction with involvement in physical play.

3b: Mediation. It is hypothesized that the relationship between coparenting relationship quality and fathers' satisfaction with involvement in physical play will be mediated by fathers' intrinsic total motivation.

3c: Satisfaction with involvement in play activities. It is hypothesized that higher coparenting relationship quality will be positively related to fathers' satisfaction with involvement in play activities.

3d: Mediation. It is hypothesized that the relationship between coparenting relationship quality and fathers' satisfaction with involvement in play activities will be mediated by fathers' intrinsic total motivation.

3e: Satisfaction with involvement in childcare. It is hypothesized that higher coparenting relationship quality will be positively related to fathers' satisfaction with involvement in childcare.

3f: Mediation. It is hypothesized that the relationship between coparenting relationship quality and fathers' satisfaction with involvement in childcare will be mediated by fathers' intrinsic total motivation.

Research Question 4: How are fathers of children with autism supported by their coparents?

Since fathers of children with autism have to increasingly rely on their coparents for support, given the stress they experience and the lack of external or formal supports (Birnbaum et al., 2012; Hock et al., 2012; Marsack & Samuel, 2017; Sim et al., 2015). Feinberg (2003) and colleagues (2012) proposed a model of coparenting relationships that included childrearing agreement, division of labor, support – undermining, joint management of family interactions, and parenting-based closeness. Previous research has found evidence for each component of coparenting support for parents of children with autism (see Birnbaum et al., 2012; Kent, 2011; May, 2014; May et al., 2015; Mendez et al., 2015; Saini et al., 2015; Sim et al., 2019). A few studies have also found that greater coparenting relationship quality was related to lower

parenting stress for parents of children with autism (May et al., 2015; Norlin & Broberg, 2013).

From this, hypothesis 4 was developed.

Hypothesis 4: Parenting stress. It is predicted that coparenting relationship quality will be related to fathers' parenting stress. It is also predicted that fathers' total motivation for involvement will mediate this relationship.

4a: Parenting stress. It is hypothesized that higher coparenting relationship quality will be negatively related to fathers' parenting stress.

4b: Mediation. It is hypothesized that the relationship between coparenting relationship quality and fathers' parenting stress will be mediated by fathers' intrinsic total motivation.

Research Question 5: What are fathers' experiences of coparenting support, motivation for involvement, involvement, satisfaction with involvement, and well-being?

A qualitative research question was also developed to explore fathers' experiences of coparenting support, their motivation for involvement, their involvement with their children (in physical play, play activities, and childcare), their satisfaction with this involvement, and their well-being. Twenty of the fathers who completed the online survey participated in a phone interview with the researcher to explore this research question, as this is a new area of research with this population.

Method

Participants

Participants ($N = 76$) were self-identified father figures (e.g., biological, step, grandfather) of children with autism between the ages of 4 and 11. Each participant identified a coparenting partner, with whom he shared responsibility for parenting the child with autism. Participants completed screening questions to confirm that their children were between 4 and 11 years old, that they had a coparenting partner, and that their children had a diagnosis of autism. Moreover, fathers completed a screening tool, the Childhood Autism Spectrum Test (CAST, see Appendix B for a complete list of acronyms), to confirm their reports of their children's diagnosis of autism (see Measures section; Scott, Baron-Cohen, Bolton, & Brayne, 2002). In total, three respondents had scores below the recommended cutoff of 15. As such, these respondents did not complete the online survey or receive an incentive and were not included in any analyses.

Power analyses were computed using G*Power 3 to determine the range of participants needed to have sufficient power for quantitative analyses (Faul et al., 2007). Effect sizes in the previous literature were reviewed. However, no previous research has looked at the relationships between coparenting quality, motivation for involvement, fathers' involvement, and fathers' satisfaction with involvement, for fathers of children with autism. As a result, effect sizes from the literature on fathers of typically developing children were reviewed. With respect to coparenting quality predicting father involvement, previous research reported effect sizes ranging from 0.20 to 0.28, which suggests a sample size of 37 to 52 participants (Bouchard et al., 2007; Chen, 2012; Ladage, 2015). With respect to coparenting quality predicting fathers' satisfaction with involvement, previous research reported an effect size of 0.20, which suggests a

sample size of 52 participants (Bouchard et al., 2007). With respect to coparenting quality predicting parenting stress for fathers of children with autism, previous research reported effect sizes ranging from 0.26 to 0.33, suggesting a sample size of 32 to 41 participants (May et al., 2015; Norlin & Broberg, 2013). Given that previous research has not directly looked at the hypothesized relationships, and that the majority of previous research has looked at fathers of typically developing children, the present study used a more conservative estimate of effect size (e.g., 0.15). In total, 76 fathers of children with autism participated; with an effect size of 0.15, this resulted in sufficient power of 0.85.

As shown in Table 1, participants ($N = 76$; $M_{\text{age}} = 40.58$, $SD_{\text{age}} = 5.54$) were mostly biological fathers, with one step-father and one grandfather. The majority of participants were Canadian, white/Caucasian, at least college/university-educated, did not report having any physical or mental limitations, and lived at home with their children with autism, who were mostly sons (see Table 1). All participants responded correctly to at least two of the three validity questions.

Fathers' coparents ($M_{\text{coparent-age}} = 38.51$, $SD_{\text{coparent-age}} = 5.21$) were primarily spouses and the majority of fathers lived with their coparents (Table 1).

Table 1

Descriptive Statistics for Fathers (N=76) Who Completed the Online Survey

Variable	Frequency	Mean	Standard Deviation	Range
Father				
Father Age		40.58	5.54	30-62
Father Status				
Biological	72			
Step-Father	1			
Grandfather	1			
Lives with Coparent				
Yes	62			
No	9			
Lives with Child				
Yes	70			
No	4			
Number of Children		1.88	0.81	1-4
Other Children with autism				
Yes	9			
No	64			
Marital Satisfaction*		2.28	1.31	1-5
Income (in CDNS\$)		54,243.42	59,120.19	0-300,000
Hours Worked/Day		7.84	3.21	0-15
Physical/Mental Limitations				
Yes	8			
No	65			
Education				
Graduate School	9			
University	29			
College	21			
High School	15			
Country of Residence				
Canada	63			
United States	10			
Scotland	1			
Ethnicity†				
White/Caucasian	51			
Canadian	4			
Asian	2			
Afghan	1			
Catholic	1			
European	1			
First Nations	1			
French Canadian	1			

Variable	Frequency	Mean	Standard Deviation	Range
Indian	1			
Italian	1			
Latino	1			
Native American	1			
Coparent				
Coparent Age		38.51	5.21	25-53
Coparent Status				
Spouse	64			
Ex-Spouse	7			
Ex-Partner	1			
Other	1			
Hours Worked/Day		4.35	4.00	0-12
Child				
Child Sex				
Male	63			
Female	11			
Child Age		6.92	2.02	4-11
Age at Diagnosis		2.90	1.32	0.66-8

*Note. Rated on a scale from 1 (*Very Good*) to 5 (*Very Poor*). †Participants' self-reported ethnicities (exact terms used). All age calculations are in years.

Twenty of the 76 father participants completed an optional phone or Skype interview after they completed the online survey. 16 participants completed the interview by phone and four participants by Skype. All participants who completed the survey were asked to indicate their interest in participating in the optional phone/Skype interview. Participants were informed on the consent form that not all participants would be selected for an interview. Participants for the phone/Skype interview were recruited in two waves (see Figure 1). In general, participants were offered an interview to obtain diverse demographic characteristics (e.g., coparent status, living arrangements, child sex). Throughout the first 10 months of recruitment, 18 participants were offered a phone interview of which 11 followed through and completed the interview. Afterwards, an additional 15 participants were offered a phone interview as a purposive sample to reach the intended total of 20 participants. Of these 15 participants, nine followed through and completed the interview. By the time the final interview was completed, 43 participants had indicated an interest in completing the optional phone interview. In total, 33 participants were contacted and 20 followed through with completing the phone interview. The remaining 10 of the 43 participants were not contacted for an interview. These 10 participants were emailed thanking them for their interest and informed that the study was complete.

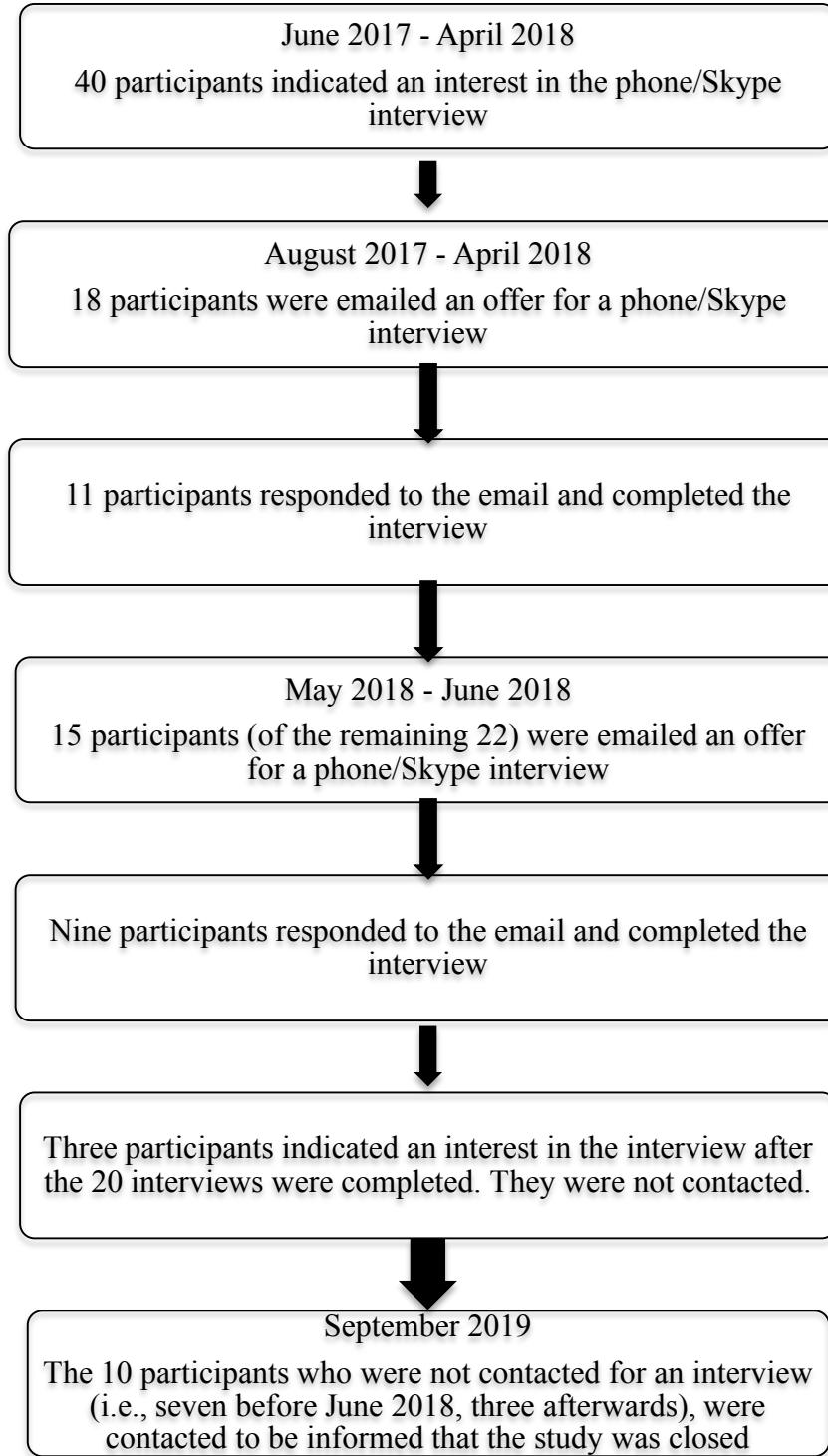


Figure 1. Flowchart detailing the process for recruiting father participants to complete the phone/Skype interview (n=20). Participants were chosen based on a diverse set of demographic information.

The interviews with participants ($n = 20$) ranged in length from 11.92 minutes to 55.6 minutes ($M_{\text{minutes}} = 24.35$, $SD_{\text{minutes}} = 10.34$). Participants were all biological fathers and the majority of fathers were Canadian, white/Caucasian, at least university-educated, who did not report having any physical or mental limitations, and lived at home with their children with autism, who were mostly sons (see Table 2). Fathers' coparents were primarily spouses and the majority of fathers lived with their coparents (Table 2).

Table 2

Descriptive Statistics for Fathers' (n=20) Telephone Interview Responses

Variable	Frequency	Mean	Standard Deviation	Range
Father				
Father Age		38.45	4.72	30-49
Lives with Coparent				
Yes	14			
No	6			
Lives with Child				
Yes	18			
No	2			
Number of Children		1.9	0.64	1-3
Other Children with autism				
Yes	5			
No	15			
Marital Satisfaction*		2.50	1.15	1-5
Income (in CDN\$)		72,631.58	33,210.54	7,000-125,000
Physical/Mental Limitations				
Yes	4			
No	16			
Education				
High School	5			
College	2			
University	8			
Graduate School	5			
Country of Residence				
Canada	18			
United States	2			
Ethnicity†				
White/Caucasian	14			
Canadian	1			
First Nations	1			
French Canadian	1			
Indian	1			
Latino	1			
Coparent				
Coparent Age		35.63	4.81	27-43
Coparent Status				
Spouse	15			
Ex-Spouse	4			
Ex-Partner	1			
Child				
Child Sex				

Variable	Frequency	Mean	Standard Deviation	Range
Male	17			
Female	3			
Child Age		6.95	1.93	5-11
Age at Diagnosis		3.03	1.07	1-5

*Note. Rated on a scale from 1 (*Very Good*) to 5 (*Very Poor*). †Participants' self-reported ethnicities (exact terms used). All age calculations are in years.

Recruitment. Over 350 autism and/or fatherhood organizations across Canada and the United States were contacted for online recruitment (e.g., posting the study flyer on their website, sending the flyer to their mailing list; see Figure 2 for a flowchart of all recruitment strategies). All organizations that agreed to help recruit participants were re-contacted after 6 months to re-post the recruitment materials. Local organizations in the Toronto and Windsor communities were also contacted for both online and in-person recruitment (e.g., allowing a researcher to attend their events), including the Summit Centre for Preschool Children with Autism. The researcher's supervisor who works part-time at the Summit Centre for Preschool Children with Autism was not directly involved in recruitment there or elsewhere.

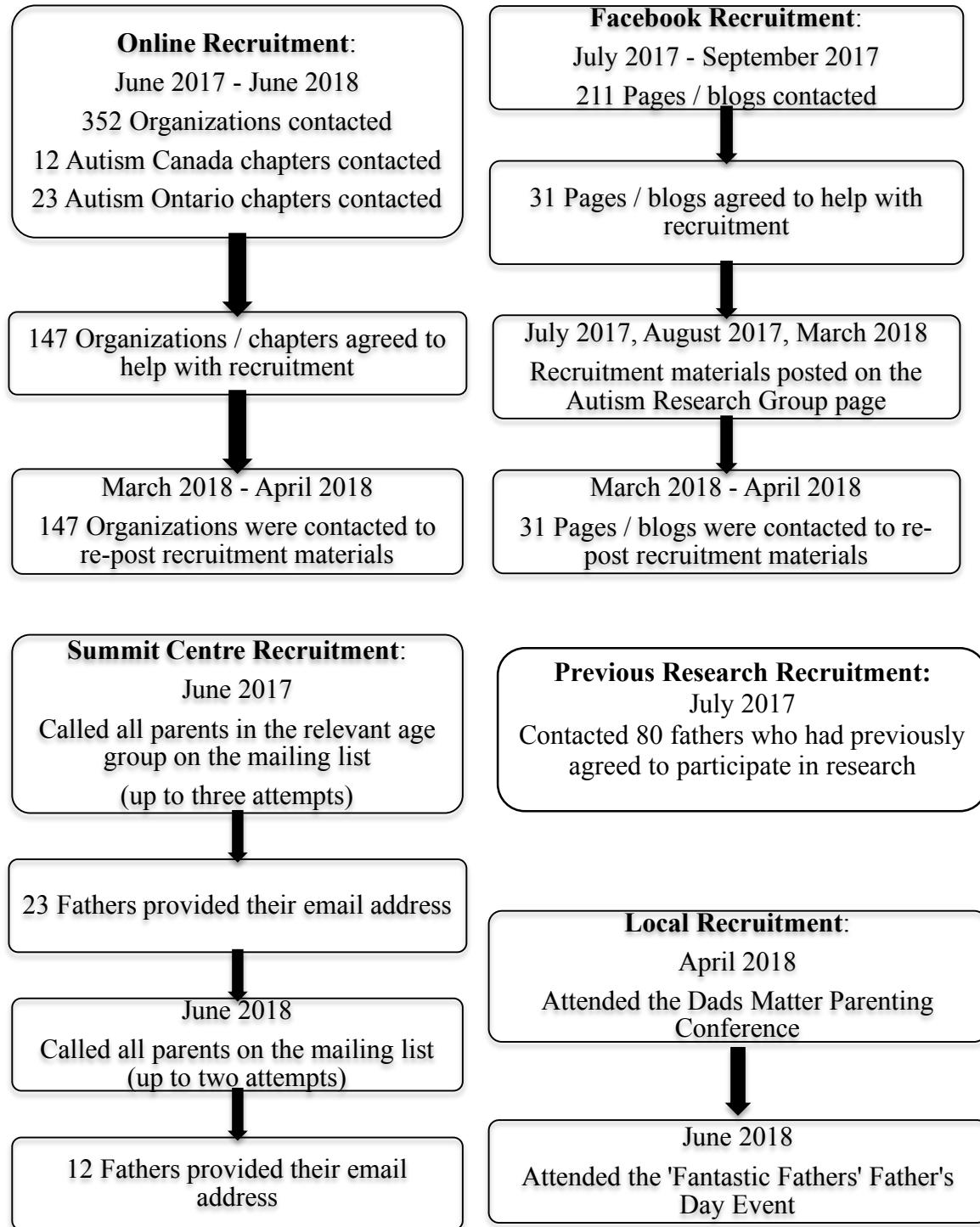


Figure 2. Flowchart detailing the recruitment strategies and process for the father participants (N=76) for the online survey for the present study.

In addition, over 210 autism and/or fatherhood Facebook pages or blogs were contacted for online recruitment (e.g., posting the study flyer on their Facebook page), including the Autism Research Group – U of Windsor Psychology Department’s Facebook page, of which the researcher is a member (see Figure 2). The study flyer was shared several times, eventually reaching over 4,000 views online. Furthermore, 80 fathers of children with autism who consented to be contacted for future research, were contacted by the researcher (see Figure 2).

The present study also employed a snowball sampling methodology to aid in recruitment (Goodman, 1961). For instance, individuals in the autism community such as the Parent Advisor, associates of the researcher such as former employers at preschools and camps for children with autism, and previously recruited participants were asked to forward the survey to prospective participants. New participants could then continue to forward it on to other prospective participants. This sampling technique is often used for populations who are difficult to access and has been successfully employed to recruit parents of children with autism (Bloom, 2015; Mandell & Salzer, 2007; Shtayermman, 2007).

Fathers who completed the present study were asked to forward the survey onto their coparents, to complete the same online survey and provide an additional point of view. Only six coparents’ participated in the online survey, and as such, they were not included in any of the present analyses and will be used for pilot data in future studies.

Measures

The survey began with three screening questions (i.e., child’s age, coparenting partner, diagnosis of autism). Participants who met the screening criteria then completed the Childhood Autism Spectrum Test (CAST) to confirm their children’s diagnosis of autism (Scott, Baron-Cohen, Bolton, & Brayne, 2002). Participants who reported scores confirming their children’s

diagnosis of autism (i.e., 15 or higher) then answered questions on coparenting quality, motivation for involvement with their children, involvement (in physical play, play activities, and childcare), satisfaction with involvement (in physical play, play activities, and childcare), and parenting stress. The presentation of these measures were counter-balanced, to help balance any practice or priming effects that items may have had on participants' responses (Kazdin, 2003). One exception was that the questions regarding fathers' involvement, satisfaction with involvement, and motivation for involvement were presented on the same page and completed concurrently, as they ask about the same items (e.g., "how often have you played board games with your child this week?; how satisfied are you with this level of involvement?; why do you engage in this with your child?"). Last, participants completed the demographic questions and indicated their choice for participating in an optional phone interview. The survey also included three validity questions to help ensure that participants were accurately reading/responding to items (e.g., "if you are reading this, please answer 3"). The researcher received permission to use, and adapt, all measures not publicly available (see Appendix C).

The Childhood Autism Spectrum Test (CAST) Screening Questionnaire. As fathers were responding to the measures online, a screening questionnaire was needed to confirm their children's diagnosis of autism. Confirming their children's diagnosis was best practice for online research (see Daniels et al., 2012). Furthermore, it was not ethical or practical to ask fathers to send the researcher a copy of their children's diagnostic report. As a result, an online screening questionnaire was preferred.

The Childhood Autism Spectrum Test (CAST) is a publicly accessible 37-item screening tool for symptoms of autism (Scott, Baron-Cohen, Bolton, & Brayne, 2002). The CAST was developed for school-aged children 4-11 years old. It is composed of a 31-item screening scale

and a 6-item control scale that measures the child's general development. Only the 31-item screening scale was used for the present study. When using the recommended cutoff score of 15, the CAST had 100% sensitivity (i.e., respondents above the cutoff score did have a diagnosis of autism) and 97% specificity (i.e., respondents below the cutoff score did not have a diagnosis of autism; Scott, Baron-Cohen, Bolton, & Brayne, 2002). Moreover, the CAST has good test-retest reliability that is comparable to other autism screening tests (Williams et al., 2005; Williams et al., 2006). The CAST has been found to screen for autism just as effectively, or better, than the more commonly used Social Communication Questionnaire (SCQ; Rutter, Bailey, & Lord, 2003; Scott, Baron-Cohen, Bolton, & Brayne, 2002). In addition, the CAST was more practical than the SCQ, as it is free, publicly accessible online, and has 6 fewer questions. Given that the CAST has been shown to have 100% sensitivity, it was an appropriate screening tool to confirm the diagnoses of autism in the present study.

Demographic Questionnaire. All participants completed a 19-item demographic questionnaire (Appendix D). Items included, but were not limited to: father's age, coparent's age, child's age and sex, number of children (with and without autism) in the house, marital/coparent status, social-economic status (SES), hours of employment, level of education, whether they resided in the house with the child with autism and/or with the coparent, and whether they had any physical limitations that may have prohibited them from playing with their children.

Coparenting Quality. The Coparenting Relationship Scale (CRS) was used in the present study to measure fathers' coparenting relationship quality (Feinberg, Brown, & Kan, 2012). The CRS is a 35-item questionnaire that asked fathers to rate how they worked together with their coparent as parents. For instance, item 6 asked, "my partner and I have the same goals

for our child". All items were responded to on a 7-point Likert scale, ranging from 0 (*Not true of us*) to 6 (*Very true of us*), with higher scores indicating greater coparenting relationship quality. The CRS consists of seven subscales that represent Feinberg's (2003) five-construct definition of coparenting, including: Coparenting Agreement, Division of Labor, Coparenting Support, Coparenting Undermining, Endorsement of Partner's Parenting, Exposure to Conflict, and Coparenting Closeness. The support/undermining construct of coparenting is represented by three subscales: Coparenting Support, Coparenting Undermining, and Endorsement of Partners' Parenting. The four other subscales represent the four remaining constructs of coparenting agreement/disagreement, division of child-related labour, joint management of family interactions, and parenting-based closeness, respectively. The CRS has strong internal consistency, with Cronbach's alpha that range from .91-.94 for the total score and .75-.90 for the individual subscales (Feinberg, Brown, & Kan, 2012). Given that the CRS is a relatively new measure, and that coparenting quality had not often been directly researched in families of children with autism, only one study was found that had used this measure with parents of children with autism. That study found adequate internal consistency for fathers of children with autism, including .64 for the total score and .58-.89 for the individual subscales (McConnell, 2015). The Cronbach's alpha for the CRS total score in the present study was .82. Only the total score was used in the present study.

Father Involvement in Play. For the present study, father's involvement in physical play behaviours and activities was measured. The Physical Play Questionnaire (PPQ) was used to identify the physical play behaviours that fathers engaged in with their children with autism (Mellen, 2002). The PPQ is a 22-item questionnaire that asked fathers to report the frequency of their involvement in physical behaviours with a target child. For instance, item 16 asked, "how

often have you played pillow fights with your child in the past 2 weeks?" However, the present study adapted this scale and instead asked participants to respond to the items based on their weekly engagement, on a 5-point Likert scale, ranging from 1 (*Less than 1x a week*) to 5 (*Every Day*), with higher scores indicating greater frequency of physical play behaviours. The researcher received permission to adapt the PPQ. The PPQ consisted of four subscales, namely: Rough-and-Tumble Play, Playground Play, Rides, and Intimate Play. Factor analyses supported the four-factor structure identified above (Mellen, 2002). Previous research on fathers of children with autism found support for good reliability, with a Cronbach's alpha of .94 for the total score (Bloom, 2015). The Cronbach's alpha for the PPQ total score in the present study was .86. Only the total score was used in the present study. The PPQ was modified in the present study so that participants completed all items within a subscale consecutively, in order to subsequently answer questions related to fathers' satisfaction and motivation for each subscale. That is, the items were not responded to in numerical order (1-22), but were responded to in groups, one subscale at a time.

The present study included 15 additional items to measure physical play activities (PPQ-A, see Appendix A). These items were created based on the responses of fathers of children with autism to the question "are there any other activities/games that you do with your child that were not asked in the survey" in a previous study (see Bloom, 2015). The responses (reported by 2 or more fathers) were combined into categories and 15 unique items were developed. For instance, item 2 asked, "how often have you played board games with your child this week". The additional items were responded to on the same 5-point Likert scale as the PPQ items, ranging from 1 (*Less than 1x a week*) to 5 (*Every Day*), with higher scores indicating greater frequency of physical play activities. The present study found adequate internal consistency for the PPQ-A,

with a Cronbach's alpha of .70. Though somewhat low, this score is still considered adequate (Cortina, 1993).

Father Involvement in Child-Care. Fathers' involvement in child-care was measured with the use of the Father Involvement Scale (FIS; Bragiel & Kaniok, 2011). Though other questionnaires existed for measuring father involvement (e.g., Inventory of Father Involvement, Hawkins et al., 2002; Parental Involvement in Childcare; Roach, Orsmond, & Barratt, 1999), only the FIS was developed specifically for fathers of children with disabilities. The FIS is a 40-item questionnaire that asked fathers to rate the frequency of their involvement with their children with disabilities on a 5-point Likert scale, ranging from 1 (*Never*) to 5 (*Always*), with higher scores indicating greater involvement. For instance, item 10 asked, "I prepare meals and participate in feeding my child". The FIS consists of 5 subscales, namely: Interest in the Disabled Child's Life (sic), Care, Education, Rehabilitation, and Active Help in Achieving by Disabled Children their Independence (sic). Previous research has found good reliability for the total score of the FIS with fathers of children with disabilities, with a Cronbach's alpha greater than .80 (Bragiel & Kaniok, 2011; 2014). The present study only used the Care, Education and Rehabilitation subscales, consisting of 24 items total (i.e., eight items per subscale). The items in the rehabilitation subscale were adapted to use the term therapy as opposed to rehabilitation, with permission from the original authors. These three subscales were summed to create a total score in the present study. The Cronbach's alpha for the FIS total score in the present study was .92

Satisfaction with Involvement. Predictions from self-determination theory would be that individuals who were more intrinsically motivated to do a behaviour, would also be more satisfied with this behaviour (Ryan & Deci, 2000). Thus, it was important that the measure of fathers' satisfaction with involvement be tied directly to the measure of father involvement in the

present study. For the present study, fathers' satisfaction with involvement was measured by asking fathers to report on their degree of satisfaction for both play and child-care. The Fathers' Satisfaction with Involvement Scale (FSIS) was created for the present study by the researcher (Bloom, 2017; see Appendix E). This was created by adding an additional item that measured fathers' satisfaction with involvement (i.e., 'how satisfied are you with this level of involvement') to the existing measures of fathers' involvement (see PPQ, PPQA, and FIS). Rather than asking fathers to rate their satisfaction for each individual item (of involvement), fathers were asked to rate their satisfaction per subscale (of involvement), for items that were part of a subscale. This was done to make the survey more readable to participants and to avoid fatigue. This way, participants responded to 22 items measuring satisfaction, as opposed to 77. In total, there were 22 items on the FSIS, consisting of three subscales. For satisfaction with involvement in physical play, fathers rated their satisfaction on four items, reflecting the four subscales of the PPQ. For satisfaction with involvement in play activities, fathers rated their satisfaction on 15 items, reflecting the 15 individual items on the PPQ-A. For satisfaction with involvement in child-care, fathers rated their satisfaction on three items, reflecting the three subscales of the FIS. For instance, item 6 on the FSIS asks, "[how often have you played board games with your child this week], how satisfied are you with this level of involvement:" All items were responded to on a 5-point Likert scale, ranging from 1 (*Very Dissatisfied*) to 5 (*Very Satisfied*), with higher scores indicating greater satisfaction with involvement. The wording of the items on the FSIS were adapted to reflect either the subscale of items (i.e., "how satisfied are you with these levels of involvement") or the individual item (i.e., "how satisfied are you with this level of involvement") it referred to. This format, of asking multiple questions with respect to the same item, had been used previously in community-sample studies, including: the

satisfaction with social support and the usefulness of parenting information (see Shwalb, Kawai, Shoji, & Tsunetsugu, 1995; Williams, 2015). The present study found strong internal consistency for the FSIS on all three subscales, with a Cronbach's alpha of .85 for satisfaction with physical play, .89 for satisfaction with play activities, and .85 for satisfaction with childcare.

Motivation for Father Involvement. The Motivation for Father Involvement Scale (MFIS) was used to measure the degree to which fathers' motivation for involvement was self-determined (Bouchard, 2000). The MFIS is a seven-item questionnaire developed from self-determination theory that asked fathers to indicate why they did certain behaviours, by rating their level of agreement to four statements, reflecting intrinsic regulation, identified regulation, introjected regulation, and external regulation. For instance, item 5 asked, "why do you engage in different tasks related to the physical health of your child." Fathers responded to four statements for this item, including: A) because I enjoy it (intrinsic); B) because it is important to me (identified); C) because I want others to think I'm a good father (introjected); D) because that's what I'm supposed to do as a father (extrinsic). The four statements on the MFIS items were each responded to on a 7-point Likert scale, ranging from 1 (*Very Strongly Disagree*) to 7 (*Very Strongly Agree*), and the responses to the four statements were weighted according to their degree to which they were more/less self-determined, as was originally designed by Bouchard (2000). Using Bouchard's method (2000) responses to the statement endorsing intrinsic regulation were multiplied by +2; responses to the statement endorsing identified regulation were multiplied by +1; responses to the statement endorsing introjected regulation were multiplied by -1; and responses to the statement endorsing external regulation were multiplied by -2. The total motivation score for each item was calculated by summing the responses to all four statements, with a more positive score representing more self-determined motivation and a more negative

score representing a less self-determined motivation. As a result, the possible scores for each item ranged from -18 (i.e., 7(-2) + 7(-1) + 1(+1) + 1(+2)) to +18 (i.e., 1(-2) + 1(-1) + 7(+1) + 7(+2)). The MFIS had strong internal consistency, with Cronbach's alphas ranging from 0.81-0.94 (Bouchard, 2000; Bouchard et al., 2007; Ray, 2016).

In order to measure fathers' total motivation for various types of involvement (i.e., physical play, play activities, and child-care), the present study had an item for each subscale of the PPQ, PPQ-A, and FIS. For the PPQ, four items were used, measuring fathers' total motivation for involvement in Rough-and-Tumble Play, Playground Play, Rides, and Intimate Play. For the PPQ-A, 15 individual items were used for each unique question on the PPQ-A. For the FIS, three items were used to measure fathers' total motivation for involvement in Care, Education, and Therapy. In total, the present study included 22 items on the MFIS, consisting of three subscales. This included four items related to the four subscales on the existing PPQ (for ease of reading), 15 items related to the 15 items on the PPQ-A, and three items related to the three subscales on the existing FIS (for ease of reading). The wording of the items on the MFIS were adapted to reflect either the subscale of items it referred to (i.e., "why do you engage in these with your child") or the individual item (i.e., "why do you engage in this with your child"), with permission from the author. The MFIS had strong internal consistency on all three subscales in the present study, with Cronbach's alphas of .93 for total motivation for involvement in physical play, .98 for total motivation for involvement in play activities, and .93 for total motivation for involvement in childcare.

In using the MFIS as originally designed, the researcher found only one significant correlation between fathers' total motivation for involvement and their frequency of involvement; no other significant correlations between fathers' total motivation and the

remaining variables were found in the present study (see Results section). In addition, responses from fathers during the phone interview and open-ended survey questions suggested that fathers were involved with their children with autism for multiple reasons. That is, their motivation for involvement may not be *either* intrinsic *or* extrinsic, but it could be both. Therefore, it was decided to separate the total motivation variable into distinct intrinsic-only and extrinsic-only scores, as opposed to using the total scores, which combined positive and negative values. This allowed for an analysis of both intrinsic-only and extrinsic-only motivation separately. Thus, the researcher created separate intrinsic-only and extrinsic-only motivation variables for fathers' motivation for physical play behaviours, play activities, and child-care as described further below (see Figure 3). Recall that each item on the original Motivation for Father Involvement Scale (MFIS) included four statements, one each reflecting (A) intrinsic, (B) identified, (C) introjected, and (D) extrinsic regulation. From this, the (A) intrinsic statement and the (D) extrinsic were selected out to create unique variables.

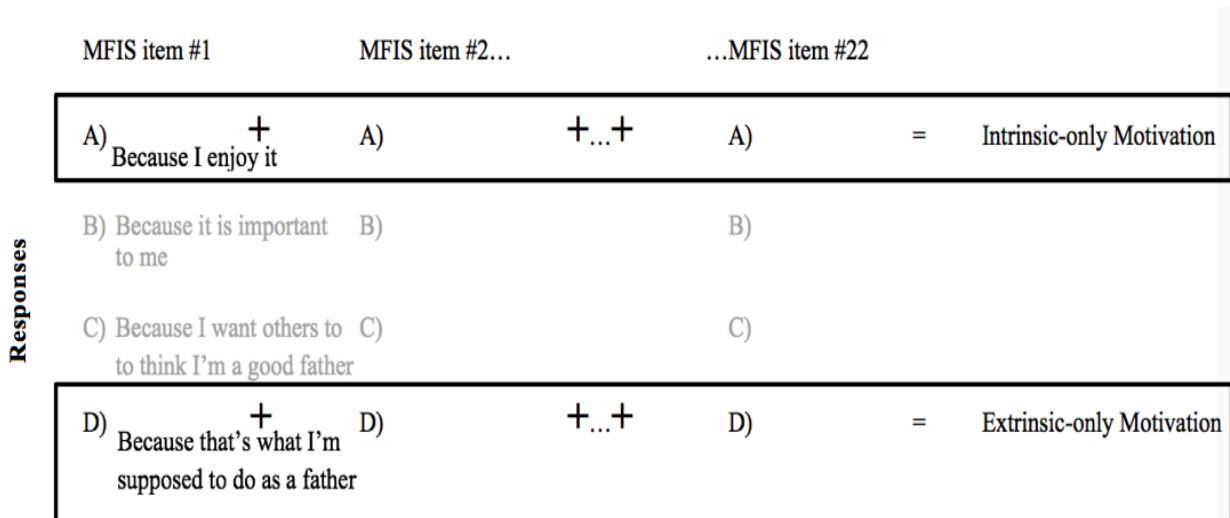


Figure 3. Chart detailing the process for creating the intrinsic-only motivation variables and the extrinsic-only motivation variables.

Intrinsic-only Motivation. To create a variable that uniquely reflected fathers' intrinsic-only motivation for involvement, fathers' responses to the intrinsic statement (i.e., 'because I enjoy it') were summed across all motivation for involvement items (see statement A in Figure 3). The responses to the intrinsic statement (i.e., 'because I enjoy it') for the four items on fathers' motivation for physical play behaviours were summed to create a variable reflecting fathers' Intrinsic-only Motivation for physical play behaviours. The Cronbach's alpha for father's Intrinsic-only Motivation for physical play behaviours was .82 in the present study. The responses to the intrinsic statement (i.e., 'because I enjoy it') for the 15 items on fathers' motivation for play activities were similarly summed to create fathers' Intrinsic-only Motivation for play activities. The Cronbach's alpha for father's Intrinsic-only Motivation for play activities was .96 in the present study. Once more, the responses to the intrinsic statement (i.e., 'because I enjoy it') for the 3 items on fathers' motivation for child-care were similarly summed to create fathers' Intrinsic-only Motivation for child-care. The Cronbach's alpha for father's Intrinsic-only Motivation for childcare was .92 in the present study. In total, three new variables were created that measured fathers' intrinsic-only motivation for involvement.

Extrinsic-only Motivation. To create an extrinsic-only motivation variable, fathers' responses to the extrinsic statement (i.e., 'because that's what I'm supposed to do as a father') were also summed across all motivation for involvement items (see statement D in Figure 3). The responses to the extrinsic statement (i.e., 'because that's what I'm supposed to do as a father') for the four items on fathers' motivation for physical play behaviours were summed to create a variable reflecting fathers' Extrinsic-only Motivation for physical play behaviours. The Cronbach's alpha for father's Extrinsic-only Motivation for physical play behaviours was .94 in the present study. The responses to the extrinsic statement (i.e., 'because that's what I'm

supposed to do as a father') for the 15 items on fathers' motivation for play activities were similarly summed to create fathers' Extrinsic-only Motivation for play activities. The Cronbach's alpha for father's Extrinsic-only Motivation for play activities was .98 in the present study. The responses to the extrinsic statement (i.e., 'because that's what I'm supposed to do as a father') for the 3 items on fathers' motivation for child-care were similarly summed to create fathers' Extrinsic-only Motivation for child-care. The Cronbach's alpha for father's Extrinsic-only Motivation for childcare was .93 in the present study. In total, three new variables were created that measured fathers' extrinsic-only motivation for involvement.

Parenting Stress. The Parental Stress Scale (PSS) was used to identify the level of stress of fathers of children with autism (Berry & Jones, 1995). The PSS is an 18-item questionnaire that asked parents to rate their level of agreement/disagreement with statements on the level of parenting stress they felt. Participants responded to the PSS on a 5-point Likert scale, ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*), with higher scores indicating more parenting stress. For instance, item 15 asked, "I feel overwhelmed by the responsibility of being a parent". This measure consists of four subscales, including: Parental Rewards, Parental Stressors, Lack of Control, and Parental Satisfaction (Berry & Jones, 1995). Only the total score was used in the present study. The PSS had been used previously in studies of parents of children with autism, with Cronbach's alphas of .83-.88 and had good test-retest reliability (Berry & Jones, 1995; Bloom, 2015; Firth & Dryer, 2013; Lessenberry & Rehfeldt, 2004; Sabih & Sajid, 2008). The Cronbach's alpha for the PSS total score in this study was similarly strong, at .87.

The PSS was chosen for the present study, instead of the more commonly-used Parenting Stress Index (PSI), as it was a shorter measure (i.e., easier for participants to complete), free, and publicly accessible (Abidin 1995). Similar to the PSI, the PSS measured the stress generated by

the parenting role and not by other roles/situations, and these measures were significantly correlated ($r = 0.75, p < .01$; Berry & Jones, 1995; Lessenberry & Rehfeldt, 2004).

Open-Ended Survey Questions. At the end of the online survey, fathers were asked three open-ended questions to provide fathers with an opportunity to share more about their unique experiences and children. Given that fathers' satisfaction with involvement has not been well researched, it was decided to provide fathers with an opportunity to share their level of satisfaction, as well as their reasoning for this. Furthermore, fathers' were asked to describe their children's favourite thing to do, to better understand the uniqueness of children with autism and the varied range of their interests and engagement. In total, three questions were written by the researcher, in consultation with the research advisor and Parent Advisor, to reflect research question #5. Specifically, fathers were asked to:

1. Please describe why, or why not, you are satisfied with your involvement in play with your child with autism.
2. Please describe why, or why not, you are satisfied with your involvement in child-care with your child with autism.
3. What is your child's favourite thing to do? Please describe why you think they like it.

Interview Questions. After completing the online survey, fathers were asked if they would agree to participate in an optional phone or Skype interview. Fathers who agreed were asked six additional questions during the optional interview. These questions were created to further explore the main research questions in the present study. As such, fathers were asked questions regarding their motivation for involvement, their involvement with their children with autism, their satisfaction with their involvement, and their experiences of support from their coparent. Five questions were written by the researcher, in consultation with the research advisor

and Parent Advisor, to reflect research question #5. It was also decided to provide fathers with an opportunity to share any additional information they felt was important. Fathers were asked:

1. How has your coparent influenced your involvement with your child with autism?
 - a. Please tell me about a time when they helped.
 - b. Please tell me about a time when they hindered.
2. How is the support you receive from your coparent the same/different than the support that you receive from others?
 - a. Please tell me an example.
3. Why are you involved with your child with autism?
4. How satisfied are you overall with your involvement with your child with autism?
 - a. Please tell me a time when you were more satisfied.
 - b. Please tell me a time when you were less satisfied.
5. How has being involved with your child with autism influenced/impacted your well-being?
 - a. Please tell me an example.
6. Is there anything else that you think would be important that we missed?

Procedures

For the present study, a Parent Advisor was consulted throughout the research process. A Parent Advisor was an individual from the target population (i.e., a father of a child with autism). Justin Galpin was the father of an 8-year-old son with autism and a 5-year-old neurotypical daughter, and acted as the Parent Advisor for the present study. Justin gave the researcher consent to include this information about him in this document. Justin is a college graduate and has various Martial Arts degrees. Justin took pride in his attendance at various autism or parent-

training opportunities in the Windsor-Detroit area, including the Unity Parent Training Program (i.e., 4-month parent training program for parents to learn Applied Behaviour Analysis principles). He contacted the researcher to volunteer and help as a Parent Advisor. In our first discussion together, he said that having a child with autism had made him adapt and become a better father. Justin aided in the present study, as he contributed to developing the survey, deciding upon an alternative incentive to thwart potential ‘bots’, and helping to create the research ethics protocol. Justin continued to aid in the research process, assisting with the recruitment of participants, analysis of qualitative data, and review of implications.

The researcher received clearance from the University of Windsor’s Research Ethics Board before beginning to recruit participants. Individuals interested in participating communicated with the research by email.

To participate in the survey, the researcher emailed the potential participants a unique URL link to the online survey. The survey was housed online on Fluid Surveys, but was later changed to Qualtrics (as the University of Windsor changed their affiliation). No changes were made to the online survey on either site. Participants provided consent before beginning and then completed the entire survey online (see Appendix F for a copy of the consent forms). After completing the survey, participants were asked if they would agree to an optional phone or Skype interview with the researcher. If participants agreed to this, they were asked to provide an email address and phone number to be contacted later. Participants were then each offered an incentive.

The researcher emailed the participants who were selected for the optional phone or Skype interview to set up a date and time (see the Participants section, for how participants were selected). The participants received a copy of the Consent Form and the Consent for Audio

Recording Form in the email and were asked to review these before the scheduled interview (see Appendix F). At the agreed upon date and time, the researcher contacted the participants by phone or Skype (participants' preference), reviewed the consent forms and answered any questions participants may have had regarding these, and then conducted phone or Skype interview ($M_{\text{minutes}} = 24.35$, $SD_{\text{minutes}} = 10.34$, range: 11.92 - 55.6 minutes).

Incentive. The incentive for the present study was a \$5 gift card to CanadaHelps.org. Participants who completed the optional phone or Skype interview were offered an additional \$5 gift card to CanadaHelps.org as an incentive. These gift cards had no cash value and could only be redeemed as a donation to the listed organizations on CanadaHelps.org, which included over 240 autism-related charities/organizations plus hundreds of other charities/organizations across Canada. The decision to offer a 'donation' gift card, as opposed to the more common 'cash' gift card (e.g., Amazon, Starbucks), was carefully thought through and discussed with other researchers and parents of children with autism. The primary purpose of offering the donation gift card was to thwart the potential for 'fraudsters' and their use of 'bots'. 'Fraudsters' are individuals who fraudulently participate multiple times in a survey in order to receive multiple cash incentives, and this could interfere with drawing accurate conclusions from the data and could have severe financial consequences (Teitcher et al., 2015). Online surveys that offered a cash-incentive were susceptible to having 'fraudsters' inappropriately submit multiple submissions (often by running a computerized 'bot'; see Teitcher et al., 2015 for a review). This had been the experience of the researcher, as well as other autism researchers in the Windsor community. It was expected that offering a donation-incentive would thwart the potential for fraudsters, as the incentive cannot be redeemed for cash or goods and only as a donation to an organization.

To determine whether or not offering a donation-incentive would influence recruitment for actual fathers of children with autism, parents of children with autism were informally surveyed. Fourteen parents of children with autism, including two fathers, were asked to anonymously indicate their responses to the questions, “would you participate in a study for a \$5 gift card to Amazon” and “would you participate in this study for a \$5 donation gift card instead”. All 14 parents indicated that they would participate in a study for a \$5 donation gift card. Moreover, the Parent Advisor noted that donating to local charitable organizations was a very rewarding idea and that fathers of children with autism understood the importance of giving and supporting others and furthering research. Interestingly, the majority of interview participants in the present study (n=12) did not accept the additional incentive. No concerns regarding ‘bots’ or ‘fraudsters’ were noted in the present study.

Qualitative Analyses. Thematic analysis was used in the present study to analyze the qualitative data collected on both the open-ended survey questions and the optional phone or Skype interview. Thematic analysis is a method to analyzing qualitative data that focuses on describing key patterns and telling an interpretative story regarding the data (Braun & Clarke, 2006, 2012). This method was chosen for several reasons. First, thematic analysis is an appropriate method for research projects where parents can be involved in the phases of analysis (Braun & Clarke, 2006; 2012). For the present study, the Parent Advisor was involved in the analysis process, specifically in phases three, four, and five. Moreover, thematic analysis is particularly useful for applied research, as the data were more easily understood by individuals who are not part of academic communities (Braun & Clarke, 2014). In addition, thematic analysis is appropriate for small sample sizes, is flexible with various theoretical approaches, and has been used previously in research on fathers of children with autism (Bloom, 2015; May

2014; Mitchell & Lashewicz, 2016, Potter, 2017). Given that there have been few studies on this research topic and with father participants, the present study took a semi-deductive approach to the qualitative analysis. The themes were derived from the content of the participants' responses, while the questions were derived from pre-existing theories and hypotheses (Braun & Clarke, 2006, 2012). Braun and Clarke (2006) highlighted that in thematic analysis, data can be collected by either an inductive or deductive approach. Taking a 'hybrid' approach to both inductive and deductive (i.e., semi-deductive) has been used previously in thematic analysis research (Fereday & Muir-Cochrane, 2006).

Qualitative analyses, including thematic analysis, are a more subjective method than quantitative analyses and researchers may be biased in their analyses (Braun & Clarke, 2006; Kazdin, 2003). Moreover, quantitative approaches for calculating reliability, for example, inter-rater reliability, are reviewed as unnecessary for thematic analysis (Braun & Clarke, 2012, 2014).

Braun and Clarke (2006, 2012) described a six-step process for completing thematic analysis. In order, these included: familiarizing yourself with the data, generating initial codes, identifying the themes, reviewing the themes, defining and naming the themes, and producing the report.

In the first step, *familiarizing yourself with the data*, the researcher read through all the open-ended survey questions and listened to all of the recorded phone/Skype interviews 2-3 times to familiarize himself with the data and verify the transcriptions (Braun & Clarke, 2006). The interviews were transcribed by two trained research assistants and the researcher. The researcher then checked all the transcriptions once more.

The second step, *generating initial codes*, involved taking participants' responses and reducing them to 'codes' (Braun & Clarke, 2006). Braun and Clarke (2012) noted that codes

include any unique feature of the data that may be relevant to the research questions. They added that codes could be direct quotes or brief summaries or interpretations that mirrored participants' language (for brevity; Braun & Clarke, 2012). Before reducing participants' responses to codes, the researcher took some time to reflect on their own biases and experiences, to identify the impact these had on interpretation (e.g., reflecting on their positive experiences with their own father, or reflecting on their past experiences interviewing fathers of children with autism). That being said, the researcher was aware that bias was present throughout the research process (e.g., in the creation of questions, in the naming of themes), and continued to reflect on this after the second step as well. After reflecting, the codes were created and entered on a Microsoft Excel sheet (one for the survey questions and one for the interview questions).

The third step, *identifying the themes*, involved a group of researchers (Braun & Clarke, 2006). This group consisted of the researcher (a Ph.D. Candidate with clinical and research experience with families with children with autism), the research supervisor (a Ph.D. research advisor for the autism Research Group and Clinical Director of a preschool for children with autism), the Parent Advisor (a father of a child with autism), and a Research Assistant (undergraduate psychology student). It was expected that the group of researchers all brought varying experiences of families with children with autism that would aid in interpretation. Moreover, the researcher and their research supervisor had both conducted thematic analysis with responses from parents of children with autism in previous studies. Before beginning to 'identify' the themes (by organizing codes into conceptually-similar groups), the researcher led the group through a brief discussion of reflecting on their biases. Having four different researchers was seen as a strength, as they provided various insights and perspectives, but the biases were important to identify beforehand. Once more, the researcher was aware that bias was

present throughout the research process, and continued to reflect on this after the third step as well.

The codes were printed from the Microsoft Excel sheet and included the participant number, the question number, the ‘code’, and an indicator of whether this was a direct quote (‘Q’) or researcher interpretation (‘RI’). The printed codes were laid out on a large table to facilitate viewing and movement.

In thematic analysis, themes were noted to capture a patterned response reflecting something important in the data that was related to the research questions (Braun & Clarke, 2012). Braun and Clarke (2006, 2012) noted that themes do not emerge from the data, but that they are actively generated by the researchers. Thus, the researchers began this process by organizing codes into conceptually-similar groups to begin generating ‘themes’. Printed codes from all six interview questions were laid out on a large table and organized simultaneously, to be sure that interpretation went beyond the individual question content. The researchers spoke aloud as they placed codes into potential themes, so that all researchers knew generally what each ‘theme’ entailed. Moreover, the researchers began highlighting codes that illustrated the potential themes well (see step six; Braun & Clarke, 2006). Then, the printed codes from the open-ended survey questions were laid out on the table and were sorted into either the pre-existing or new potential themes.

The fourth step, *reviewing the themes*, also involved the group of researchers (Braun & Clarke, 2006). First, some smaller themes that did not stand on their own were combined into larger over-arching themes. Then, themes that included a large number of responses were reviewed to identify any unique sub-themes. This process also included moving individual codes

from one theme to another. As the themes were being combined or separated, the researchers continued discussing aloud about what each theme entailed.

The group of researchers then completed the fifth step, *defining and naming the themes* (Braun & Clarke, 2006). The researchers worked on this step throughout steps three and four as well, and discussed aloud what each theme entailed. Then, after all the themes were organized and defined, the researchers went around and worked together to formally name each theme/sub-theme. Themes were also given a valence (e.g., positive or negative) according to their content. At this point, the themes were organized into individual envelopes and labeled with their new theme name.

Last, the researcher alone produced the report that included a description of the themes and selected illustrative quotes from fathers (see Results section; Braun & Clarke, 2006). The group of researchers had highlighted certain quotes that they felt represented the themes well during steps three and four. The researcher identified several other quotes as well upon further inspection for the report.

Results

Preliminary analyses were conducted to test for missing data, outliers, and all assumptions of regression. Hierarchical multiple regressions were conducted to test the main analyses, including hypotheses 1, 2, 3, and 4. Additional analyses were conducted with hierarchical multiple regressions and indirect effects. Thematic analyses were conducted to analyze the qualitative research question.

Preliminary Analyses

Missing Data. Before any statistical analyses were conducted, the data were checked for missing data. One participant was removed from all statistical analyses at the onset, as they had only partially completed data for 2 variables, and omitted the remaining 9 variables. The remaining completed data set consisted of 76 participants. This data set was assessed for missing data. Overall, there were 264 individual observations that contained missing values. This resulted in 1.5% of the overall data set (264/17,100). Little's MCAR test for missing data at random was conducted, and the data were found to be missing at random $\chi^2 (6835) = 0, ns$. Furthermore, there were 34 patterns of missing data, with only 1 pattern consisting of 3 participants who missed 2 items (one each from two different variables). The remaining 33 patterns of missing data were unique to individual participants, adding support that the data were missing at random. Given that the data were missing at random and that less than 5% was missing overall, the expectation maximization technique was chosen to impute the missing data (Shafer & Olsen, 1998). Expectation maximization is an appropriate imputation technique for small amounts of missing data and allows for data to be imputed within their subscales (i.e., maintains homogeneity; Pigott, 2001).

Outliers. After the data were imputed, the statistical assumptions of multiple regression were checked. First, the data were checked for outliers. Mahalanobis distance scores were analyzed to check for outliers on the predictor variables, including the three mediator variables. One participant was identified as an outlier on two of the four predictor variables; no other outliers were identified on the predictor variables. To check for outliers on the outcome variables, the standardized residuals were analyzed. No outliers were identified using the standard cutoff of standardized residuals greater than 3 or lower than -3. The data were then checked for influential observations, as these could have undue influence on regression analyses. To assess for influential observations, Cook's distance scores and Standardized DfFITS scores were examined. No scores were above the cutoff for Cook's distance (i.e., greater than 1) or Standardized DfFITS (i.e., greater than 2). Thus, even though one outlier was identified on two predictor variables, no observations were deemed to be influential and the data remained intact.

Testing Assumptions. The data were tested for assumptions of multicollinearity, linearity, homoscedasticity, and normality. To test for multicollinearity, the intercorrelations between the predictor variable and the mediator variables were analyzed; intercorrelations ranged from .13 to .24, which were deemed acceptable and far below the customary cutoff of .80. Furthermore, the Tolerance and Variation Inflation Factor scores were within the appropriate range. As such, the assumption of multicollinearity was maintained.

The assumption of linearity was assessed by examining the scatterplots between all predictor and outcome variables (i.e., predictor and mediator, mediator and outcome, predictor and outcome). Visual inspection of the scatter plots confirmed that the variables were related in a linear fashion. To check on the assumption of homoscedasticity, the residual plots were visually

inspected for clustering of data and no concerns were identified. Thus, the assumptions of linearity and homoscedasticity were maintained.

For the assumption of multivariate normality, the normality of the outcome variables was assessed individually. A Shapiro-Wilk's test of normality was conducted on each of the seven outcome variables. For parenting stress and the three involvement variables (i.e., physical play, play activities, and child-care), the test of normality was not significant, $\omega(74) = 0.98, ns$, $\omega(74) = 0.98, ns$, $\omega(74) = 0.99, ns$ and $\omega(74) = 0.98, ns$, respectively. In contrast, the test of normality for the three satisfaction with involvement variables revealed some concerns.

The Shapiro-Wilk's test was significant for satisfaction with physical play, $\omega(74) = 0.93, p = .000$, and for satisfaction with child care, $\omega(74) = 0.91, p = .000$, and approached significance for satisfaction with play activities, $\omega(74) = 0.97, p = .055$. This suggested that the satisfaction variables had non-normal distributions. As a result, a visual inspection of the histograms was completed.

Visual inspection of the data points for the satisfaction with play activities variable suggested that the data were evenly populated around zero, suggesting a normal distribution. Moreover, skewness and kurtosis values were computed and were within the accepted range (i.e., between -2 and 2, and between -3 and 3, respectively). Given that the Shapiro-Wilk's test only approached significance, and that the histogram suggested a normal distribution, the assumption of normality for the satisfaction with play activities variable was maintained.

However, the visual inspection of the histograms for the satisfaction with physical play and satisfaction with child care variables suggested that these data were skewed to the left (i.e., greater clustering of scores in the higher end). Although the skewness and kurtosis values for both variables were within the acceptable range, the visual appearance of skewness combined

with the significant Shapiro-Wilk's statistic suggested that the assumption of normality was not maintained for these two variables.

The researcher tried two methods to attempt to compensate for the skewness. First, mediation analyses for the present study were computed using bootstrapping (i.e., indirect effects) instead of the standard Sobel Z test. The method of bootstrapping is not bound by assumptions of normality, and so, the non-normal data were not an issue (Field, 2013). Second, the two variables were transformed using a Log10 transformation. This form of variable transformation is appropriate for medium-sized sample sizes with non-normal skewness (Howell, 2007; Tabachnick & Fidell, 2007; Tabachnick & Fidell, 2013). Afterwards, the mediation analyses were run with both the original and transformed variables. For the present study, the results did not differ when using either the original variables or the Log10 transformed variables. As a result, the researcher decided to maintain the original variable. This was decided because the results did not differ, interpreting transformed variables is more ambiguous, and for consistency with the other (normally distributed) satisfaction variable, satisfaction with play activities (Tabachnick & Fidell, 2007).

The assumption of independence of observations was assessed by reviewing the design of the present study. Given that all participants responded to the variables independently on an online survey, and that each participant could respond to the survey only once, the observations were deemed to be independent.

Intercorrelations and Control Variables. Intercorrelations between the independent, mediator, and dependent variables in the study were conducted (see Table 3). Moreover, these were correlated with various demographic variables to identify possible control variables (see Table 3).

Correlations revealed that greater coparenting relationship quality was significantly positively related to father's extrinsic motivation for involvement in physical play behaviours and play activities, and fathers' parenting stress, but not child-care. Fathers' intrinsic motivation for involvement for physical play behaviours, play activities, and child care were all significantly positively related with one another. Moreover, fathers' frequency of involvement in physical play behaviours, play activities, and child care were all significantly positively related with one another. In addition, fathers' satisfaction with involvement in physical play behaviours, play activities, and child care were all significantly positively related with one another. More frequent involvement in play activities and child-care were significantly related to greater satisfaction with involvement in these areas, and to lower parenting stress. Fathers' involvement in physical play behaviours was not related to their satisfaction with involvement, nor to their parenting stress. Furthermore, greater satisfaction with involvement, in physical play behaviours, play activities, and child-care, was significantly related to lower parenting stress for fathers.

Table 3

Correlation Matrix for all Independent, Mediator, Dependent, and Possible Control Variables

Variable	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Child Age	.36**	.46***	-.01	.02	.06	.05	-.02	-.06	.05	.13	.13	-.41**	-.14	-.26*	-.31**	-.04	-.27*	-.03
2. Father Age	-	.73***	.16	-.10	.23	-.08	.18	.23	-.16	-.11	.00	-.06	-.22	-.26*	-.23*	-.16	-.21	.02
3. Coparent Age	-	.19	.09	.25*	.05	.15	.28*	-.21	-.16	-.07	-.34**	-.23	-.30*	-.09	.05	-.13	.03	
4. Marital Satisfaction	-	.01	-.03	-.01	.18	.68***	-.20	-.07	-.08	-.05	-.07	-.02	.27*	.22	.26*	-.34**		
5. Hours Worked: Father	-	-.01	.38**	.10	.14		.02	-.06	.01	-.17	-.29*	-.24*	.01	.01	-.09	-.03		
6. Hours Worked: Coparent	-		-.11	.10	.06		.09	.13	.10	.09	.18	.05	-.03	.18	.06	.02		
7. Income			-	.14	-.02		.05	-.09	-.03	-.29*	-.32**	-.22	-.08	-.13	-.06	.13		
8. Education				-	.21		-.01	.01	.05	-.09	-.09	-.20	.07	.08	-.08	-.01		
9. CRS					-		-.24*	-.24*	-.13	.13	-.05	-.06	.22	.11	.13	-.24*		
10. MPPQ						-		.87***	.74***	.08	.17	.14	-.02	-.03	.01	-.05		
11. MPPQA							-		.81***	.03	.26*	.15	-.08	.02	.02	-.05		
12. MFIS								-		.01	.18	.16	-.05	.08	.01	-.16		
13. PPQ									-		.51***	.41***	.20	-.00	.17	-.13		
14. PPQA										-		.42***	.23	.30**	.28*	-.29*		
15. FIS											-		.37**	.27*	.64***	-.35**		
16. SPPQ												-		.66***	.57***	-.33**		
17. SPPQA													-		.46***	-.39**		
18. SFIS														-		-.36**		
19. PSS																		

Note. * significant at the .05 level, ** significant at the .01 level, *** significant at the .001 level. CRS = Coparenting Relationship Scale, MPPQ = Motivation for involvement in Physical Play Behaviours, MPPQA = Motivation for involvement in Play Activities, MFIS = Motivation for involvement in Childcare, PPQ = Involvement in Physical Play Behaviours, PPQA = Involvement in Play Activities, FIS = Involvement in Childcare, SPPQ = Satisfaction with involvement in Physical Play Behaviours, SPPQA = Satisfaction with involvement in Play Activities, SFIS = Satisfaction with involvement in Childcare, PSS = Parental Stress Scale.

The significant correlations of fathers' demographic variables were reviewed as possible control variables (see Table 3). Greater marital satisfaction and older coparent age were significantly related to greater coparenting relationship quality for fathers. No demographic variables were significantly related to fathers' motivation for involvement. The younger the age of the children with autism and their coparent, and less income, were significantly related to more frequent involvement in physical play behaviours for fathers. The number of hours worked by fathers was significantly related to their involvement in play activities, with fewer hours related to more frequent involvement. For fathers' involvement in childcare, more frequent involvement was significantly related to the younger the age of fathers, their children with autism, and their coparent, as well as to fewer hours worked by fathers. The younger the age of fathers and their children with autism, and greater marital satisfaction, were significantly related to greater satisfaction with involvement in physical play behaviours for fathers. No demographic variables were significantly related to fathers' satisfaction with involvement in play activities. For fathers, greater marital satisfaction and the younger the age of their children with autism were significantly related to greater satisfaction with involvement in childcare. For parenting stress, greater parenting stress was significantly related to lower marital satisfaction.

To assess whether or not child sex was a relevant control variable for the present study, t-tests were run comparing fathers of sons and daughters with autism on the mediator and dependent variables. No significant t-tests were found when comparing fathers of sons and daughters with autism (see Table 4). Thus, child sex was not included as a control variable for all future analyses.

Table 4

Comparing Means for Fathers of Sons (n=63) and Daughters (n=11)

	Sons	Daughters	Significance Test
MPPQ	17.57	16.00	t(72) = .29, p = .774
MPPQA	52.28	55.73	t(70) = -0.18, p = .861
MFIS	5.43	7.23	t(72) = -0.41, p = .684
PPQ	49.50	48.82	t(72) = 0.16, p = .875
PPQA	31.42	33.73	t(70) = -0.87, p = .387
FIS	91.65	94.07	t(72) = -0.50, p = .619
SPPQ	16.07	15.55	t(72) = 0.56, p = .578
SPPQA	52.60	56.45	t(70) = -1.33, p = .190
SFIS	12.00	11.55	t(72) = 0.61, p = .546
PSS	44.91	39.55	t(72) = 1.57, p = .120

Note. MPPQ = Motivation for involvement in Physical Play Behaviours, MPPQA = Motivation for involvement in Play Activities, MFIS = Motivation for involvement in Childcare, PPQ = Involvement in Physical Play Behaviours, PPQA = Involvement in Play Activities, FIS = Involvement in Childcare, SPPQ = Satisfaction with involvement in Physical Play Behaviours, SPPQA = Satisfaction with involvement in Play Activities, SFIS = Satisfaction with involvement in Childcare, PSS = Parental Stress Scale.

Descriptive Statistics. Given that little research exists on the variables of interest in the present study with fathers of children with autism, descriptive statistics are included to provide additional information (see Table 5). With respect to coparenting relationship quality, fathers reported generally high coparenting relationship quality scores ($M_{\text{total}} = 182.37$, $SD_{\text{total}} = 40.40$). Similarly, fathers in this sample reported generally high coparenting relationship quality on all seven individual subscales. With respect to fathers' involvement in physical play behaviours ($M_{\text{total}} = 49.44$, $SD_{\text{total}} = 12.92$), fathers engaged in physical play behaviours approximately 1-2 times a week overall. Fathers tended to engage in intimate play (e.g., bouncing on knee) most often and rough-and-tumble play (e.g., fake hitting and kicking) least often. Similarly, fathers engaged in play activities ($M_{\text{total}} = 31.98$, $SD_{\text{total}} = 8.08$) approximately 1-2 times a week overall. Fathers were involved in childcare approximately 5-6 times a week ($M_{\text{total}} = 91.98$, $SD_{\text{total}} = 14.59$). They were involved in care (e.g., dressing, preparing meals), education (e.g., teaching, praising), and therapy (e.g., participating in therapy) approximately 5-6 times a week. Fathers in this sample reported being 'satisfied' (i.e., a score of 4) with their involvement in physical play behaviours ($M_{\text{total}} = 16.06$, $SD_{\text{total}} = 2.88$) and child-care ($M_{\text{total}} = 11.96$, $SD_{\text{total}} = 2.27$), and between 'neutral' and 'satisfied' with their involvement in play activities ($M_{\text{total}} = 53.45$, $SD_{\text{total}} = 9.18$). With respect to parenting stress, fathers in this sample reported a mean total score of 43.79 with a standard deviation of 10.67.

Table 5

Descriptive Statistics for Independent and Dependent Variables

Measure Subscale	Mean	Standard Deviation	Range
Coparenting Relationship	182.37	40.40	56 - 234
Endorsement of Partner Parenting	42.45	7.88	7 - 49
Division of Labor	11.64	3.02	2 - 14
Coparenting Agreement	21.39	5.60	4 - 28
Coparenting Support	30.83	10.62	6 - 42
Exposure to Conflict*	24.29	5.65	5 - 35
Coparenting Closeness	24.17	8.37	5 - 35
Coparenting Undermining*	27.60	8.23	6 - 42
Physical Play Behaviours	49.44	12.92	22 - 88
Rough-and-tumble Play	7.95	3.10	5 - 19
Playground Play	12.69	4.39	6 - 24
Rides	10.19	4.58	5 - 25
Intimate Play	18.61	5.66	6 - 30
Play Activities	31.98	8.08	15 - 50
Child-care	91.98	14.59	48 - 120
Care	30.50	5.84	13 - 40
Education	31.64	5.55	16 - 40
Therapy	29.84	6.78	8 - 40
Satisfaction with Physical Play			
Behaviours	16.06	2.88	8 - 20
Satisfaction with Play Activities	53.45	9.18	30 - 75
Satisfaction with Child-care	11.96	2.27	5 - 15
Parenting Stress	43.79	10.67	23 - 69

Note. *Reverse-scored so that higher scores reflect greater coparenting relationship quality.

Main Analyses

Research Question 1: How are fathers' motivation for involvement with their children with autism related to the support they receive from their coparents? It was hypothesized that higher coparenting relationship quality would be positively related to fathers' intrinsic motivation for involvement in physical play behaviours (hypothesis 1a), play activities (hypothesis 1b), and child-care (hypothesis 1c).

Three standard regression analyses were conducted to test whether coparenting relationship quality significantly predicted fathers' intrinsic motivation for involvement in physical play behaviours, play activities, and childcare (hypothesis 1). As shown in Table 6, the regression model with fathers' motivation for involvement in physical play behaviours was significant, $F(1, 73) = 4.64, p = .035$. Coparenting relationship quality was a significant predictor of fathers' motivation for involvement in physical play behaviours, $\beta = -.244, t(73) = -2.15, p = .035$. However, fathers' coparenting relationship quality was related to their extrinsic motivation for involvement in physical play behaviours and not to their intrinsic motivation. As such, hypothesis 1a was not supported. The regression model with fathers' motivation for involvement in play activities was also significant, $F(1, 71) = 4.40, p = .039$ (see Table 6). Coparenting relationship quality was a significant predictor of fathers' motivation for involvement in play activities, $\beta = -.242, t(71) = -2.10, p = .039$. However, fathers' coparenting relationship quality was related to their extrinsic motivation for involvement in play activities and not to their intrinsic motivation. As such, hypothesis 1b was not supported. As shown in Table 6, the regression model with fathers' motivation for involvement in childcare was not significant, $F(1, 73) = 1.28, p = .262$, and hypothesis 1c was not supported.

Table 6

Regression Analyses of Coparenting Relationship Quality Predicting Fathers' Motivation

Variable	F	R ²	Unstandardized Coefficients B	Standardized Coefficients β	Semi-Partial Correlations sr ²
MPPQ					
Step 1	4.64*	.06			
Coparenting Relationship Quality			-0.10	0.05	-.244*
MPPQA					
Step 1	4.40*	.06			
Coparenting Relationship Quality			-0.35	0.17	-.242*
MFIS					
Step 1	1.28	.02			
Coparenting Relationship Quality			-0.05	0.04	-.131
					-.02

Note. Higher scores reflect more intrinsic motivation. MPPQ = Motivation for involvement in physical play behaviours, MPPQA = Motivation for involvement in play activities, MFIS = Motivation for involvement in childcare. *p < .05.

Research Question 2: How are fathers involved with their children with autism and what are the predictors of this involvement? From this question, it was hypothesized that coparenting relationship quality would be related to fathers' involvement (hypothesis 2). Specifically, it was hypothesized that higher coparenting relationship quality would be positively related to the frequency of fathers' involvement in physical play behaviours (hypothesis 2a), and that this relationship would be mediated by fathers' intrinsic motivation (hypothesis 2b). In addition, it was hypothesized that higher coparenting relationship quality would be positively related to the frequency of fathers' involvement in play activities (hypothesis 2c) and that this relationship would be mediated by fathers' intrinsic motivation (hypothesis 2d). It was also hypothesized that higher coparenting relationship quality would be positively related to the frequency of fathers' involvement in childcare (hypothesis 2e) and that this relationship would be mediated by fathers' intrinsic motivation (hypothesis 2f).

Three hierarchical multiple regressions (MRA) were conducted to test whether coparenting relationship quality significantly predicted fathers' involvement in physical play behaviours, play activities, and childcare (hypothesis 2). The regression model with involvement in physical play behaviours as the outcome variable included the age of the children with autism and the coparent, as well as income, as control variables in step 1. In step 1, the regression model was significant, $F(3, 60) = 7.24, p = .000$ (see Table 7). In step 2, when coparenting relationship quality was entered into the model, the regression model continued to be significant, $F(4, 59) = 6.45, p = .000$. However, coparenting relationship quality was not a significant predictor of fathers' involvement in physical play behaviours, $\beta = .211, t(59) = 1.81, p = .076$ (see Table 7). As such, hypothesis 2a was not supported.

The regression model with involvement in play activities as the outcome variable

included the number of hours worked by fathers and their income as control variables in step 1. In step 1, the regression model was significant, $F(2, 68) = 4.87, p = .011$ (see Table 7). In step 2, when coparenting relationship quality was entered into the model, the regression model continued to be significant, $F(3, 67) = 3.22, p = .028$. However, coparenting relationship quality was not a significant predictor of fathers' involvement in play activities, $\beta = -.025, t(67) = -0.21, p = .832$ (see Table 7). As a result, hypothesis 2c was not supported.

The regression model with involvement in childcare as the outcome variable included the ages of the children with autism, the father, and the coparent, as well as the number of hours worked by fathers as control variables in step 1. In step 1, the regression model was significant, $F(4, 57) = 3.05, p = .024$ (see Table 7). In step 2, when coparenting relationship quality was entered into the model, the regression model continued to be significant, $F(5, 56) = 2.40, p = .048$. However, coparenting relationship quality was not a significant predictor of fathers' involvement in childcare, $\beta = -.008, t(56) = -0.06, p = .950$ (see Table 7). Given this, hypothesis 2e was not supported.

Table 7

Regression Analyses of Coparenting Relationship Quality Predicting Fathers' Involvement

Variable	F	R ²	Unstandardized Coefficients		Standardized Coefficients β	Semi-Partial Correlations sr ²
			B	SE		
PPQ						
Step 1		7.24***	.27			
Child Age			-2.11	0.82	-.319*	-.10
Coparent Age			-0.45	0.32	-.174	-.03
Income			0.00	0.00	-.253*	-.08
Step 2		6.45***	.30			
Child Age			-1.76	0.83	-.267*	-.07
Coparent Age			-0.67	0.34	-.259	-.06
Income			0.00	0.00	-.256*	-.09
Coparenting Relationship Quality			0.07	0.04	.211	.05
PPQA						
Step 1		4.87*	.13			
Hours Worked – Father			-0.52	0.31	-.204	-.04
Income			0.00	0.00	-.221	-.05
Step 2		3.22*	.13			
Hours Worked - Father			-0.51	0.32	-.200	-.04
Income			0.00	0.00	-.223	-.05
Coparenting Relationship Quality			-0.01	0.02	-.025	-.00
FIS						
Step 1		3.05*	.18			
Child Age			-1.40	1.02	-.183	-.03
Father Age			-0.51	0.52	-.181	-.02
Coparent Age			-0.17	0.59	-.054	-.00
Hours Worked – Father			-1.17	0.58	-.254*	-.07
Step 2		2.40*	.18			
Child Age			-1.41	1.05	-.185	-.03
Father Age			-0.51	0.53	-.181	-.02
Coparent Age			-0.16	0.62	-.050	-.00
Hours Worked – Father			-1.17	0.59	-.253	-.07
Coparenting Relationship Quality			-0.00	0.05	-.008	-.00

Note. PPQ = Involvement in physical play behaviours, PPQA = Involvement in play activities, FIS = Involvement in childcare. *p < .05, **p < .01, ***p < .001.

It was hypothesized that the relationship between coparenting relationship quality and fathers' frequency of involvement in physical play behaviours (2b), play activities (2d), and childcare (2f) would be mediated by fathers' intrinsic motivation for involvement. However, there was no direct effect, as coparenting relationship quality was not significantly related to fathers' involvement (see hypotheses 2a, 2c, and 2e). Moreover, in reviewing the correlation matrix (see Table 3), fathers' intrinsic motivation was not significantly correlated with fathers' involvement. As a result, it was deemed that the conditions necessary for mediation analyses were not met, and hypotheses 2b, 2d, and 2f were not tested.

Intrinsic-only motivation. The results suggested that fathers' coparenting relationship quality was not significantly related to their involvement (in physical play behaviours, play activities, and childcare). Moreover, fathers' motivation for involvement was not significantly correlated to fathers' involvement (in physical play behaviours, play activities, and childcare). However, responses from fathers during the phone interview and open-ended survey questions suggested that fathers were involved with their children with autism for multiple reasons (see Thematic Analyses). The responses suggested that for fathers of children with autism, their motivation for involvement may not be exclusively either intrinsic *or* extrinsic, but that it could be both. Therefore, it was decided to separate the motivation variables into distinct intrinsic-only and extrinsic-only scores, as opposed to amalgamating them into a total score by combining positive and negative values (see Method section). Fathers' intrinsic-only motivations for involvement and extrinsic-only motivations for involvement were correlated with the study variables and possible control variables (see Table 8).

Table 8

Correlation Matrix for all Study Variables with Intrinsic-only and Extrinsic-only Motivation

	MIPPQ	MIPPQA	MIFIS	MEPPQ	MEPPQA	MEFIS
CRS	.106	.092	.019	.208	.194	.161
PPQ	.479***	.366**	.271*	-.016	.037	-.006
PPQA	.193	.332**	.280*	.047	-.011	.009
FIS	.288*	.417***	.463***	-.003	-.024	.128
SPPQ	.291*	.206	.144	.193	.150	.160
SPPQA	.207	.310**	.160	.194	.142	.075
SFIS	.151	.252*	.309**	.108	.043	.216
PSS	-.374**	-.310**	-.333**	-.162	-.101	-.114
Child Age	-.253*	-.045	-.022	-.028	.015	-.096
Father Age	-.193	-.139	-.118	.013	.086	-.104
Coparent Age	-.310**	-.233	-.162	.148	.216	.034
Marital Satisfaction	-.005	.088	.076	-.168	-.117	-.088
Hours Worked - Father	.103	-.113	-.043	.080	.050	.051
Hours Worked - Coparent	-.027	.042	.105	.084	.085	.041
Income	-.322*	-.453**	-.237	-.213	-.252	-.197
Education	-.055	.007	.077	-.069	-.051	-.022

Note. * significant at the .05 level, ** significant at the .01 level, *** significant at the .001 level.
MIPPQ = Intrinsic-only Motivation for involvement in Physical Play Behaviours, MIPPQA = Intrinsic-only Motivation for involvement in Play Activities, MIFIS = Intrinsic-only Motivation for involvement in Childcare, MEPPQ = Extrinsic-only Motivation for involvement in Physical Play Behaviours, MEPPQA = Extrinsic-only Motivation for involvement in Play Activities, MEFIS = Extrinsic-only Motivation for involvement in Childcare, CRS = Coparenting Relationship Scale, PPQ = Involvement in Physical Play Behaviours, PPQA = Involvement in Play Activities, FIS = Involvement in Childcare, SPPQ = Satisfaction with involvement in Physical Play Behaviours, SPPQA = Satisfaction with involvement in Play Activities, SFIS = Satisfaction with involvement in Childcare, PSS = Parental Stress Scale.

In reviewing the correlations, fathers' intrinsic-only motivation for involvement in physical play behaviours was significantly related to their involvement in physical play behaviours. In addition, fathers' intrinsic-only motivation for involvement in play activities was significantly related to their involvement in play activities. Once more, fathers' intrinsic-only motivation for involvement in childcare was significantly related to their involvement in childcare. Additional analyses were completed to test whether fathers' intrinsic-only motivation was a significant predictor of fathers' involvement (consistent with self-determination theory).

Three additional MRA's were conducted to test whether fathers' intrinsic-only motivation for involvement significantly predicted their involvement in physical play behaviours, play activities, and childcare. The regression model with involvement in physical play behaviours as the outcome variable included the age of the children with autism and the coparent, as well as income, as control variables in step 1. In step 1, the regression model was significant, $F(3, 60) = 7.24, p = .000$ (see Table 9). In step 2, when fathers' intrinsic-only motivation was entered into the model, the regression model continued to be significant, $F(4, 59) = 10.95, p = .000$. Fathers' intrinsic-only motivation for involvement was a significant predictor of more frequent involvement in physical play behaviours, $\beta = .435, t(59) = 4.06, p = .000$ (see Table 9).

The regression model with involvement in play activities as the outcome variable included the number of hours worked by fathers and their income as control variables in step 1. In step 1, the regression model was significant, $F(2, 68) = 4.87, p = .011$ (see Table 9). In step 2, when fathers' intrinsic-only motivation was entered into the model, the regression model continued to be significant, $F(3, 67) = 5.57, p = .002$. Fathers' intrinsic-only motivation for involvement was a significant predictor of more frequent involvement in play activities, $\beta = .289,$

$t(67) = 2.49$, $p = .015$ (see Table 9).

The regression model with involvement in childcare as the outcome variable included the ages of the children with autism, the father, and the coparent, as well as the number of hours worked by fathers as control variables in step 1. In step 1, the regression model was significant, $F(4, 57) = 3.05$, $p = .024$ (see Table 9). In step 2, when fathers' intrinsic-only motivation was entered into the model, the regression model continued to be significant, $F(5, 56) = 7.82$, $p = .000$. Father's intrinsic-only motivation for involvement was a significant predictor of more frequent involvement in childcare, $\beta = .511$, $t(56) = 4.72$, $p = .000$ (see Table 9). For all three MRA's, more intrinsic-only motivation was related to more frequent involvement.

Table 9

Regression Analyses of Intrinsic-only Motivation Predicting Fathers' Involvement

Variable	F	R ²	Unstandardized Coefficients		Standardized Coefficients β	Semi-Partial Correlations sr ²
			B	SE		
PPQ						
Step 1	7.24***	.27				
Child Age			-2.11	0.82	-.319*	-.10
Coparent Age			-0.45	0.32	-.174	-.03
Income			0.00	0.00	-.253*	-.08
Step 2	10.95***	.43				
Child Age			-1.58	0.75	-.239*	-.07
Coparent Age			-0.20	0.29	-.077	-.00
Income			0.00	0.00	-.188*	-.06
MIPPQ			0.75	0.19	.435***	.22
PPQA						
Step 1	4.87*	.13				
Hours Worked – Father			-0.52	0.31	-.204	-.04
Income			0.00	0.00	-.221	-.05
Step 2	5.57**	.20				
Hours Worked - Father			-0.54	0.30	-.214	-.05
Income			0.00	0.00	-.123	-.01
MIPPQA			0.07	0.03	.289*	.08
FIS						
Step 1	3.05*	.18				
Child Age			-1.40	1.02	-.183	-.03
Father Age			-0.51	0.52	-.181	-.02
Coparent Age			-0.17	0.59	-.054	-.00
Hours Worked – Father			-1.17	0.58	-.254*	-.07
Step 2	7.82***	.41				
Child Age			-1.54	0.87	-.202	-.05
Father Age			-0.08	0.45	-.028	-.00
Coparent Age			-0.17	0.50	-.055	-.00
Hours Worked – Father			-0.76	0.51	-.165	-.04
MIFIS			1.22	0.26	.511***	.29

Note. PPQ = Involvement in physical play behaviours, PPQA = Involvement in play activities, FIS = Involvement in childcare, MIPPQ = Intrinsic-only motivation for involvement in physical play behaviours, MIPPQA = Intrinsic-only motivation for involvement in play activities, MIFIS = Intrinsic-only motivation for involvement in childcare. *p < .05, **p < .01, ***p < .001.

Parenting stress. Responses from the phone interview and open-ended survey questions highlighted that parenting children with autism was stressful for fathers. Many fathers reported feeling stressed (to varying degrees) and fatigued. In addition, fathers shared experiences of being better able to engage with their children with autism when they were relaxed, patient, and supported (i.e., less stressed; see Thematic Analyses section). Furthermore, parenting stress was significantly correlated with fathers' involvement in physical play behaviours, play activities, and childcare (see Table 3). As a result, the researcher decided to analyze the relationship between parenting stress and fathers' involvement. Specifically, multiple regression analyses were run to test whether parenting stress was a significant predictor of fathers' involvement.

Three additional MRA's were conducted to test whether fathers' parenting stress significantly predicted their involvement in physical play behaviours, play activities, and childcare. The regression model with involvement in physical play behaviours as the outcome variable included the age of the children with autism and the coparent, as well as income, as control variables in step 1. In step 1, the regression model was significant, $F(3, 60) = 7.24, p = .000$ (see Table 10). In step 2, when fathers' parenting stress was entered into the model, the regression model continued to be significant, $F(4, 59) = 5.98, p = .000$. However, fathers' parenting stress was not a significant predictor of their involvement in physical play behaviours, $\beta = -.151, t(59) = -1.37, p = .176$ (see Table 10).

The regression model with involvement in play activities as the outcome variable included the number of hours worked by fathers and their income as control variables in step 1. In step 1, the regression model was significant, $F(2, 68) = 4.87, p = .011$ (see Table 10). In step 2, when fathers' parenting stress was entered into the model, the regression model continued to be significant, $F(3, 67) = 5.29, p = .002$. Lower parenting stress was a significant predictor of

more frequent involvement in play activities for fathers, $\beta = -.259$, $t(67) = -2.34$, $p = .022$ (see Table 10).

The regression model with involvement in childcare as the outcome variable included the ages of the children with autism, the father, and the coparent, as well as the number of hours worked by fathers as control variables in step 1. In step 1, the regression model was significant, $F(4, 57) = 3.05$, $p = .024$ (see Table 10). In step 2, when fathers' parenting stress was entered into the model, the regression model continued to be significant, $F(5, 56) = 4.32$, $p = .002$. Lower parenting stress was a significant predictor of more frequent involvement in childcare for fathers, $\beta = -.319$, $t(56) = -2.81$, $p = .007$ (see Table 10).

Table 10

Regression Analyses of Parenting Stress Predicting Fathers' Involvement

Variable	F	R ²	Unstandardized Coefficients		Standardized Coefficients β	Semi-Partial Correlations sr ²
			B	SE		
PPQ						
Step 1	7.24***	.27				
Child Age			-2.11	0.82	-.319*	-.10
Coparent Age			-0.45	0.32	-.174	-.03
Income			0.00	0.00	-.253*	-.08
Step 2	5.98***	.29				
Child Age			-2.11	0.82	-.320*	-.10
Coparent Age			-0.43	0.32	-.169	-.03
Income			0.00	0.00	-.240*	-.07
Parenting Stress			-0.19	0.14	-.151	-.03
PPQA						
Step 1	4.87*	.13				
Hours Worked – Father			-0.52	0.31	-.204	-.04
Income			0.00	0.00	-.221	-.05
Step 2	5.29**	.19				
Hours Worked - Father			-0.56	0.30	-.221	-.05
Income			0.00	0.00	-.192	-.04
Parenting Stress			-0.20	0.09	-.259*	-.08
FIS						
Step 1	3.05*	.18				
Child Age			-1.40	1.02	-.183	-.03
Father Age			-0.51	0.52	-.181	-.02
Coparent Age			-0.17	0.59	-.054	-.00
Hours Worked – Father			-1.17	0.58	-.254*	-.07
Step 2	4.32**	.28				
Child Age			-1.39	0.96	-.183	-.04
Father Age			-0.51	0.49	-.181	-.02
Coparent Age			-0.17	0.55	-.056	-.00
Hours Worked – Father			-1.20	0.55	-.258*	-.08
Parenting Stress			-0.47	0.17	-.319**	-.12

Note. PPQ = Involvement in physical play behaviours, PPQA = Involvement in play activities, FIS = Involvement in childcare. *p < .05, **p < .01, ***p < .001.

Research Question 3: How are fathers' satisfied with their involvement with their children with autism and what are the predictors of this satisfaction? From this, it was hypothesized that coparenting relationship quality would be related to fathers' satisfaction with involvement (hypothesis 3). Specifically, it was hypothesized that higher coparenting relationship quality would be positively related to fathers' satisfaction with involvement in physical play behaviours (hypothesis 3a) and that this relationship would be mediated by fathers' intrinsic motivation (hypothesis 3b). Moreover, it was hypothesized that higher coparenting relationship quality would be positively related to fathers' satisfaction with involvement in play activities (hypothesis 3c) and that this relationship would be mediated by fathers' intrinsic motivation (hypothesis 3d). It was also hypothesized that higher coparenting relationship quality would be positively related to fathers' satisfaction with involvement in childcare (hypothesis 3e) and that this relationship would be mediated by fathers' intrinsic motivation (hypothesis 3f).

Three MRA's were conducted to test whether coparenting relationship quality significantly predicted fathers' satisfaction with involvement in physical play behaviours, play activities, and childcare (hypothesis 3). The regression model with satisfaction with involvement in physical play behaviours as the outcome variable included the age of the children with autism and the father, as well as fathers' marital satisfaction, as control variables in step 1. In step 1, the regression model was significant, $F(3, 61) = 8.74, p = .000$ (see Table 11). In step 2, when coparenting relationship quality was entered into the model, the regression model continued to be significant, $F(4, 60) = 6.53, p = .000$. However, coparenting relationship quality was not a significant predictor of fathers' satisfaction with involvement in physical play behaviours, $\beta = .069, t(60) = 0.46, p = .644$ (see Table 11). As such, hypothesis 3a was not supported.

The regression model with satisfaction with involvement in play activities as the outcome

variable was a standard regression, as there were no significant control variables to include in step 1. The regression model for coparenting relationship quality predicting fathers' satisfaction with involvement in play activities was not significant, $F(1, 71) = 0.87, p = .354$ (see Table 11). As a result, hypothesis 3c was not supported.

The regression model with satisfaction with involvement in childcare as the outcome variable included the age of the children with autism, as well as fathers' marital satisfaction, as control variables in step 1. In step 1, the regression model was significant, $F(2, 64) = 5.10, p = .009$ (see Table 11). In step 2, when coparenting relationship quality was entered into the model, the regression model continued to be significant, $F(3, 63) = 3.51, p = .020$. However, coparenting relationship quality was not a significant predictor of fathers' satisfaction with involvement in childcare, $\beta = -.105, t(63) = -0.66, p = .515$ (see Table 11). Given this, hypothesis 3e was not supported.

Table 11

Regression Analyses of Coparenting Relationship Quality Predicting Fathers' Satisfaction with Involvement

Variable	F	R ²	Unstandardized Coefficients		Standardized Coefficients β	Semi-Partial Correlations sr ²
			B	SE		
S-PPQ						
Step 1	8.74***	.30				
Child Age			-0.53	0.14	-.417***	-.18
Father Age			-0.06	0.05	-.124	-.02
Marital Satisfaction			-0.58	0.21	.298**	.11
Step 2	6.53***	.30				
Child Age			-0.52	0.15	-.411***	-.17
Father Age			-0.06	0.06	-.102	-.02
Marital Satisfaction			-0.49	0.29	.022	.05
Coparenting Relationship Quality			0.00	0.01	.069	.00
S-PPQA						
Step 1	0.87	.01				
Coparenting Relationship Quality			0.02	0.03	.110	.01
S-FIS						
Step 1	5.10**	.14				
Child Age			-0.34	0.14	-.290*	-.09
Marital Satisfaction			-0.41	0.21	.227	.06
Step 2	3.51*	.14				
Child Age			-0.34	0.14	-.295*	-.09
Marital Satisfaction			-0.54	0.29	.299	.05
Coparenting Relationship Quality			-0.01	0.01	-.105	-.01

Note. S-PPQ = Satisfaction with involvement in physical play behaviours, S-PPQA = Satisfaction with involvement in play activities, S-FIS = Satisfaction with involvement in childcare. *p < .05, **p < .01, ***p < .001.

It was hypothesized that the relationship between coparenting relationship quality and fathers' satisfaction with involvement in physical play behaviours (3b), play activities (3d), and childcare (3f) would be mediated by fathers' intrinsic motivation for involvement. However, there was no direct effect, as coparenting relationship quality was not significantly related to fathers' satisfaction with involvement (see hypotheses 3a, 3c, and 3e). Moreover, in reviewing the correlation matrix (see Table 3), fathers' intrinsic motivation was not significantly correlated with fathers' satisfaction with involvement. As a result, it was deemed that the conditions necessary for mediation analyses were not met, and hypotheses 3b, 3d, and 3f were not tested.

Intrinsic-only motivation. The results suggested that fathers' coparenting relationship quality was not significantly related to their satisfaction with involvement. Moreover, fathers' motivation for involvement was not significantly related to fathers' satisfaction with involvement. However, fathers' intrinsic-only motivations for involvement was significantly correlated with fathers' satisfaction with their involvement in physical play behaviours, play activities, and childcare (see Table 8). Additional analyses were completed to test whether fathers' intrinsic-only motivation was a significant predictor of fathers' satisfaction with involvement (consistent with self-determination theory).

Three additional MRA's were conducted to test whether fathers' intrinsic-only motivation significantly predicted their satisfaction with involvement in physical play behaviours, play activities, and childcare. The regression model with satisfaction with involvement in physical play behaviours as the outcome variable included the age of the children with autism and the father, as well as fathers' marital satisfaction, as control variables in step 1. In step 1, the regression model was significant, $F(3, 61) = 8.74, p = .000$ (see Table 12). In step 2, when fathers' intrinsic-only motivation was entered into the model, the regression model

continued to be significant, $F(4, 60) = 12.46, p = .000$. Fathers' intrinsic-only motivation for involvement was a significant predictor of greater satisfaction with involvement in physical play behaviours, $\beta = .420, t(60) = 4.10, p = .000$ (see Table 12).

The regression model with satisfaction with involvement in play activities as the outcome variable was a standard regression, as there were no significant control variables to include in step 1. The regression model for fathers' intrinsic-only motivation predicting their satisfaction with involvement in play activities was significant, $F(1, 72) = 9.19, p = .003$ (see Table 12). Fathers' intrinsic-only motivation for involvement significantly predicted greater satisfaction with involvement in play activities, $\beta = .336, t(72) = 3.03, p = .003$ (see Table 12).

The regression model with satisfaction with involvement in childcare as the outcome variable included the age of the children with autism, as well as fathers' marital satisfaction, as control variables in step 1. In step 1, the regression model was significant, $F(2, 64) = 5.10, p = .009$ (see Table 12). In step 2, when fathers' intrinsic-only motivation was entered into the model, the regression model continued to be significant, $F(3, 63) = 6.93, p = .000$. Fathers' intrinsic-only motivation for involvement was a significant predictor of greater satisfaction with involvement in childcare, $\beta = .339, t(63) = 3.05, p = .003$ (see Table 12). For all three MRA's, more intrinsic-only motivation was related to greater satisfaction with involvement.

Table 12

Regression Analyses of Intrinsic-only Motivation Predicting Fathers' Satisfaction with Involvement

Variable	F	R ²	Unstandardized Coefficients		Standardized Coefficients β	Semi-Partial Correlations sr ²
			B	SE		
S-PPQ						
Step 1	8.74***	.30				
Child Age			-0.53	0.14	-.417***	-.18
Father Age			-0.06	0.05	-.124	-.02
Marital Satisfaction			-0.58	0.21	.298**	.11
Step 2	12.46***	.45				
Child Age			-0.40	0.13	-.316**	-.13
Father Age			-0.04	0.05	-.085	-.01
Marital Satisfaction			-0.59	0.19	.305**	.14
MIPPQ			0.14	0.03	.410***	.22
S-PPQA						
Step 1	9.19**	.11				
MIPPQA			0.10	0.03	.336**	.11
S-FIS						
Step 1	5.10**	.14				
Child Age			-0.34	0.14	-.290*	-.09
Marital Satisfaction			-0.41	0.21	.227	.06
Step 2	6.93***	.25				
Child Age			-0.30	0.13	-.260*	-.08
Marital Satisfaction			-0.31	0.20	.170	.04
MIFIS			0.12	0.04	.339**	.13

Note. S-PPQ = Satisfaction with involvement in physical play behaviours, S-PPQA = Satisfaction with involvement in play activities, S-FIS = Satisfaction with involvement in childcare, MIPPQ = Intrinsic-only motivation for involvement in physical play behaviours, MIPPQA = Intrinsic-only motivation for involvement in play activities, MIFIS = Intrinsic-only motivation for involvement in childcare. *p < .05, **p < .01, ***p < .001.

Parenting stress. Responses from the phone interview and open-ended survey questions highlighted that parenting children with autism was stressful for fathers, and that they better able to engage with their children with autism when they were relaxed, patient, and supported (i.e., less stressed; see Thematic Analyses section). In addition, parenting stress was significantly correlated with fathers' satisfaction with involvement in physical play behaviours, play activities, and childcare (see Table 3). As a result, the researcher decided to analyze the relationship between parenting stress and fathers' satisfaction with involvement.

Three additional MRA's were conducted to test whether fathers' parenting stress significantly predicted their satisfaction with involvement in physical play behaviours, play activities, and childcare. The regression model with satisfaction with involvement in physical play behaviours as the outcome variable included the age of the children with autism and the father, as well as fathers' marital satisfaction, as control variables in step 1. In step 1, the regression model was significant, $F(3, 61) = 8.74, p = .000$ (see Table 11). In step 2, when fathers' parenting stress was entered into the model, the regression model continued to be significant, $F(4, 60) = 8.82, p = .000$. Lower parenting stress was a significant predictor of greater satisfaction with involvement in physical play behaviours for fathers, $\beta = -.277, t(60) = -2.57, p = .013$ (see Table 13).

The regression model with satisfaction with involvement in play activities as the outcome variable was a standard regression, as there were no significant control variables to include in step 1. The regression model for fathers' parenting stress predicting their satisfaction with involvement in play activities was significant, $F(1, 71) = 13.18, p = .001$ (see Table 13). Lower parenting stress significantly predicted greater satisfaction with involvement in play activities for fathers, $\beta = -.393, t(72) = -3.63, p = .001$ (see Table 13).

The regression model with satisfaction with involvement in childcare as the outcome variable included the age of the children with autism, as well as fathers' marital satisfaction, as control variables in step 1. In step 1, the regression model was significant, $F(2, 64) = 5.10, p = .009$ (see Table 13). In step 2, when fathers' parenting stress was entered into the model, the regression model continued to be significant, $F(3, 63) = 5.95, p = .001$. Lower parenting stress was a significant predictor of greater satisfaction with involvement in childcare for fathers, $\beta = -.305, t(63) = -2.60, p = .012$ (see Table 13). For all three MRA's, lower parenting stress was related to greater satisfaction with involvement.

Table 13

Regression Analyses of Parenting Stress Predicting Fathers' Satisfaction with Involvement

Variable	F	R ²	Unstandardized Coefficients		Standardized Coefficients β	Semi-Partial Correlations sr ²
			B	SE		
S-PPQ						
Step 1	8.74***	.30				
Child Age			-0.53	0.14	-.417***	-.18
Father Age			-0.06	0.05	-.124	-.02
Marital Satisfaction			-0.58	0.21	.298**	.11
Step 2	8.82***	.37				
Child Age			-0.54	0.14	-.426***	-.20
Father Age			-0.05	0.05	-.104	-.01
Marital Satisfaction			-0.41	0.21	.211	.06
Parenting Stress			-0.07	0.03	-.277*	-.10
S-PPQA						
Step 1	13.18***	.16				
Parenting Stress			-0.34	0.09	-.393***	-.15
S-FIS						
Step 1	5.10**	.14				
Child Age			-0.34	0.14	-.290*	-.09
Marital Satisfaction			-0.41	0.21	.227	.06
Step 2	5.95***	.22				
Child Age			-0.33	0.13	-.287*	-.10
Marital Satisfaction			-0.23	0.21	.128	.02
Parenting Stress			-0.07	0.03	-.305*	-.10

Note. S-PPQ = Satisfaction with involvement in physical play behaviours, S-PPQA = Satisfaction with involvement in play activities, S-FIS = Satisfaction with involvement in childcare, MIPPQ = Intrinsic-only motivation for involvement in physical play behaviours, MIPPQA = Intrinsic-only motivation for involvement in play activities, MIFIS = Intrinsic-only motivation for involvement in childcare. *p < .05, **p < .01, ***p < .001.

Research Question 4: How are fathers of children with autism supported by their coparents? It is well known that fathers of children with autism experience a great deal of parenting stress and often have to rely on their coparents for support. From this, it was hypothesized that coparenting relationship quality would be related to fathers' parenting stress (hypothesis 4). Specifically, it was hypothesized that higher coparenting relationship quality would be negatively related to parenting stress (hypothesis 4a), and that fathers' intrinsic motivation would mediate this relationship (hypothesis 4b).

An MRA was conducted to test whether coparenting relationship quality significantly predicated fathers' parenting stress (hypothesis 4). The regression model with parenting stress as the outcome variable included fathers' marital satisfaction as a control variable in step 1. In step 1, the regression model was significant, $F(1, 70) = 9.07, p = .004$ (see Table 14). In step 2, when coparenting relationship quality was entered into the model, the regression model continued to be significant, $F(2, 69) = 4.47, p = .015$. However, coparenting relationship quality was not a significant predictor of fathers' parenting stress, $\beta = -.004, t(69) = -0.03, p = .978$ (see Table 14). As such, hypothesis 4a was not supported.

It was hypothesized that the relationship between coparenting relationship quality and fathers' parenting stress would be mediated by fathers' intrinsic motivation (hypothesis 4b). However, there was no direct effect, as coparenting relationship quality was not significantly related to fathers' parenting stress (see hypotheses 4a). Moreover, in reviewing the correlation matrix (see Table 14), fathers' intrinsic motivation was not significantly correlated with fathers' parenting stress. As a result, it was deemed that the conditions necessary for mediation analyses were not met, and hypothesis 4b was not tested.

Table 14

Regression Analyses of Coparenting Relationship Quality Predicting Fathers' Parenting Stress

Variable	F	R ²	Unstandardized Coefficients		Standardized Coefficients β	Semi-Partial Correlations sr^2
			B	SE		
Step 1	9.07**	.12				
Marital Satisfaction			2.74	0.91	-.339**	-.11
Step 2	4.47*	.12				
Marital Satisfaction			2.72	1.24	-.336*	-.07
Coparenting Relationship Quality			-0.00	0.04	-.004	-.00

Note. *p < .05, **p < .01.

Previous research has found that higher coparenting relationship quality was related to lower parenting stress in parents of children with autism (May et al., 2015; Norlin & Borberg, 2013). Moreover, responses from fathers in the phone interview and open-ended survey questions highlighted the support that they received from their coparents and how they were able to take breaks and feel understood as a result. However, after controlling for marital satisfaction, coparenting relationship quality was not significantly related to parenting stress in the present study (see hypothesis 4a). That being said, coparenting relationship quality was significantly correlated with parenting stress, when marital satisfaction was not included in the model, $r(75) = -.242, p = .036$ (see Table 3). This suggested that higher coparenting relationship quality may be related to lower parenting stress, but that this effect was masked by marital satisfaction.

The seven subscales of coparenting relationship quality were correlated with fathers' parenting stress to examine which aspects of coparenting relationship quality were most important to parenting stress scores (see Table 15). Based on the correlations, fathers' exposure to conflict and coparenting closeness were two facets of coparenting relationship quality that were significantly related to fathers' parenting stress. For both relationships, better coparenting relationship quality (i.e., less exposure to conflict, more coparenting closeness) was related to lower parenting stress scores.

Table 15

Intercorrelations of Coparenting Relationship Subscales with Parenting Stress

Coparenting Subscales	Parenting Stress
Exposure to Conflict	-.388**
Coparenting Closeness	-.329**
Endorsement of Partner Parenting	-.141
Division of Labor	-.094
Coparenting Agreement	-.181
Coparenting Support	-.176
Coparenting Undermining	-.069

Note. ** is significant at the .01 level.

Two additional MRA's were conducted to test whether fathers' exposure to conflict or coparenting closeness significantly predicted fathers' parenting stress. The regression model with fathers' exposure to conflict as the predictor variable included their marital satisfaction as a control variable in step 1. In step 1, the regression model was significant, $F(1, 70) = 9.07, p = .004$ (see Table 16). In step 2, when fathers' exposure to conflict was entered into the model, the regression model continued to be significant, $F(2, 69) = 7.22, p = .001$. Less exposure to conflict (i.e., greater coparenting quality) was a significant predictor of lower parenting stress for fathers, $\beta = -.279, t(69) = -2.21, p = .031$ (see Table 16).

The regression model with fathers' coparenting closeness as the predictor variable included fathers' marital satisfaction as a control variable in step 1. In step 1, the regression model was significant, $F(1, 70) = 9.07, p = .004$ (see Table 14). In step 2, when fathers' coparenting closeness was entered into the model, the regression model continued to be significant, $F(2, 69) = 5.06, p = .009$. However, fathers' coparenting closeness was not a significant predictor of their parenting stress, $\beta = -.175, t(69) = -1.02, p = .313$ (see Table 16).

Table 16

Regression Analyses of Coparenting Relationship Quality Subscales Predicting Fathers' Parenting Stress

Variable	F	R ²	Unstandardized Coefficients B	Standardized Coefficients β	Semi-Partial Correlations sr ²
Step 1	9.07**	.12			
Marital Satisfaction			2.74	0.91	-.339**
Step 2	7.22***	.17			
Marital Satisfaction			1.61	1.02	-.199
Exposure to Conflict			-0.52	0.24	-.279*
Step 1	9.07**	.12			
Marital Satisfaction			2.74	0.91	-.339**
Step 2	5.06**	.13			
Marital Satisfaction			1.67	1.39	-.207
<u>Coparenting Closeness</u>			-0.23	0.22	-.175

Note. *p < .05, **p < .01, ***p < .001.

Thematic Analysis

The qualitative research question was: What are fathers' experiences of coparenting support, motivation for involvement, involvement, satisfaction with involvement, and well-being?

In total, 20 fathers participated in an optional interview by phone or Skype to answer questions relevant to the qualitative research question. In addition, all fathers who completed the survey (N=76) were presented with three open-ended questions about fathers' satisfaction with their involvement and about their child's favourite activity, and many fathers (n=41) responded to these. Thematic analysis was used to analyze the interview and open-ended survey responses (Braun & Clarke, 2006). In total, eight themes were identified with 16 sub-themes (see Table 17). Several themes were given a positive or negative valence, according to their content.

Table 17

Themes and Sub-Themes Identified from Fathers' Interviews (n=20) and Open-Ended Survey Questions (n=41) Using Thematic Analysis

Theme	Sub-Theme (Valence)	N (%)	
		Interview	Survey
Coparenting Support		20 (100)	5 (11.36)
	Teamwork and Communication (+)	15 (75)	4 (9.1)
	Unconditional and Deep Understanding (+)	12 (60)	
	Coparent Takes the Lead and Facilitates (+)	14 (70)	1 (2.3)
	Negative and Lack of Support (-)	12 (60)	
	Legal, Custodial, and Practical Considerations (-)	5 (25)	
Support from Others		15 (75)	2 (4.5)
	Helpful (+)	5 (25)	1 (2.3)
	Unhelpful (-)	8 (40)	
	Non-Existent (-)	7 (35)	
	The 'System' (-)	8 (40)	1 (2.3)
Fathers' Outcomes		20 (100)	3 (6.8)
	Growth and Improved Well-Being (+)	13 (65)	1 (2.3)
	Happiness and Rewarding (+)	8 (40)	
	Affectionate Father-Child Relationship (+)	9 (45)	2 (4.5)
	Fear of the Future (-)	3 (15)	
	Stress and Fatigue (-)	13 (65)	
	Lifestyle Restrictions (-)	7 (35)	
Generativity		18 (90)	16 (36.36)
	Passion for Improvement	9 (45)	7 (15.91)
Varying Satisfaction		19 (95)	10 (22.73)
Pros and Cons of Work		5 (25)	9 (20.45)
Evolving Views of Fathers		9 (45)	1 (2.3)
Child with Autism's Strengths and Weaknesses		11 (55)	11 (25)

Coparenting Support. A theme of *Coparenting Support* was identified based on responses from fathers in this sample. Responses within this theme highlighted both the positive and negative aspects of coparenting support. As such, this theme consisted of three positive and two negative sub-themes (see Table 17).

Teamwork and Communication. This sub-theme included responses from fathers who highlighted the importance and value of open communication with their coparent. Many fathers used terms of ‘teamwork’ to describe their relationship with their coparent, in their joint efforts to parent their children with autism. For instance, one father stated “I’m really satisfied with her and I and our ability to stay civil and really have good teamwork as coparents, despite the fact that we have some pretty contentious legal stuff on our hands” (Father #11). Another father noted “communication between parenting partners is very essential. Not just going through the motions, asking ‘how was your day’, but identifying specific circumstances and reflecting on it so that it doesn’t happen again” (Father #16). Father #18 added, “when I need a stress break, I’m able to get a stress break... she’ll give me that break like anytime”.

Unconditional and Deep Understanding. This sub-theme was identified based on responses from fathers who reported feeling that their relationship with their coparent was strengthened because of the deep understanding that they shared regarding their children with autism. Fathers’ responses suggested that they felt they could rely on their partner unconditionally, given their shared understanding. For example, one father said, “with her, the support is unconditional, it’s unquestioned, and it’s always available” (Father #11). Another father stated, “the support that I get from her is deeper. It comes from a place of deep understanding of what I am going through and what we are going through as a family” (Father #1).

Coparent Takes the Lead and Facilitates. This sub-theme was identified based on responses from fathers who stated that they are able to be involved and kept informed regarding their children with autism because their coparent takes the lead and facilitates this for them. For instance, Father #16 mentioned “she would be reading up on, for example The Explosive Child, and highlight passages for me. Then, I would review those passages and then we would discuss ways to implement solutions”.

Negative and Lack of Support. This sub-theme included responses that highlighted the unhelpful, or lack of, support that some fathers’ experienced from their coparent. This sub-theme also included responses from fathers who reported that they did not experience any or enough, support from their coparent. One father stated, “(if) I know he’s frustrated or upset but I still want to push him to keep doing it, she will make me stop, because she doesn’t think that we should be doing it that way” (Father #6). Another father (#3) noted that their coparent would not bring their child with autism to their agreed-upon ABA sessions.

Legal, Custodial, and Practical Considerations. This sub-theme was identified based on responses from fathers who mentioned that these considerations of their coparenting relationship impacted fathers. For instance, one father mentioned that “because I didn’t support her relocating my child out of the city away from his family, she decided to serve me with court papers and then restricted my access to seeing him” (Father #11). Another father said, “I am constantly having to try and navigate either the legal system or find loopholes to get my son treatment with minimal consent from her or having to do it only on my custodial leash” (Father #3).

Support from Others. Responses within this theme highlighted both the positive and negative aspects of support that fathers’ experienced from people other than their coparent. This theme consisted of one positive and three negative sub-themes (see Table 17).

Helpful. This sub-theme highlighted positive and helpful experiences of support that fathers experienced from anyone other than their coparent. For example, one father stated “we have had a lot of help from work, from social workers, and from speech therapists, my parents, her parents, lots of support from people around us” (Father #2). Another father mentioned, “we have new friends in the autism community” (Father #19).

Unhelpful. This sub-theme was similarly identified based on responses from fathers in this sample. This sub-theme was identified based on responses from fathers who mentioned receiving support from others that was ultimately unhelpful. One father stated, “basically, we (coparent) understand each other where others try to support but aren’t. Either they don’t know how to, or they are awkward in the support, or just say ‘hey we’re there for you’ and that’s pretty much it” (Father #7). Another father (#21) noted that most people give “encouragement rather than support”.

Non-Existent. This sub-theme was identified based on responses from fathers who reported that they did not have *any* supports other than their coparent. Fathers shared that they felt isolated or insular. For instance, one father said “we essentially don’t receive support from other people. We’re islands” (Father #20). Another father mentioned that “there really isn’t any other support. I do it by myself” (Father #4).

The ‘System’. This sub-theme was named for the various responses from fathers that mentioned difficulties and discontent with the ‘system’. Fathers shared difficulties with finances, community supports, accessibility of information, and the ‘system’ in general. For example, one father said “the way the information was presented to me and I didn’t really understand the options of how to treat him. There were not any real guides. The system is very difficult to

navigate" (Father #3). One father (#15) mentioned going \$20,000 to \$30,000 in debt to provide therapies for their child with autism.

Fathers' Outcomes. A theme of *Fathers' Outcomes* was identified based on responses from fathers in this sample. Responses within this theme highlighted both the positive and negative outcomes for fathers as a result of parenting children with autism. This theme consisted of three positive and three negative sub-themes (see Table 17).

Growth and Improved Well-Being. This sub-theme was identified based on responses from fathers who shared that they had grown, learned, become better people, or generally improved their well-being. For instance, one father said that parenting a child with autism "taught me more patience and acceptance of differences" (Father #7). Another father said, "I'm a warmer, kinder, nicer person than I was before my son came along" (Father #13).

Happiness and Rewarding. This sub-theme highlighted responses from fathers who reported feeling great joy and happiness from being with their children with autism. Fathers also shared how rewarding it was to be with their children with autism. One father stated, "I knew that they were happy, that they were there in that moment, with me as their dad. And I was very happy to be there with him" (Father #1). Another father (#18) described taking his child with autism out to an event and seeing them enjoy it as a rewarding experience.

Affectionate Father-Child Relationship. This sub-theme was identified based on responses from fathers who shared feeling closely connected with their children with autism and that they had a good relationship. For instance, one father on the open-ended survey question noted, "when reading books or playing with Thomas (the Train), it allows us to bond" (Father #47). Several fathers also reported feeling affectionate toward their children with autism, simply saying 'I love them'.

Fear of the Future. This sub-theme was identified based on responses from fathers who mentioned feeling afraid and concerned about what would happen to their children with autism in the future, or when the father died. One father (#20) noted that they had to focus on “trying not to die” because otherwise no one would be there to help their child or to pay for someone to help him. Another father said, “I have to pay more attention to what I’m doing, because I have to last longer for these kids” (Father #17).

Stress and Fatigue. This sub-theme was identified based on responses from fathers who reported feeling stressed and fatigued to varying degrees. For instance, one father said “stress is really bad, it’s a killer. You can’t even explain the stress that we go through” (Father #20). Another father (#7) highlighted the severity of stress, noting that the autism diagnosis is “like a hurricane that hits your family”. With respect to fatigue, one father said that “more often our kids require more work than most other kids, which is taxing. And, there’s a word for that; it’s called fatigue” (Father #16).

Lifestyle Restrictions. This sub-theme highlighted fathers describing various sacrifices or limitations to their lifestyle that they have encountered as a result of parenting their children with autism. These restrictions affected engaging in hobbies, having a social life, their personal goals, and more. For example, one father said “I’ve cut myself off from my friends, my social life. I am a musician; I’ve cut myself off from that hobby. I don’t have a physical relationship with my wife for the most part” (Father #19). Another father noted “I don’t get to go out as much. I used to go camping out in the woods, which I don’t get to do as much” (Father #12).

Generativity. Responses within this theme highlighted fathers’ motivations for being involved with their children with autism. Fathers shared a concern for their children’s future well-being, and reported being involved with their children with autism to help them succeed in

the future and make things easier for them. Fathers' responses highlighted a range of motivations, from more enjoyable and voluntary involvement to more required and necessary involvement. For instance, one father said "I have a sense of obligation to do right by him and to give him everything that I can to make it possible for him to function in this world" (Father #1). Another father stated "my goal is to help them become independent members of society and be productive, that's my ultimate goal" (Father #16). Father #13 added "that's every parent's job, to prepare their children to go into the world and prosper as best as possible independently".

Passion for Improvement. This sub-theme highlighted responses from fathers who mentioned wanting to do more and/or wishing that there was more they could do for their children with autism. For instance, one father said "I feel like I'm doing as much as I can and I'm happy with that, but I wish I could do more" (Father #21). Another father said "I think technically as a parent I always think there's always more I could do" (Father #6).

Varying Satisfaction. A theme of *Varying Satisfaction* was identified based on responses from fathers in this sample. Responses within this theme highlighted the varying levels of satisfaction that fathers experienced in being involved with their children with autism. Across all fathers' responses, a range of satisfaction was reported, from highly satisfied to highly dissatisfied. For example, one father said "in general, I am very satisfied with my experience as a dad" (Father #10). Another father said "those long summer days at the waterparks and splash pads are the most satisfying" (Father #11). Some fathers reported being less satisfied. For instance, one father said "I grow less satisfied by the day, with everything that's happening. Access to resources gets harder and harder" (Father #17). Another father from the survey noted that "life is a balancing act between competing demands, and that will always lead to some dissatisfaction" (Father #61).

Pros and Cons of Work. A theme of *Pros and Cons of Work* was identified based on responses from fathers in this sample. Responses within this theme highlighted both the positive and negative consequences of having to go to work. Some fathers noted that going to work was a helpful distraction. For instance, one father said “it’s like at lunch, you take your shoes off and put your feet on the desk and close your eyes for five minutes. Moms cannot do that, not with autistic kids” (Father #17). Another father had a similar comment, stating “I’m lucky because I’m working, so I have this diversion, this delusion, that there is something else that I have to do well. But she (coparent) is stuck here” (Father #19). Other fathers mentioned that work entailed additional consequences. For example, one father said “when we would be out together at a park, I wouldn’t be as involved because I was just thinking about work” (Father #2). Father #20 reported that he had constant struggles with his employers who were not understanding that he had to show up late for work sometimes, because his child with autism needed more support in the morning.

Evolving Views of Fathers. A theme of *Evolving Views of Fathers* was identified based on responses from fathers in this sample. Responses within this theme highlighted both positive and negative views of fathers. Some fathers mentioned a positive view of fathers being more involved with their children with autism lately. For instance, one father said “I see a significant increase just in the last couple years in the involvement of fathers and how dads are kind of picking it up and not letting mothers do all the work. I think that’s a wonderful thing” (Father #3). Another father said “I think it’s important for fathers to remain involved in this. Maybe 25 years ago, moms would take care of everything in the household. And nowadays we see it differently” (Father #7). Other fathers reported feeling perceived or viewed negatively by others. For example, one father said “when I go to things where we’re gathered, I (a father) am a rarity.”

Some of the ladies look at me like I'm a weirdo, like 'what is that thing'" (Father #20). Another father said

when I am available to go to meetings that we have with the school board and with our ASD team, I feel like I am treated as a lesser, as a secondary, as an afterthought, because I am not the mother (Father #1).

Child with Autism's Strengths and Weaknesses. A theme of *Child with Autism's Strengths and Weaknesses* was identified based on responses from fathers in this sample. Responses within this theme highlighted both the strengths and weaknesses that fathers' reported regarding their children with autism. For instance, with respect to strengths, one father said "he's got an incredible attention for detail. It makes for interesting conversation" (Father #2). Another father said "she's very sensitive and very empathetic, which I think is a huge gift I wish we could have more in this world" (Father #4). Father (#15) said "generally, kids with autism they don't know how to cheat, so he's very good in interactions and very truthful, so that makes us happy". On the other hand, with respect to weaknesses, one father on the open-ended survey question said "I wish we could spend more time outdoors, but we don't have a fence, and our child is a flight risk" (Father #43). Another father said "she often lacks the desire, patience, or understanding to involve others in her play" (Father #42). From both the surveys and interviews, several fathers reported difficulties with sleep. For example, fathers noted that troubles with sleep lead to more "meltdowns" (Father #2), that they were awakened frequently by their child with autism (Father #6), or that they have to sleep in the child's room (Father #19).

Fathers were also asked at the end of the online survey to describe their children's favourite thing to do. From this, a list of various toys, games, and activities was generated (see Table 18). The list of toys, games, and activities that were generated are encapsulated by

physical play behaviours (e.g., being tickled, play wrestling) and play activities (e.g., Legos, Minecraft, reading, trampoline). This list may be helpful in identifying strategies for engaging with children with autism.

Table 18

*List of Favourite Things to Do for Children with Autism from Fathers' Open-Ended Survey
(n=41) Responses*

Activity	N	Percentage
Physical Play Behaviours		
Play Wrestling	2	4.88
Being Tickled	1	2.44
Chasing Games	1	2.44
Climbing	1	2.44
Cuddling	1	2.44
Jumping and Running	1	2.44
Rocking in a Chair	1	2.44
Swinging in a Hammock	1	2.44
Play Activities		
iPad	3	7.32
Playing with Cars and Trains	3	7.32
Videogames	3	7.32
Watching or Making Movies	3	7.32
Dancing	2	4.88
Reading	2	4.88
Swimming	2	4.88
Youtube	2	4.88
Arts and Crafts	1	2.44
Being in Nature	1	2.44
Fishing	1	2.44
Legos	1	2.44
Minecraft	1	2.44
Playing at the Park and Playground	1	2.44
Playing Hockey	1	2.44
Playing Music	1	2.44
Playing with Dolls	1	2.44
Playing with Letters	1	2.44
Playing with Marbles	1	2.44
Playing with Other Kids	1	2.44
Playing with Water	1	2.44
Puzzles	1	2.44
Riding the Bus	1	2.44
Singing	1	2.44
Trampoline	1	2.44

Additional Analyses

Results from the main analyses suggested that fathers' exposure to conflict (i.e., an aspect of their coparenting relationship) was significantly related to their parenting stress, and that fathers' parenting stress was significantly related to fathers' involvement in play activities and child-care, and to fathers' satisfaction with involvement. As such, the researcher decided to test these indirect effects. Although direct effects between coparenting relationship and fathers' involvement and satisfaction with involvement were not expected (as seen in the non-significant results to the analyses of hypotheses 2c, 2e, 3a, 3c, and 3e), recent literature puts forth that mediation analyses can still be run to test indirect effects.

Baron and Kenny (1986) contended that mediation analyses required there to be a significant direct effect. That is, there must be a relationship 'to be mediated'. However, recent literature has suggested that indirect effects on their own are of value. Zhao, Lynch Jr., and Chen (2010) reviewed Baron and Kenny's (1986) approach and argued for various models of mediation, including an indirect effect-only model. They reasoned that the direct effect is not necessary and that using mediation analyses to test an indirect effect is important. Similarly, Hayes (2013) argued that it is not a prerequisite for the X variable to predict the Y variable, for indirect effects to be estimated. His PROCESS model used bootstrapping to establish bias-corrected 95% confidence intervals to test the indirect effect (Hayes, 2013; Preacher & Hayes, 2008). With this model and bootstrapping approach, indirect effects can be tested even when direct effects are not present.

In the present study, Hayes' PROCESS model 4, with 1000 bootstrap samples, was used to test the indirect effect that fathers' exposure to conflict was significantly related to their parenting stress, which in turn, was significantly related to their involvement in play activities

and child-care, and to their satisfaction with involvement. Bias-corrected bootstrap 95% confidence intervals of the indirect effects are reported below in square brackets.

The indirect effect of parenting stress on the relationship between fathers' exposure to conflict and their involvement in play activities was tested. Fathers' exposure to conflict was significantly related to their parenting stress (path a; $b = -.72$), which was significantly related to their involvement in play activities (path b; $b = -.26$; see Figure 4). Given that zero was not within the 95% confidence interval of the bootstrapped estimate of indirect effect (path ab) for parenting stress [.052, .333], the indirect effect was deemed statistically significant (see Figure 4). The results indicated that less exposure to conflict significantly predicted less parenting stress, which in turn predicted more frequent involvement in play activities for fathers of children with autism.

The indirect effect of parenting stress on the relationship between fathers' exposure to conflict and their involvement in child-care was also tested. Once more, fathers' exposure to conflict was significantly related to their parenting stress (path a; $b = -.72$), which was significantly related to their involvement in child-care (path b; $b = -.43$; see Figure 4). Given that zero was not within the 95% confidence interval of the bootstrapped estimate of indirect effect (path ab) for parenting stress [.034, .614], the indirect effect was deemed statistically significant (see Figure 4). The results indicated that less exposure to conflict significantly predicted less parenting stress, which in turn predicted more frequent involvement in child-care for fathers of children with autism.

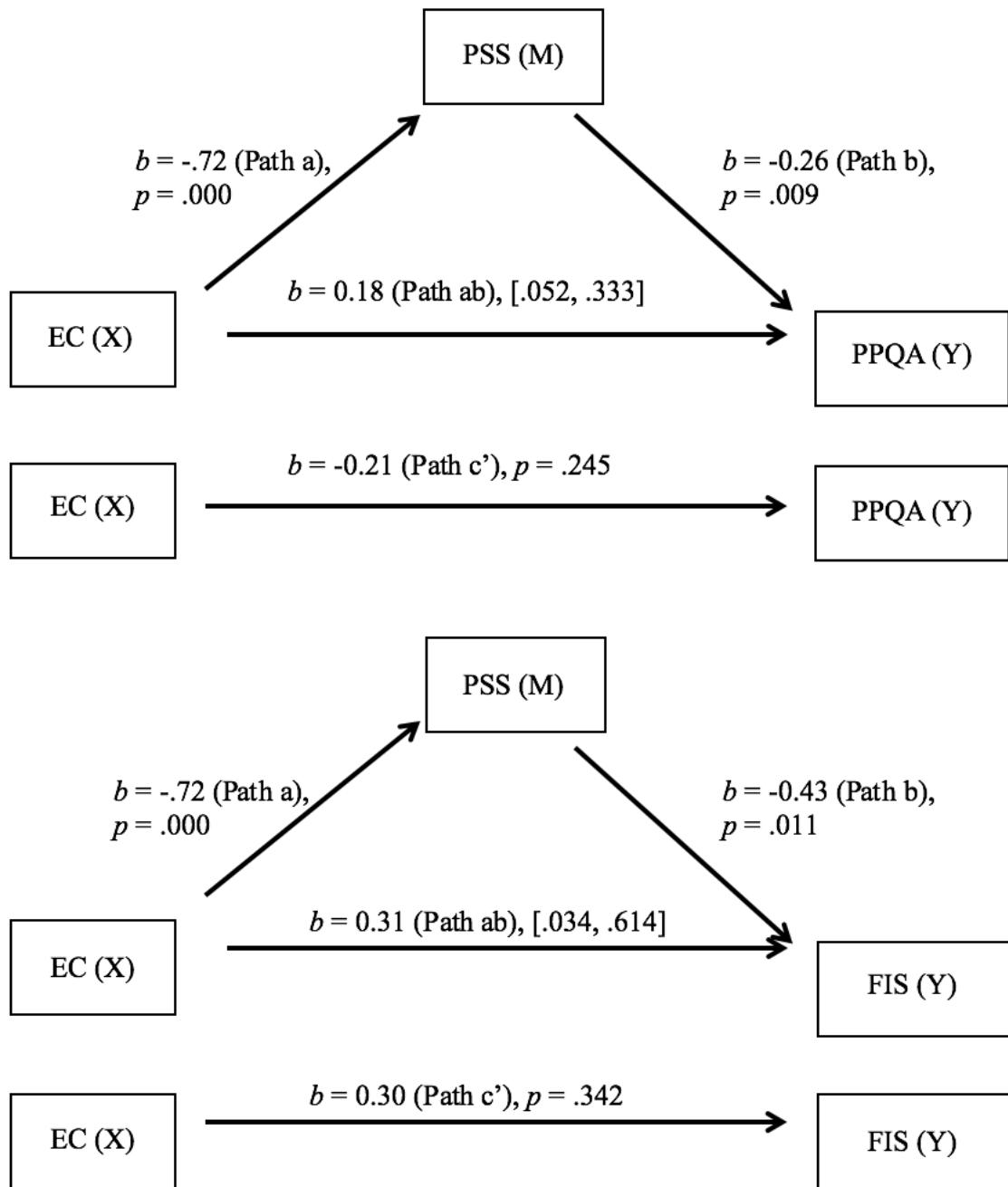


Figure 4. Indirect effects of fathers' parenting stress on the relationship between fathers' exposure to conflict and their involvement in play activities and childcare.

Note. EC = Exposure to Conflict, PSS = Parenting Stress, PPQA = Involvement in Play Activities, FIS = Involvement in Childcare.

Indirect effects were also tested for fathers' satisfaction with involvement in physical play behaviours, play activities, and child-care. Fathers' exposure to conflict was significantly related to their parenting stress (path a; $b = -.72$), though this was not significantly related to their satisfaction with involvement in physical play behaviours (path b; $b = -.06$; see Figure 5). As such, the indirect effect (path ab) for parenting stress included zero and was not statistically significant [-.008, .088] (see Figure 5). The results indicated that less exposure to conflict significantly predicted less parenting stress, but that parenting stress did not in turn predict fathers' satisfaction with involvement in physical play behaviours.

Fathers' exposure to conflict was significantly related to their parenting stress (path a; $b = -.72$), which was significantly related to their satisfaction with involvement in play activities (path b; $b = -.28$; see Figure 5). Given that zero was not within the 95% confidence interval of the bootstrapped estimate of indirect effect (path ab) for parenting stress [.025, .383], the indirect effect was deemed statistically significant (see Figure 5). The results indicated that less exposure to conflict significantly predicted less parenting stress, which in turn predicted more satisfaction with involvement in play activities for fathers of children with autism.

Fathers' exposure to conflict was significantly related to their parenting stress (path a; $b = -.72$), which was significantly related to their satisfaction with involvement in child-care (path b; $b = -.06$; see Figure 5). However, the 95% confidence interval for the indirect effect (path ab) for parenting stress included zero and was not statistically significant [-.003, .091] (see Figure 5). The results indicated that less exposure to conflict significantly predicted less parenting stress, but that parenting stress did not in turn predict fathers' satisfaction with involvement in child-care.

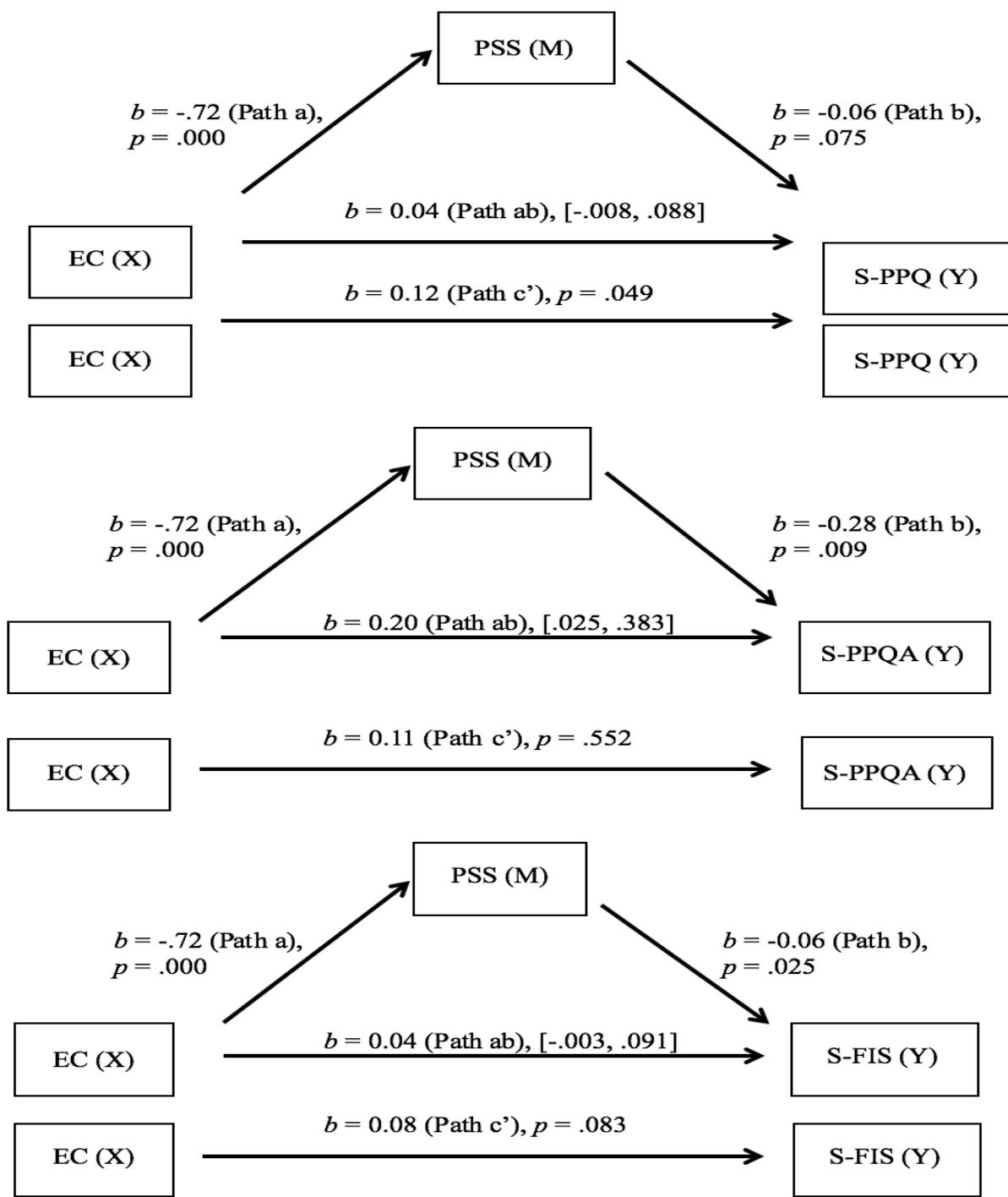


Figure 5. Indirect effects of fathers' parenting stress on the relationship between fathers' exposure to conflict and their satisfaction with involvement.

Note. EC = Exposure to conflict, PSS = Parenting stress, S-PPQ = Satisfaction with involvement in physical play behaviours, S-PPQA = Satisfaction with involvement in play activities, S-FIS = Satisfaction with involvement in childcare.

Summary of Results

Summary of Quantitative Results. The hypotheses for the present study were based on findings from previous research and self-determination theory. Additional quantitative analyses were run after completing the thematic analysis, as these were based mainly on information and questions that arose from fathers' responses from the phone/Skype interview and the open-ended survey questions, as well as significant correlations between the study variables.

Hypotheses 1a, 1b, and 1c were not supported, as higher coparenting relationship quality was not significantly related to fathers' intrinsic motivation for involvement in physical play behaviours, play activities, or child-care. Contrary to expectations, coparenting relationship quality was significantly related to fathers' *extrinsic* (rather than intrinsic) motivation for involvement in both physical play behaviours and play activities.

Hypotheses 2a and 2c were not supported, as coparenting relationship quality was not significantly related to fathers' involvement in physical play behaviours or play activities.

Hypothesis 2e was also not supported, as coparenting relationship quality was not significantly related to fathers' involvement in child-care. No mediation analyses were run.

Hypotheses 3a, 3c, and 3e were not supported, as coparenting relationship quality was not significantly related to fathers' satisfaction with involvement in physical play behaviours, play activities, or child-care. No mediation analyses were run.

Hypothesis 4a was originally not supported, as coparenting relationship quality was not significantly related to fathers' parenting stress. However, additional analyses added partial support for this hypothesis, as fathers' exposure to conflict (i.e., an aspect of the coparenting relationship) was significantly related to their parenting stress. No mediation analyses were run.

Additional analyses were run to test whether fathers' intrinsic-only motivation for involvement was a significant predictor for fathers' frequency of involvement and satisfaction with involvement, consistent with self-determination theory. Fathers' intrinsic-only motivation for involvement was found to be significantly related to their involvement in physical play behaviours, play activities, and child-care. Furthermore, fathers' intrinsic-only motivation for involvement was significantly related to their satisfaction with involvement in physical play behaviours, play activities, and child-care. For these relationships, more intrinsic-only motivation was related to more frequent involvement and greater satisfaction.

Quotations from fathers in the phone/Skype interview and open-ended survey questions suggested that they were better able to engage with their children with autism when they were relaxed, patient, and supported (i.e., less stressed). Based on this, additional analyses were run to test whether fathers' parenting stress was a significant predictor of fathers' involvement and satisfaction with involvement. Fathers' parenting stress was found to be significantly related to their involvement in play activities and child-care, and to their satisfaction with involvement in physical play behaviours, play activities, and child-care. Parenting stress was unrelated to fathers' involvement in physical play behaviours. For these relationships, less parenting stress was related to more frequent involvement and greater satisfaction.

Furthermore, mediation analyses were run to test the indirect effect of parenting stress on the relationship between fathers' exposure to conflict and their involvement and satisfaction with involvement. Significant indirect effects for parenting stress were found for the relationship between fathers' exposure to conflict and their involvement in both play activities and child-care, and for fathers' exposure to conflict and their satisfaction with involvement in play activities. For

these relationships, less exposure to conflict was related to less parenting stress, which in turn was related to more frequent involvement and greater satisfaction.

Summary of Thematic Analysis. The thematic analysis on the fathers' (n = 20) responses in the phone/Skype interview and open-ended survey questions (n = 41) identified eight themes and 16 sub-themes (see Table 17). Fathers' responses suggested that they received both positive and negative support from their coparents (i.e., theme of *Coparenting Support*) and from others (i.e., theme of *Support from Others*). Fathers reported positive aspects of coparenting support, including feeling like a teammate with their coparent (i.e., subtheme of *Teamwork and Communication*), feeling as though their coparent understood them (i.e., subtheme of *Unconditional and Deep Understanding*), and feeling as though their coparent helped them engage with their children (i.e., subtheme of *Coparent Takes the Lead and Facilitates*). On the other hand, fathers also reported experiencing some unhelpful support, or a lack of support, from their coparents (i.e., subtheme of *Negative and Lack of Support*), and reported being frustrated by legal, custodial, and practical limitations from their coparents (i.e., subtheme of *Legal, Custodial, Practical Considerations*). Fathers reported experiencing both *Positive* (subtheme) and *Unhelpful* (subtheme) support from people other than their coparents and some fathers reported that they did not receive any support at all from people other than their coparents (i.e., subtheme of *Non-Existential*). Fathers also reported negative experiences of support from *The 'System'* (subtheme) at large when it came to supporting them and their children's diagnosis.

A theme of *Fathers' Outcomes* was identified from fathers' responses regarding the impact of parenting children with autism and included three positive sub-themes and three negative sub-themes. Fathers reported that they grew and became better people (i.e., subtheme of *Growth and Improved Well-Being*), that they felt happier and more fulfilled (i.e., subtheme of

Happiness and Rewarding), and that their relationship with their children with autism became stronger and more affectionate (i.e., subtheme of *Affectionate Father-Child Relationship*), as a result of parenting children with autism. Fathers also reported that they had a fear of what would happen to their children in the future (i.e., subtheme of *Fear of the Future*), that they felt *Stress and Fatigue* (subtheme), and that they had to sacrifice their own goals/hobbies (i.e., subtheme of *Lifestyle Restrictions*), as a result of parenting children with autism.

A theme of *Generativity* was identified that highlighted the various reasons why fathers were involved with their children with autism, including adapting to their children's unique needs and setting them up for success in the future. Fathers also reported a desire to do more for their children (i.e., subtheme of *Passion for Improvement*). Fathers' responses suggested that they were satisfied with their involvement with their children with autism to varying degrees (i.e., theme of *Varying Satisfaction*).

A theme of *Pros and Cons of Work* was identified that highlighted both the positive (e.g., a welcome source of distraction) and negative (e.g., added stressors) aspects of working while parenting children with autism. Fathers shared their *Evolving Views of Fathers* (theme) including both positives (e.g., increased father involvement nowadays) and negatives (e.g., being viewed as an 'outsider' by other parents and professionals). A theme of *Child with Autism's Strengths and Weaknesses* was also identified, that highlighted the uniqueness of the children with autism, including their own favourite activities (see Table 18).

Discussion

Support for Fathers of Children with Autism

Support from Coparents. The present study is one of the first studies to measure the support that fathers of children with autism experienced from their coparents (see May et al., 2017 for another father-only study). Overall, fathers in this study reported high coparenting relationship quality and high scores on all seven types of support measured, including: endorsement of partner's parenting, division of labor, coparenting agreement, coparenting support, coparenting closeness, (less) exposure to conflict, and (less) coparenting undermining. Moreover, fathers' interview responses highlighted real-world examples of the support they received from their coparents. These fathers reported that they felt like teammates and on the same page as their coparents (*Teamwork and Communication*), that their coparents understood them deeply and unconditionally (*Unconditional and Deep Understanding*), and that their coparents helped to facilitate their involvement with their children (*Coparent Takes the Lead and Facilitates*). The theme of *Teamwork and Communication* was consistent with themes from previous research with other fathers and mothers of children with autism and appeared to be an effective and supportive approach (e.g., *Teamwork, Working Together to Deal with the Job at Hand, and We're a Team*; Lashewicz, Cheuk, & Shave, 2016; May, 2014; Mendez et al., 2015; Sim et al., 2019).

Previous research has found that parents of children with autism have to increasingly rely on each other for support (see Birnbaum et al., 2012; Burrell et al., 2017; Hock et al., 2012; McConnell Jr., 2015; Sim et al., 2015; Sim et al., 2018). Eight fathers of children with autism reported that they and their coparent 'became their own support network' (Burrell et al., 2017). Given that fathers of children with autism rely heavily on their partner for support, it was

encouraging that most fathers in the present study reported positive and high quality coparenting support.

However, it is important to note that some fathers who were interviewed reported that their coparents were not supportive or not supportive enough. From this, a theme of *Negative and Lack of Support* was identified. Several fathers also reported negative experiences with their coparent with respect to legal, custodial, and practical concerns (e.g., coparent contesting custody or access; *Legal, Custodial, and Practical Considerations*). Previous research with fathers and mothers of children with autism has found that parents experience both positive and negative support from their parenting partners (DePape & Lindsay, 2014; Marciano et al., 2014; Myers et al., 2009). For instance, Marciano and colleagues (2014) interviewed 10 parents of children with autism and found themes of *Marriage Positively Influenced* and *Marriage Negatively Influenced*. Myers and colleagues (2009) analyzed responses to an open-ended question from 493 parents of children with autism (aged 3-11) and found similar themes of *Marriage Enriched* and *Marital Strain*. The present study of fathers provides additional qualitative support for this duality of both positive and negative coparenting support for parents of children with autism.

Support from Others. The fathers in the present study reported a similar duality with respect to receiving both positive and negative support from people other than their coparents. Some fathers reported receiving helpful support from others, including extended family (e.g., grandparents, in-laws), friends, and professionals (e.g., social workers, speech therapists). However, fathers also shared that others sometimes offered support that was ultimately unhelpful or underwhelming. Fathers mentioned that this ‘support’ was often more of encouragement or simple statements of ‘we’re there for you’, and was provided in an awkward manner. These

experiences of unhelpful support are consistent with previous research findings that parents of children with autism reported experiencing unsupportive social interactions (i.e., negative or unhelpful responses from others), intended as ‘support’ (Ingram et al., 2001; Jones, 2018).

Though fathers in the present study reported experiencing both helpful and unhelpful support from people other than their coparents, some fathers reported experiencing *no* additional support at all. These fathers felt like ‘islands’ with their coparents. Paynter and colleagues (2017) noted that about half of the eight fathers of children with autism interviewed similarly reported that their partner was their sole source of support. For instance, one father said “I’ve got no one in direct support of me, other than my wife (p. 119)”.

Fathers in the present study reported frustration and battles with ‘the system’ in general, including: financial difficulties, community supports, and access to information. Previous studies of fathers of children with autism have similarly found that they have to fight against ‘the system’ to access services and supports for their children with autism. Woodgate and colleagues (2008) identified a theme of *Fighting all the Way*, which highlighted parents fighting against the system to make it work better for their families. Similarly, Potter (2017) interviewed fathers of children with autism and identified a theme of *Support After Diagnosis*, with one father saying “following my son’s diagnosis, I received a leaflet and that is all (p. 101)”.

Frustration with ‘the system’ appears to be an ongoing issue for parents of children with autism. In Ontario, Canada (the home province of the researcher and their university), there have been recent changes to the government-funded services that have impacted parents of children with autism. In April 2019, the government changed the financial support system from a needs-based system to a fixed rate. As a result, families with children with autism will now receive anywhere from \$5,000 to \$20,000 a year, depending on their household income and the age of

the children with autism (Jones, 2019, March 21). However, this money will not be distributed proportionately based on the individual's needs, and therapy in Ontario can cost up to \$80,000 a year (Jones, 2019, March 21). Families of children with autism have protested this recent change and expressed their frustration with the changes in the system (The Canadian Press, 2019, March 7).

Parenting Stress

Fathers' responses to both the open-ended survey questions and the phone interviews, as well the Parenting Stress Scale (PSS), suggested that they experienced a great deal of parenting stress. A theme of *Stress and Fatigue* was identified in the present study and fathers reported that both they and their coparents experienced stress to varying degrees. This was consistent with a wealth of previous research on both mothers and fathers of children with autism (see Baker-Ericzen et al., 2005; Bloom, 2015; Cohrs & Leslie, 2017; Dabrowska & Pisula, 2010; Darling et al., 2012; Fayerberg, 2012; McStay et al., 2014; Merkaj et al., 2013; Miranda et al., 2019; Sabih & Sajid, 2008; Sim et al., 2018).

In the present study, higher coparenting relationship quality was significantly related to lower parenting stress, though once marital satisfaction was controlled for, it was no longer a significant predictor. However, fathers' responses in the phone interviews and open-ended survey questions suggested that coparenting quality and marital satisfaction were related. One father (#18) stated "when I need a stress break, I'm able to get a stress break... she'll give me that break like anytime". From this, fathers' exposure to conflict (a component of coparenting relationship quality) continued to be significantly related to parenting stress, even after controlling for marital satisfaction, with less exposure to conflict related to lower parenting stress. As such, both coparenting relationship quality and marital satisfaction may be important

correlates of parenting stress for parents of children with autism. Though few studies have explicitly measured coparenting relationship quality in parents of children with autism, the findings from the present study are consistent with the previous research. Sim et al. (2017) found that for parents of children with autism, stress in the family increased the likelihood of parents experiencing a negative coparenting relationship. Norlin and Broberg (2013) found significant correlations between coparenting quality and parenting stress for the 46 fathers of children (under the age of 10) with intellectual disabilities in their study. Thullen and Bonsall (2017) surveyed over 100 parents of children with autism (mostly mothers), and found that greater coparenting relationship quality was significantly related to lower parenting stress. Consistent with results from the present study, they found that less exposure to conflict was significantly related to lower parenting stress. May and colleagues (2015) found that greater coparenting relationship quality and lower parenting stress were significantly correlated for the 72 fathers of children with autism in their study (under the age of 13). In addition, May and colleagues found qualitative support specifically for the importance of managing coparenting conflict, with a theme of *Conflict and Antagonism in the Coparenting Partnership* (May, 2014; May, et al., 2017). This theme included responses from fathers who described talking through disagreements with their coparents to better understand each other and reduce the risk of damaging their partnership. Managing interparental conflict among coparents appears to be one way for fathers of children with autism to protect against the parenting stress that they regularly experience.

Managing fathers' parenting stress may also have an impact on their involvement with their children with autism and their satisfaction with involvement. Parenting stress has typically been conceptualized in the autism literature as an outcome of involvement (see Bloom, 2015; Kersh & Siperstein, 2007; Mactavish & Schleien 2004; Weiss & Diamond, 2003). However,

responses from fathers in the thematic analyses suggested that they were better able to engage with their children with autism when they were relaxed, supported, and less stressed. Additional analyses in the present study indicated that for fathers, lower parenting stress was related to more frequent involvement in play activities and child-care with their children with autism. Since parenting stress has often been viewed only as an outcome, this relationship has not yet been researched often. However, Osborne and Reed (2010) surveyed over 130 parents (mostly mothers) of children with autism in the United Kingdom and found that lower parenting stress was significantly correlated with greater involvement, both at baseline and at follow-up 10 months later. Fathers' parenting stress was also related to their satisfaction with involvement in physical play behaviours, play activities, and child-care. In all cases, lower parenting stress was related to greater involvement and satisfaction with involvement.

Results from the thematic analysis and post-hoc analyses suggested that coparenting conflict was related to fathers' parenting stress, which was also related to their involvement in play activities and child-care, as well as their satisfaction with involvement. Additional analyses provided support for this two-step relationship. These results help to understand the pathway between the support that fathers receive from their coparents and their involvement and satisfaction with involvement. Specifically, less conflict with coparents appears to be related to less parenting stress for fathers, which in turn, is related to more frequent involvement in play activities and child-care and greater satisfaction with involvement in play activities.

Revisiting Self-Determination Theory

Self-determination theory (Ryan & Deci, 2000) was used in the present study to hypothesize the relationship between coparenting support and fathers' motivation for involvement. According to self-determination theory, humans have three innate psychological

needs (i.e., for competence, relatedness, and autonomy), that when fulfilled, facilitated the integration of a behaviour into their sense of selves (Ryan & Deci, 2000). In turn, this need-fulfillment resulted in an individual's motivation becoming more self-determined and intrinsically motivating (Ryan & Deci, 2000). According to self-determination theory, the more intrinsically motivated an individual was to perform a behaviour, the more they engaged in it and enjoyed it (Ryan & Deci, 2000). The researcher proposed that a supportive coparenting relationship would fulfil fathers' needs for competence, relatedness, and autonomy, with respect to parenting. As such, the present study hypothesized that greater coparenting relationship quality would be related to fathers' self-determined motivation for involvement with their children, and that self-determined motivation for involvement would mediate the relationship between coparenting relationship quality and fathers' involvement, satisfaction with involvement, and parenting stress.

The results of the present study partially supported self-determination theory. When analyzed separately (see Results section), fathers' intrinsic-only motivation for involvement was significantly related to more frequent involvement in physical play and child care, and to greater satisfaction with involvement in physical play and child care. This was in line with self-determination theory and was consistent with previous research on fathers' involvement and satisfaction with involvement with typically developing children (see Bouchard & Lee, 2000; Bouchard et al., 2008; Ladage, 2015; Ray, 2016).

However, the results of the present study suggested that coparenting relationship quality was not an effective predictor of need-fulfillment for fathers' involvement with their children with autism. Coparenting relationship quality was not significantly related to fathers' self-determined motivation for involvement, both when measured as a total score of motivation and

when intrinsic motivation was measured independently. Thus, coparenting relationships may not fulfill fathers' needs for competence, relatedness, or autonomy. Instead, coparenting relationships may influence fathers' involvement and satisfaction with involvement via their relationship to fathers' parenting stress.

Deci et al. (1994) outlined three important contextual factors that are essential for need-fulfillment and, thus, for motivation to become more self-determined. The contextual factors included: offering a meaningful rationale, acknowledging the individual's perspective, and conveying a choice as opposed to control (Deci et al., 1994). It is likely that coparents who communicate effectively as supportive partners can provide a meaningful rationale of parenting to fathers and can provide an acknowledgement of their perspective as parents. Fathers' interview responses in the present study suggested that they did experience support from their coparents, including themes of *Teamwork and Communication* and *Coparent Takes the Lead and Facilitates*. Quotations from these themes highlighted that fathers felt as though their coparent communicated well with them and took the lead to facilitate fathers' involvement, by understanding and acknowledging their current perspective. Similarly, for fathers of typically developing children, the less they were undermined by their coparents, the more confident they felt in their parenting abilities (Merrifield & Gamble, 2012).

However, in the present study, coparenting relationship quality was still not significantly related to fathers' self-determined motivation for involvement. This may be due to the third contextual factor, conveying a choice as opposed to control. Deci et al. (1994) suggested that providing rationale and acknowledgement is important, but only if they are presented in a way that allows for choice and not in a pressured way. They added that language that included "shoulds" and/or "have to's" conveyed a sense of control over the individual and impaired their

process of self-determination (Deci et al., 1994). Fathers of children with autism often *have* to be involved with their children, given their heightened demands and behavioural challenges.

Moreover, fathers of children with autism may have to sacrifice their own interests to prioritize involvement with their children with autism, as reflected in the theme of *Lifestyle Restrictions* in the present study. Furthermore, some fathers of children with autism were not well supported in their parenting by people other than their coparent, adding additional pressure for fathers to *have* to be involved; as seen in the themes of *Unhelpful* and *Non-Existent* supports from people other than their coparents in the present study.

In contrast to behaviours that an individual can *choose* to engage in or not, such as practicing an instrument or sport, parenting children with autism appears to be a behaviour that fathers *have* to engage in. Fathers' phone interview and open-ended survey responses showed that fathers of children with autism were involved in parenting for a multitude of reasons. Fathers' responses from the survey indicated that they were involved with their children with autism because they enjoyed it (i.e., intrinsic motivation). In addition, a theme of *Generativity* was identified from qualitative responses, highlighting that fathers were also involved with their children with autism because they were concerned about their children's future well-being and wanted the best for them.

Generativity was an additional motivator for involvement in parenting, not originally hypothesized in the present study. Fathers' responses to the interview and open-ended questions included a wide variety of reasons why they were involved with their children, many of which centered on wanting the best for them and their future. For instance, one father stated, "I have a sense of obligation to do right by him and to give him everything that I can to make it possible for him to function in this world". These responses suggested that merely considering intrinsic-

extrinsic motivation, as in self-determination theory, may not be sufficient for capturing why fathers are involved with their children. The behaviour of *parenting*, especially with children with disabilities, appears to be one that fathers engage in not necessarily for themselves (e.g., intrinsic motivation) or for external validation (e.g., extrinsic motivation), but for the sake of their children. This view may be especially relevant for parents of children with disabilities. Mitchell and Lashewicz (2015; 2016; 2018) have proposed the generativity framework to help understand why fathers are involved with their children with autism. Responses from the 28 and 11 fathers of children with autism (aged 3-15) in their qualitative studies suggested that they were involved because they wanted the best for their children in the future and that they needed to adapt or adjust their current involvement to assure this happened (Mitchell & Lashewicz 2015; 2018). Lashewicz and colleagues (2016) interviewed 28 fathers of children with autism and identified that fathers reported a ‘protector persona’ and shared how they were involved to protect their children as best as they could. These findings suggest that understanding the father-child relationship is especially important in framing fathers’ motivation for involvement with their children. That is, they may be involved simply because they want the best for their child and they love them. Especially for fathers, involvement in physical play (e.g., rough-and-tumble play) has been found to be related to father-child attachment relationships (Paquette, 2004).

Involvement of Fathers of Children with Autism

Regardless of their motivations, the results from the present study indicated that many fathers were involved with their children with autism. Fathers played with their children with autism approximately once or twice a week each in physical play behaviours (e.g., bouncing on knee) and play activities (e.g., trampoline). This frequency of once or twice a week is consistent with a previous study that measured physical play behaviours and play activities in 60 fathers of

children with autism (aged four to 11; see Bloom, 2015). Potter (2016) found that the majority of the 306 fathers of children with autism (aged 19 and under) in their study engaged in play slightly more often, either ‘several times a week’ or ‘every day’. Fathers in the present study were involved in all areas of child-care (e.g., dressing, feeding, teaching, therapy) with their children with autism nearly every day. Though few other studies have directly measured this, Potter (2016) found that fathers helped with homework and attended school meetings ‘several’ or ‘many times’ a year.

It is positive that fathers are involved in both play and child-care with their children with autism, as this has been found to have beneficial outcomes for both fathers and their children. Bloom (2015) found that fathers’ involvement in physical play with their children with autism was significantly related to higher father-child relationship quality. Qualitative evidence was also found, highlighting that play builds the father-child relationship and leads to feelings of closeness and affection between fathers and their children. Involvement in play has been found to be related to lower parenting stress in fathers of typically developing children as well (see Coyl-Shepherd & Hanon, 2013; Torres et al., 2014). Moreover, children with autism can have numerous benefits from engaging in play, including: cognitive ability, socio-emotional well-being, communication, and motor skills (see Childress, 2011 for a review). Burrell and Borrego Jr. (2012) reviewed parents’ involvement in treatment with their children with autism and reported consistent benefits for children’s outcomes. One study with only father participant found that being involved in in-home intervention was related to improved communication in children with autism (Seung et al., 2005).

The results from the present study regarding fathers’ involvement with their children with autism also helped to provide current evidence that fathers are involved with their children in

today's world. As fathers are becoming more involved with their children than ever before, it is important for research on father involvement to increase as well (Flippin & Crais, 2011; Lamb, 2010). Braunstein et al. (2013) reviewed over 400 articles on parental inclusion in studies of parents of children with autism and found that 1.5% of these sampled only fathers, compared to 21.3% that sampled only mothers and 65.1% that sampled "parents" without specifying genders. An important finding was that Braunstein et al. (2013) found no difference in the amount of father inclusion between studies from 2001-2005 and studies from 2006-2010. This suggests that fathers' involvement with their children with autism continues to be under-researched. As such, the results from the present study (that included a large sample of fathers) are especially relevant.

It is also important to recognize that the fathers in the present study were quite satisfied with their involvement, both in play and in child-care. Since fathers often *have* to be involved with their children with autism, given their children's unique challenges and fathers' limited supports, it is positive that fathers continue to be satisfied with their involvement.

Gendered Nature of Fatherhood

A strength of the present study was that it recruited and focused on fathers of children with autism. Relative to other studies focused on fathers of children with autism, a fairly large sample of fathers ($N=76$) participated in the present study (see Bonsall, 2018 [5 fathers]; Burrell et al., 2017 [8 fathers]; Cheuk & Lashewicz, 2016 [28 fathers]; Mitchell & Lashewicz, 2015 [28 fathers]; Paynter et al., 2017 [18 fathers]; Potter, 2016 [306 fathers]). Fathers of children with autism have unique experiences and perspectives to offer and they are frequently underrepresented in research (see Braunstein et al., 2013). Some of the results from the present study were uniquely expressed by fathers about fatherhood, including involvement in physical play, work, and views/perceptions of fathers.

Previous research suggests that for the majority of fathers cross-culturally (both for children with and without autism), engaging in physical and rough-and-tumble play accounted for a large percentage of fathers' involvement with their children, and acting as a 'playmate' was often one of the roles that fathers took on (Fletcher et al., 2013; Flippin & Crais, 2011; Newland et al., 2013; Paquette, 2004). Moreover, previous research has found numerous benefits for both fathers and their children (with and without autism) from engaging in physical and rough-and-tumble play together, including: greater relationship quality, attachment, enjoyment, communication, well-being, and motor abilities (Bloom, 2015; Childress, 2011; Fletcher et al., 2013; Frost, Wortham, & Reifel, 2012; Ginsburg, 2007; Mactavish & Schleien, 2004; Paquette, 2004). Engaging in physical play with their children appears to be especially important for fathers.

As expected, fathers in the present study were engaged in physical play behaviours with their children with autism. In reviewing the significant predictors of fathers' involvement, fathers' parenting stress was a significant predictor for their involvement in both play activities and childcare. However, this was not a significant predictor of fathers' involvement in physical play behaviours. Thus, fathers may be involved in other areas (e.g., play activities, childcare) because they were less stressed and better able to; but, regardless, fathers were involved in physical play behaviours. Fathers may have been engaging in physical play behaviours in attempt to 'pull their weight' and demonstrate to their coparents that they were good teammates. Given fathers' tendency to fulfil the role of 'playmate', and their desire to help their children develop for the future (*Generativity*), engaging in physical play behaviours may be their avenue to engage in this 'fatherwork' (Dollahite & Hawkins, 1998). Engaging in physical play

behaviours with their children with autism may reflect the ‘work’ fathers are choosing to put in, to attend to their children’s unique needs.

Another theme that was identified by fathers’ responses in the present study was *Pros and Cons of Work*. Though fathers in the present study varied in whether they worked or stayed-at-home, many fathers mentioned the concept of work in the phone interviews, including both the positives and negatives of having to go to work. Some fathers mentioned that work was an escape or distraction for them and that it allowed them to focus their attention on goals beyond their children with autism. On the other hand, some fathers mentioned that work was a source of stress for them and that it took away from family time. For instance, Father (#2) mentioned that “when we would be out together at a park, I wouldn’t be as involved because I was just thinking about work”. In Paynter et al. (2017), eight fathers of children with autism also reported both positives (e.g., talking to colleagues) and negatives (e.g., inflexibility, stress) of having to work. Recent research supports that a ‘divide and conquer’ strategy with respect to division of labour continues to be helpful for parents of children with autism (Kent, 2011; May, 2014; Saini et al., 2015). Given this, it is important to be mindful of both the positive and negative consequences of having to work for fathers in the present study.

A theme of *Evolving Views of Fathers* was identified in the present study that highlighted the unique way that fathers felt they were perceived as caregivers, by other fathers, mothers and professionals. Some fathers were proud of the increased involvement of fathers with their children with autism and felt this was ‘wonderful’ and ‘important’. On the other hand, several fathers felt they were perceived negatively by others and that their involvement was either not appreciated or not expected. Fathers reported being ‘treated as a lesser, as a secondary, as an afterthought’ by other mothers of children with autism and professionals. Though this theme was

unrelated to the original research questions in the present study and was an unexpected finding, Cheuk and Lashewicz (2016) found similar comments from fathers of children with autism. They interviewed 28 fathers of children with autism and identified a theme of *Needing to be heard*; fathers in this theme reported being glad to ‘finally’ see a study focused explicitly on fathers’ perspectives as they felt they were often overlooked.

Implications

The results of the present study have important implications for fathers and families of children with autism. For fathers, these implications include strengthening the coparenting relationship, supporting fathers’ involvement with their children with autism, and including fathers in parenting research.

Fathers in the present study reported generally high coparenting relationship quality. Their coparenting relationship quality was found to be related to their parenting stress. Recent research on parents of typically developing children has found that fathers’ coparenting relationship quality can have an impact on their partners’ level of parenting stress as well (Durtschi, Soloski, & Kimmes, 2017). Thus, it is important to continue building and strengthening parents’ coparenting relationships, especially for parents of children with autism, as they continue to face high daily stressors. To support this, professionals are encouraged to incorporate components of the coparenting relationship into parent education and parent-training for new, and veteran, parents of children with autism. For instance, educating parents about the importance of good communication, support, and division of labor between coparents may help them better parent their children with autism, above and beyond providing them with behavioural and diagnostic information. Organizations that work with parents of children with autism may seek to provide explicit intervention on improving coparenting relationships. For instance,

Feinberg, who developed the Coparenting Relationship Scale, also developed an 8-week skills-based group (Family Foundations) for parents that has been found to improve the coparenting relationship, with outcomes lasting up to 3.5 years later (Feinberg, Jones, Kan, & Goslin, 2010; Feinberg & Kan, 2008). In addition, Bluth and colleagues (2013) suggested that parents of children with autism may experience benefits to their couple relationships with a mindfulness approach.

Fathers in the present study were engaged with their children with autism in both play and child-care activities, and this engagement can have positive outcomes for both fathers and their children. Given that fathers in the present study discussed themes of generativity and wanting to help their children develop and progress, fathers' involvement with their children should be encouraged and supported. Moreover, professionals working with families of children with autism should continue encouraging fathers' involvement. Fathers in the present study reported feeling as though they were treated 'as a lesser' and many fathers reported having difficulties navigating 'the system'. As such, professionals currently working with families of children with autism are encouraged to make modifications to their existing services to support fathers. Wenzler (2010) surveyed and led focus groups for fathers of children with autism regarding factors that affected their participation in parent training. Fathers mentioned factors including: a flexible schedule (e.g., location, time, and shorter duration), the format of training (e.g., more hands-on, a focus on having fun), and a direct request for fathers to participate (Wenzler, 2010). Winter (2006) compared two parent-training programs for parents of children with autism and found that fathers in the father-focused program (that included a flexible schedule and a rough-and-tumble play component) had higher attendance and participation than fathers in the standard parent-training program. These studies provided suggestions to

professionals for increasing father involvement in parent training. In the present study, fathers also indicated what their children's favourite activity/game was. This list helped shine a light on the unique interests of children with autism. It may be helpful to disseminate this information, to both fathers and professionals, to provide new opportunities and options for fathers to be engaged with their children.

The researcher was successful in recruiting a fairly large sample of fathers of children with autism to participate in the present study. However, fathers of children with autism continue to be underrepresented in research, especially with fathers-only samples (see Braunstein et al., 2013). Given the importance of including fathers of children with autism in research, the success of the recruitment strategies from the present study can have important implications for future research. For instance, the researcher used targeted recruitment flyers asking for 'fathers' as opposed to 'parents', contacted father-focused organizations, used snowball sampling with the help of father participants, and provided fathers with an opportunity to share their perspectives. In addition, the researcher himself was a male; it may be that seeing a male name on the flyer made it more appealing to prospective father participants. Furthermore, a father of a child with autism served as the Parent Advisor in the present study as an involved stakeholder. He provided guidance in wording the ethics application and recruitment materials. It is likely that more stakeholder involvement (e.g., collaborating with a Parent Advisor) in research studies will continue to help increase fathers' willingness, and ability to, participate in research.

Strengths

The present study involved a mixed-methods approach with a relatively large sample of fathers of children with autism. The present study was one of the first (known) studies that measured the coparenting relationships of fathers of children with autism. It also included a

qualitative portion that allowed fathers to share their voices and provide valuable results beyond the scope of the original research questions. The majority of fathers in the present study volunteered to participate in the phone interviews (after completing the online survey) and many fathers thanked the researcher for this opportunity after the interview was completed.

The researcher took a novel approach to providing incentives to participants in the present study. Instead of providing participants with a financial incentive that supported large organizations (e.g., Tim Hortons, Amazon), they were offered a gift card that could be donated to hundreds of thousands of charities across Canada. Fathers indicated after the interviews that they enjoyed this incentive and were glad to be able to support their own local organizations. An incidental benefit of this approach was that it protected against the threat of fraudsters completing the online survey (Teitcher et al., 2015). Previous research on parents of children with autism (and others) has been impacted by fraudulent respondents (Bloom, 2015; Jones, 2018).

A Parent Advisor was involved in all aspects of the research project, including survey design, recruitment, data analysis, and interpretation. The Parent Advisor played an important role throughout the study, particularly in receiving ethics approval and in interpreting fathers' qualitative responses. More broadly, having stakeholders involved in the research process is vital, as this allows for a shared understanding between researchers and the public, and more translating decision-making and implementation (see Boaz et al., 2018 and Deverka et al., 2012 for reviews of stakeholders in research).

Limitations

The present study had several limitations that were important to highlight. One notable limitation was that it was cross-sectional in design and so the analyses were correlational and not

longitudinal. As such, the conclusions that could be drawn were limited to the relationships between variables and the directionality of these relationships could not be determined. For instance, the directionality of parenting stress (i.e., as a predictor, outcome, or both) was not able to be clearly delineated in the present study.

The elite nature of fathers who participated in the present study resulted in a somewhat restricted sample. West and colleagues (2016) highlighted the importance of recruiting, and reporting on, ethnically diverse participants for autism research, as this can impact the external validity of the results. The fathers in the present study were primarily biological fathers, Caucasian, well-educated (i.e., college or higher), and of at least moderate socioeconomic status. The distribution of self-reported ethnicities of fathers in the present study was not reflective of the distribution of ethnicities across Canada as a whole, as a greater percentage of fathers self-identified as ‘Caucasian’ (Statistics Canada, 2019). The present study required at least 20 minutes of uninterrupted time on a computer to complete the survey online, with the potential for an additional 25 minutes (on average) to complete the phone/Skype interview. As a result, this may have also limited the potential sample of fathers available to participate to those with interest, time and access.

The wording of questions in the present study led to some limitations in the conclusions that could be made. For instance, fathers were asked how many hours a week they and their coparents worked. No information was gathered on whether fathers, or their coparents, worked outside of the home or considered themselves ‘stay at home’ parents. In addition, fathers were asked to report the frequency of involvement in play and childcare. However, no information was gathered on the duration of this involvement. Though two fathers may have similarly

reported that they were involved in play 3-4 times a week, the duration of this involvement may have varied greatly.

Suggestions for Future Research

The present study found significant relationships between coparenting relationships, parenting stress, and involvement of fathers of children with autism, but was cross-sectional in design. An important suggestion for future research would be to conduct longitudinal studies to assess for change over time. This approach would allow for an analysis of changes in coparenting relationship quality and/or parenting stress. Future studies on the coparenting relationships of parents of children with autism may also benefit from recruiting both coparents, as this would allow for an analysis of both fathers' and mothers' perspectives. Future researchers are encouraged to make it clear in the recruitment materials and/or letter of information the importance of having both fathers and mothers' perspectives. Framing the study as a couples-sample as opposed to a father-focused sample may be helpful for recruiting both coparents. However, this suggestion should be balanced, as this may result in fathers feeling less autonomous and valued in research.

The use of donation gift cards are also encouraged for future researchers as an option for incentives. Particularly for parents of children with autism, the donation gift card was incentivizing as it allowed parents to both receive a financial compensation and support an important charity of their choice. Many fathers were happy to receive this incentive at the end of the phone interview and already had a charity/organization in mind to donate to.

Conclusions

Fathers continue to be involved with their children with autism for various reasons. Fathers are involved and satisfied with their involvement when they are intrinsically motivated.

They are also engaged (e.g., in play activities and child-care) and satisfied with their involvement when they are less stressed. Fathers took great pride in sharing their experiences in the present study, including both the positive and negative outcomes of being involved with their children. Fathers reported experiencing both positive and negative support from their coparents and from others. They are encouraged to continue strengthening their coparenting relationships as this may be related to their level of parenting stress, which is a constant challenge for parents of children with autism and is related to their involvement and satisfaction with involvement. Fathers in the present study noted that they felt treated as a lesser and appreciated having a research study that focused primarily on fathers' experiences. Researchers and professionals are encouraged to continue highlighting fathers' unique experiences and perspectives, as fathers continue to be engaged with their children with autism.

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Appendix A

Categorized Physical Play Activities Generated by Fathers of Children with Autism in Bloom (2015)

Art Games (e.g., Play-Doh, Stickers)

Board games (e.g., Snakes and Ladders, Marbles)

Cooking / Baking

Computer / iPad Games (e.g., Minecraft)

Hide-and-Seek

Playing with Blocks / Lego

Playing Musical Instruments (e.g., Drums, Keyboard, or Piano)

Playing with Toy cars (e.g., Hot Wheels or Thomas the Train)

Playing on a Trampoline

Reading Books

Sports (e.g., Baseball or Soccer)

Swimming

Video Games (e.g., Xbox, Wii)

Word or Letter Games (e.g., Playing with Magnetic Letters)

Watching TV or Movies

Appendix B

List of Acronyms used in the Present Study

List of acronyms	List of explanations
CAST	Childhood Autism Spectrum Test
SCQ	Social communication questionnaire
SES	Socio-economic status
CRS	Coparenting Relationship Scale
PPQ	Physical play questionnaire
PPQ-A	Physical play questionnaire - activities
FIS	Father Involvement Scale
FSIS	Fathers' satisfaction with involvement scale
MFIS	Motivation for fathers' involvement scale
PSS	Parental Stress Scale
PSI	Parenting Stress Index

Appendix C

List of Permissions for Measures used in the Present Study

Measure	Citation and Date of Permission
Childhood Autism Spectrum Test	Scott, F. J., Baron-Cohen, S., Bolton, P., & Brayne, C. (2002). Permission obtained: Public Domain
Coparenting Relationship Scale	Feinberg, M. E., Brown, L. D., & Kan, M. L. (2012). Permission obtained: Public Domain
Physical Play Questionnaire	Mellen, H. S. (2002). Permission to use and adapt obtained by email: June 2014
Physical Play Questionnaire – Activities	Created by the researcher for the present study
Father Involvement Scale	Bragiel, J., & Kaniok, P. E. (2011). Permission to use and adapt obtained by email: March 2017
Fathers' Satisfaction with Involvement Scale	Created by the researcher for the present study
Motivation for Father Involvement	Bouchard, G. (2000). Permission to use and adapt obtained by email: November 2016
Parental Stress Scale	Berry, J. O., & Jones, W. H. (1995). Permission obtained: Public Domain

Appendix D

Demographic Questionnaire

1. How old are you (in years): ____
2. What is your relationship to your child (biological, step-parent, grand-parent): ____
3. What is your relationship to your coparent (i.e., primary adult with whom you share responsibility for parenting your child with autism): Spouse, Ex-Spouse, Partner, Sibling, Parent, Other (specify)
4. How old is your coparent: ____
5. Do you live in the same house as your coparent: Yes, No
6. How many children do you have: ____
7. What is the sex of your child with autism (i.e., eldest between 4-11): Male, Female
8. How old was your child at the age of their diagnosis of autism (in years): ____
9. Do you live in the same home as your child: Yes, No
10. Do you have another child(ren) with autism: Yes, No
11. What is your marital status: Married, Separated, Divorced, Single, Other (specify)
12. What is your current level of marital satisfaction: Very good, Good, Neutral, Poor, Very poor
13. What is your current country of residence: ____
14. What is your current yearly income (in USD\$): ____
15. What is your identified ethnicity: ____
16. How many hours, on average, do you work a day?
17. How many hours, on average, does your co-parent work a day?
18. What is your highest level of completed education: High School, College, University, Graduate School

19. Do you have any physical, or psychological, limitations that you think would limit your ability for involvement with your child: Yes, No

Designed by the Researcher, Jason Bloom, for the present study

Appendix E

Fathers' Satisfaction with Involvement Scale (Bloom, 2017)

This measure was created by Bloom (2017). This measure consists of one item that was added to existing measures of involvement that were used in the present study. This item asked “how satisfied are you with this level of involvement”. Fathers’ were asked to report their satisfaction on a 5-point Likert scale, ranging from 1 (*Very Unsatisfied*) to 5 (*Very Satisfied*).

For additional information regarding the use, and format, of this measure, please contact the researcher, Jason Bloom: bloomj@uwindsor.ca

Appendix F

Consent to Participate and Letter of Information

[for Fathers]



LETTER OF INFORMATION AND CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: The influence of coparenting support on fathers' involvement with their children with Autism

You are asked to participate in a research study conducted by Jason Bloom, M.A. and Dr. Marcia Gragg, Ph.D. from the Department of Psychology at the University of Windsor. Results will form the basis of a doctoral dissertation.

If you have any questions or concerns about this research please feel free to contact Dr. Gragg at mgragg@uwindsor.ca (519 253 3000, X2227) or Jason Bloom at bloomj@uwindsor.ca.

PURPOSE OF THE STUDY

To understand more about how

- fathers are involved with their children with Autism
- fathers are supported by their coparenting partners
- coparenting support is related to fathers' involvement

ELIGIBILITY

To participate in this study, you must be a father (biological, adoptive, foster, custodial grandparent or step-parent) of a child with autism aged 4 to 11 years. In order to confirm that your child meets criteria for autism, you will complete a survey about your child's behaviour. Participants must meet the screening criteria to participate in this study.

PROCEDURES

If you volunteer to participate in this study, you will be asked to:

- 1) Complete an online survey with questionnaires about your coparent, your involvement with your child, and yourself (20-35 minutes)
- 2) If you would like, participate in an optional phone or Skype interview. This will take approximately 20-30 minutes, at a later date/time that would be mutually agreed upon. The interview will be digitally audio recorded and then transcribed by trained Research Assistants
- 3) 20-30 participants will be selected by the primary researcher from those who have indicated interest in participating in the phone or Skype interview. Due to the limited number of participants needed for the interview, not all participants that indicate interest may be selected.

POTENTIAL RISKS AND DISCOMFORTS

Some people might feel uncomfortable answering questions about their coparent and their involvement with a researcher. The present study uses a standardized tool for determining eligibility and the primary researcher is limited in their ability to adapt/modify the language used within this form. We do not expect any other risks from participating in this study. If you participate and feel uncomfortable, please contact Dr. Marcia Gragg (Clinical Director of the Summit Centre for Preschool Children with Autism and Psychologist). If you know the primary

researcher, Jason Bloom, or his supervisor, Dr. Marcia Gragg, please be reminded that your participation is voluntary and it will not affect your services at The Summit Centre in any way.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

You will not likely directly benefit from participating in this study. However, your participation could help provide helpful parenting information to other parents of children with autism. Some fathers are happy that they are being given a voice in research and that their experiences can be used to help other fathers. Fathers' involvement and coparenting support has not been studied in autism very much yet, so it is important to learn more about how these are related.

COMPENSATION FOR PARTICIPATION

As a thank you, fathers who complete at least 80% of the questions on the survey will be offered a \$5 donation e-gift card to CanadaHelps.org. It will be e-mailed to you within one week of completing the survey. This e-gift card can only be redeemed as a donation to the charities/organizations listed on CanadaHelps.org. Participants who do not meaningfully complete at least 80% of the survey, or complete it in an extremely short amount of time (i.e., less than 5 minutes) will not receive the e-gift card. Please note that the listed charities/organizations are only within Canada, but may be redeemed by participants from other countries.

Participants who complete the optional phone or Skype interview will be offered an additional \$5 donation e-gift card to CanadaHelps.org. Not all participants who are interested will be selected for the interview.

CONFIDENTIALITY

We will keep your responses for this study confidential. Your completed questionnaires will be temporarily associated with your identifying information in order for you to receive the \$5 e-gift card for your participation and to allow us to select and contact interested participants who are selected for a telephone or Skype interview. The data will only be available to the Researcher and trained Research Assistants who have signed Confidentiality Agreements. After all of the data for this study has been collected, your identifying information will be permanently deleted. The researcher, Jason Bloom, will store the data obtained from this study in a secure location for seven years. The data will then only be available to the Researcher and the Research Supervisor, Dr. Gragg.

When the research assistants transcribe the interviews, they will remove any identifying information and replace it with generic words (e.g. child, city, school). Illustrative quotes from the interviews may be used in publications or presentations.

PARTICIPATION AND WITHDRAWAL

If you volunteer to be in this study, you may withdraw at any time before submitting your online survey. Once you have started the survey, if you no longer wish to participate, you may simply exit the browser. However, once you submit your survey, you will no longer be able to withdraw your information. Note that you will not be given the \$5 gift card unless you complete at least 80% of the questions on the survey.

If you are contacted for the phone or Skype interview and no longer wish to do so, you may simply tell the researcher, and your contact information will be deleted after the completion of this study. At any point during the phone or Skype interview and once all responses have been given, you may still request to withdraw your participation. After the interview is completed, you will be asked once more if you are willing to allow your responses to be used as part of this research study or if you would like to withdraw your participation. After this point, you will no longer be able to withdraw your participation. You will not receive the \$5 gift card if you choose to withdraw from the phone or Skype interview. The researcher may remove you from the study if needed.

The investigator may also withdraw you from this research if circumstances arise which warrant doing so.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS

After the study is done, a summary of the results will be posted on the website: <http://www.uwindsor.ca/autism>.

You may also contact the primary researcher, Jason Bloom, or the research supervisor, Dr. Marcia Gragg, using the contact information provided on this letter.

Web address: www.uwindsor.ca/autism Date when results will be available: February 28,
2019

SUBSEQUENT USE OF DATA

These data may be used in subsequent studies, in publications and in presentations.

Do you agree to be contacted by members of the Autism Research Group at the University of Windsor to ask if you would be interested in participating in future studies?

Yes No

[If yes: Enter email here: _____]

RIGHTS OF RESEARCH PARTICIPANTS

You may withdraw your consent at any time. You may stop participating without penalty. This research received ethics clearance through the University of Windsor Research Ethics Board. If you have questions regarding your rights as a research participant, contact:

Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

RESEARCH PARTICIPANT CONSENT

I understand the information provided for the study **The Influence of Coparenting Support on Fathers' involvement with their Children with Autism** as described. My questions have been answered to my satisfaction, and I agree to participate in this study. Please print this page for your records if you would like a copy.

Consent to Participate and Letter of Information

[for Coparents]



LETTER OF INFORMATION AND CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: The influence of coparenting support on fathers' involvement with their children with Autism

You are asked to participate in a research study conducted by Jason Bloom, M.A. and Dr. Marcia Gragg, Ph.D. from the Department of Psychology at the University of Windsor. Results will form the basis of a doctoral dissertation.

If you have any questions or concerns about this research please feel free to contact Dr. Gragg at mgragg@uwindsor.ca (519 253 3000, X2227) or Jason Bloom at bloomj@uwindsor.ca.

PURPOSE OF THE STUDY

To understand more about how

- parents are involved with their children with Autism
- parents are supported by their coparenting partners
- coparenting support is related to parents' involvement

ELIGIBILITY

To participate in this study, you must be a parent (biological, adoptive, foster, custodial grandparent or step-parent) of a child with autism aged 4 to 11 years. In order to confirm that your child meets criteria for autism, you will complete a survey about your child's behaviour. Participants must meet the screening criteria to participate in this study.

PROCEDURES

If you volunteer to participate in this study, you will be asked to:

- 1) Complete an online survey with questionnaires about your coparent, your involvement with your child, and yourself (20-35 minutes)

POTENTIAL RISKS AND DISCOMFORTS

Some people might feel uncomfortable answering questions about their coparent and their involvement with a researcher. The present study uses a standardized tool for determining eligibility and the primary researcher is limited in their ability to adapt/modify the language used within this form. We do not expect any other risks from participating in this study. If you participate and feel uncomfortable, please contact Dr. Marcia Gragg (Clinical Director of the Summit Centre for Preschool Children with Autism and Psychologist). If you know the primary researcher, Jason Bloom, or his supervisor, Dr. Marcia Gragg, please be reminded that your participation is voluntary and it will not affect your services at The Summit Centre in any way.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

You will not likely directly benefit from participating in this study. However, your participation could help provide helpful parenting information to other parents of children with autism. Some parents are happy that they are being given a voice in research and that their experiences can be used to help other parents. Parents'

involvement and coparenting support has not been studied in autism very much yet, so it is important to learn more about how these are related.

COMPENSATION FOR PARTICIPATION

As a thank you, parents who complete at least 80% of the questions on the survey will be offered a \$5 donation e-gift card to CanadaHelps.org. It will be e-mailed to you within one week of completing the survey. This e-gift card can only be redeemed as a donation to the charities/organizations listed on CanadaHelps.org. Participants who do not meaningfully complete at least 80% of the survey, or complete it in an extremely short amount of time (i.e., less than 5 minutes) will not receive the e-gift card. Please note that the listed charities/organizations are only within Canada, but may be redeemed by participants from other countries.

CONFIDENTIALITY

We will keep your responses for this study confidential. Your completed questionnaires will be temporarily associated with your identifying information in order for you to receive the \$5 e-gift card for your participation. The data will only be available to the Researcher and trained Research Assistants who have signed Confidentiality Agreements. After all of the data for this study has been collected, your identifying information will be permanently deleted. The researcher, Jason Bloom, will store the data obtained from this study in a secure location for seven years. The data will then only be available to the Researcher and the Research Supervisor, Dr. Gragg.

PARTICIPATION AND WITHDRAWAL

If you volunteer to be in this study, you may withdraw at any time before submitting your online survey. Once you have started the survey, if you no longer wish to participate, you may simply exit the browser. However, once you submit your survey, you will no longer be able to withdraw your information. Note that you will not be given the \$5 gift card unless you complete at least 80% of the questions on the survey.

The investigator may also withdraw you from this research if circumstances arise which warrant doing so.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS

After the study is done, a summary of the results will be posted on the website: <http://www.uwindsor.ca/autism>.

You may also contact the primary researcher, Jason Bloom, or the research supervisor, Dr. Marcia Gragg, using the contact information provided on this letter.

Web address: www.uwindsor.ca/autism

Date when results will be available: February 28, 2019

SUBSEQUENT USE OF DATA

These data may be used in subsequent studies, in publications and in presentations.

Do you agree to be contacted by members of the Autism Research Group at the University of Windsor to ask if you would be interested in participating in future studies?

Yes No

[If yes: Enter email here: _____]

RIGHTS OF RESEARCH PARTICIPANTS

You may withdraw your consent at any time. You may stop participating without penalty. This research received ethics clearance through the University of Windsor Research Ethics Board. If you have questions regarding your rights as a research participant, contact:

Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

RESEARCH PARTICIPANT CONSENT

I understand the information provided for the study **The Influence of Coparenting Support on Fathers' involvement with their Children with Autism** as described. My questions have been answered to my satisfaction, and I agree to participate in this study. Please print this page for your records if you would like a copy.

Phone/Skype Interview



CONSENT FOR ELECTRONIC RECORDING OF PHONE/SKYPE INTERVIEW

Title of the Project: The Influence of coparenting support on fathers' involvement with their children with Autism.

I give my permission to have my phone/Skype interview with the primary Researcher electronically recorded.

I know my involvement in this phone/Skype interview is voluntary. I may withdraw at any time by asking to stop the recording. Any identifying information provided in this phone/Skype interview will not be shared with anyone. These recordings will remain confidential and filed by number only. The transcripts will be stored in a locked cabinet.

For the Phone or Skype interview, they will be electronically recorded. The Researcher and/or Research Assistants will then listen to the electronic recordings and type out the interview. Once the recordings have been transcribed and checked for accuracy they will be deleted.

There is some minimal psychological/emotional risk of involvement in this interview. I know confidentiality will be respected. The recordings will be for professional use only.

Do you _____ agree to allow your phone/Skype interview with Jason Bloom to be electronically recorded on this date _____?

Vita Auctoris

Name: Jason Bloom

Place of Birth Toronto, Ontario

Year of Birth: 1991

Education Langstaff Secondary School, Richmond Hill
2005-2009

University of Western Ontario,
London, Ontario
2009-2013 Honours B.A.

University of Windsor

Windsor, Ontario
2013-2015 M.A