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# Fathers' Physical Play with their Children with Autism: Benefits for Fathers

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Fathers' Physical Play with their Children with Autism: Benefits for Fathers

Jason L. Bloom

A Thesis  
Submitted to the Faculty of Graduate Studies  
through the Department of Psychology  
in Partial Fulfillment of the Requirements for  
the Degree of Master of Arts at the  
University of Windsor

Windsor, Ontario, Canada

2015

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Fathers' Physical Play with their Children with Autism: Benefits for Fathers

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September 17<sup>th</sup>, 2015

### **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 fathers' physical play with their children with Autism (ASD), and the benefits of this play for fathers. Benefits included improvements in parenting stress, impact on parenting, and life satisfaction, which are challenges that fathers of children with ASD experience. Fathers of sons with ASD aged 4-11 ( $N = 60$ ) completed an online survey, and 20 completed an additional phone interview. Multiple regression analyses revealed that more frequent physical play behaviours (i.e., tickling, piggyback riding) were associated with lower parenting stress scores for fathers. Analyses also revealed that higher satisfaction with play and relationship-quality were associated with lower parenting stress, lower impact on parenting, and higher life satisfaction for fathers. Results suggested that fathers' benefit from more frequent physical play behaviours, and that the quality of this play is important to fathers' benefits. The present study has implications for father-child play and father involvement in treatment programs.

## **Dedication**

This research is dedicated to all of the fathers who are raising a child with ASD. I thank you all for letting me hear your voice and I am always inspired and humbled by your stories. I hope that I have done you all justice.

## Acknowledgements

First, I would like to thank all of the fathers of children with ASD 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

Recent attention on parenting has brought to light a new wave of fathers, ones who are more involved with their children than ever before, acting as co-parents (Lamb, 2010; Pleck & Pleck, 1997). Reasons for this increase in father involvement may be twofold. First, the displacement of mothers outside of the home for work requires fathers to become more involved (Lamb, 2010). Second, these fathers seem to be more motivated and committed to being a father, actively choosing to become more involved with parenting their children (Marks & Palkovitz, 2004). As fathers are becoming more involved with their children, it is important for research on father involvement to increase as well (Flippin & Crais, 2011). However, fathers should be studied independently from mothers, as they behave differently with their children than mothers do. In particular, fathers engage in play behaviours with their children more so than do mothers (Coyle-Shepherd & Hanlon, 2013; Dumont & Paquette, 2013; Fletcher et al., 2013; Newland et al., 2013; Paquette, 2004; Phares, Fields, & Kamboukos, 2009).

Recent work focusing on father-child play has demonstrated that playing with their children is related to improvements in fathers' well-being (Coyle-Shepherd & Hanlon, 2013; Fletcher et al., 2013; Jenkins, 2009). Moreover, play has been associated with numerous benefits for children, with and without disabilities (see Brown, 2009; Childress, 2011; Coyle-Shepherd & Hanlon, 2012; Frost, Wortham, & Reifel, 2012). However, research on the benefits of play for fathers of children with developmental disabilities has received much less attention. Whether these fathers would show improvements in their well-being from playing with their children has been little studied (see Kersh & Siperstein, 2007; Weiss & Diamond, 2003).

The present study will explore the benefits on fathers' well-being, by way of engaging in play with their children with disabilities; specifically their children with Autism Spectrum Disorders (Autism). For the purpose of the present study, benefits on well-being are characterized as improvements in father-reported stress, impact on parenting, and life satisfaction. Fathers of children with Autism tend to report greater stress, greater parenting hassle, and lower life satisfaction than fathers of typically developing children (Benjak, Vuletic, & Kolaric, 2011; Darling, Senatore, & Strachan, 2012; Hayes & Watson, 2013). Thus, improvements on these variables have particular importance for fathers of children with Autism. For the present study, father-child play consisted of physical play behaviours, physical play activities, and fathers' stimulation of risk taking. It is expected that physical play behaviours (e.g., hugging, tickling, wrestling, piggybacking) and physical play activities (e.g., drawing, playing basketball, going for a walk) will cover a wide array of father-child play, and that fathers' stimulation of risk taking will provide information on fathers' control and openness to the world. The purpose of the present study is to identify the types of father-child play that is present with children with Autism, and identify whether these help to improve fathers' well-being. Should this be the case, father-child play could be incorporated into family interventions for children with Autism, as is already evident for children with attention-deficit hyperactivity disorder (Fabiano et al., 2009; Flippin & Crais, 2011).

### **Father Involvement**

Concurrent with the rise in father involvement is the rise in the prevalence of children with Autism, with approximately one in every 68 children receiving a diagnosis of Autism (CDC, 2014). Thus, it is likely that more fathers are becoming more involved

with their children with Autism now, then before (Lamb, 2010). However, father involvement has been difficult to operationalize, as it has typically been defined in terms of the quantity of caregiving behaviours that fathers provide and has typically been measured in comparison to that of mothers (Darling, Senatore, & Strachan, 2012; John, Halliburton, & Humphrey, 2013; Kerry, 2000; Saracho & Spodek, 2008).

Previous studies have demonstrated the need for a clearer distinction between the quantity and quality of father involvement, and that increased quantity does not necessarily relate to increased quality (Kerry, 2000; Parke, 2000; Shelton, 1990). Lamb (2004) conceptualizes father involvement as positive engagement activities, warmth, and control. Positive engagement activities include direct physical interaction with the child in positive activities. Warmth focuses on the responsiveness to the child and control focuses on knowing the child's whereabouts. Positive engagement activities are described as a more quantitative component of father involvement (i.e., frequency of engagement activities) whereas the other two represent more qualitative components (i.e., intensity of warmth or control).

Recent attention has been placed on the unique, and complementary, parenting roles for mothers and fathers (Paquette, 2004). Specifically, fathers' involvement tends to involve play interactions, particularly physical play, with their children. There is a growing literature connecting father-child attachment with father-child play (Coyle-Shepherd & Hanlon, 2013; Kerry, 2000; Paquette, 2004, Paquette & Dumont, 2013a). With fathers involved in play with their children more than mothers (see Coyle-Shepherd & Hanlon, 2013; Dumont & Paquette, 2013; Fletcher et al., 2013; Newland et al., 2013; Paquette, 2004; Phares, Fields, & Kamboukos, 2009), a unique paternal pathway to

increased quality of father involvement is available. For the present study, physical play behaviours, and activities, will represent positive engagement activities, allowing for a quantitative measure of father involvement.

### **Theoretical Background**

In 2004, Paquette put forth a new theory of attachment for fathers that spoke to this unique pathway, by which fathers develop greater attachment with their children through physical play interactions. Paquette's Activation Relationship Theory stated that fathers' physical play with their children satisfies their children's need for activation and stimulation. Fathers who permit their children to actively take risks and open their experience to the world, are promoting their children's inherent need for stimulation and typify high quality activation relationships.

The Activation Relationship Theory functions in conjunction with Bowlby's (1969) Theory of Attachment Relationships. That is, mothers develop attachments to their children by satisfying their need to be calmed, while fathers develop attachments to their children by satisfying their need for stimulation. Fathers stimulate their children's exploration of the physical and social world, while simultaneously ensuring their children are protected. This theory taps into all three notions of Lamb's (2004) definition of father involvement. By engaging in stimulating play and allowing their children to take risks, fathers demonstrate positive engagement activities while also being responsive (i.e., demonstrating warmth) and controlling. The activation relationship is influenced both by child characteristics, and through parental behaviours and interactions. Recent evidence has validated the Activation Relationship Theory, providing support for the notion that

this is a more valid representation of fathers' attachment than previous attachment theories (Dumont & Paquette, 2013; Paquette & Dumont, 2013b).

The Activation Relationship Theory puts forth that fathers activate children more than mothers, and that boys are more optimally activated than girls. As the activation relationship is seen as complimentary to the attachment relationship, fathers are expected to be the primary activation partners, more so than mothers, and mothers are typically the primary attachment partners, more so than fathers. Previous research shows that sons are activated more than daughters, as fathers and sons typically demonstrate more physical and rough-and-tumble play together (Paquette, 2004; Paquette & Bigras, 2010). In studies where boys' and girls' attachment and activation relationships were assessed, there were no significant differences between children's genders and their attachment relationships, whereas the activation relationships differed significantly by children's gender. The study found that of the children that were optimally activated (i.e., 43.8%), the majority (71%) were boys, and of those that were under activated (i.e., less optimally activated; 31.3%), the majority were girls (70%; Paquette & Bigras, 2010).

Paquette et al., (2009) developed a father-reported paper-and-pencil measure in an attempt to identify the relationship between paternal behaviours and the activation relationship. The Openness to the World Questionnaire measures fathers' Level of Punishment, Stimulation of Perseverance, and Stimulation of Risk Taking. The researchers designed these subscales to capture characteristics of the activation relationship. The activation relationship had previously been measured observationally with a method entitled the Risky Situation (Paquette & Bigras, 2010). The Risky Situation uses a 5-point scale; where higher scores represent more optimal activation and lower



scores represent less optimal activation (i.e., under activation or over activation). When comparing the self-report Openness to the World Questionnaire to the observational Risk Situation, only the Stimulation of Risk Taking subscale was found to significantly correlate with optimal activation, and only with sons. These studies have found that fathers' stimulation of risk taking significantly predicts optimally activated relationships in boys, accounting for 26-38% of the variance (Paquette & Bigras, 2010; Paquette & Dumont, 2013b).

These findings suggest that quality physical play and activation relationships may be important in understanding father involvement. Moreover, it is possible to re-imagine father-child attachment as father-child activation, especially for fathers and sons. The research suggests that the Stimulation of Risk Taking subscale of the Openness to the World Questionnaire could act as a proxy measure of optimal activation relationships between fathers and sons, and that optimal activation relationships are related to father involvement.

### **Play Literature**

Defining the concept of play has long been surrounded with uncertainty, as the meaning seems quite apparent though it is difficult to precisely define (see Fein, 1981). Play behaviours are often quite diverse and context-dependent, varying with age and environment. Early definitions of play detailed the characteristics of play, which include being pleasurable and enjoyable, having no imposed goal from an outside source, being spontaneous and/or voluntary, and involving active engagement from the players (Garvey, 1977). Roeyers and Van Berckelaer-Onnes (1994) added that play typically involves attending to the action and not the end product of play, and that play is flexible.

Play can have various types, including exploratory, relational, functional, symbolic, and physical. Typically developing children tend to exhibit all types of play, with these developing in conjunction with their cognitive and social development (Jordan, 2003). On the other hand, children with Autism tend to spend more time in exploratory play, and less time in functional or symbolic play (Flippin & Watson, 2011). Moreover, children with Autism engage in physical play with their parents (Jordan, 2003).

The concept of physical play is privy to the same difficulty of definition as the overarching concept of play. Definitions of physical play tend to have the same characteristics of play previously mentioned, combined with the presence of at least moderate physical activity resulting in a metabolic rate above the resting rate (Pellegrini & Smith, 1998; Simons-Morton et al., 1990). Physical play has various forms, including rhythmic stereotypies, exercise play, and rough-and-tumble play.

Rhythmic stereotypies are included as a form of physical play, as they are the gross motor movements typically evidenced by infants and toddlers (Pellegrini & Smith, 1998). These behaviours are not often exhibited by preschool children with typically developing, and are exhibited significantly less than preschool children with Autism (Macdonald et al., 2007). Rhythmic stereotypies are a defining trait of children with Autism (American Psychiatric Association, 2013). As a result, this is not an appropriate conceptualization of physical activity for the present study, as these would influence the results. Exercise play and rough-and-tumble play are often discussed together, and describe play that is physically vigorous that can be solitary or with others. These behaviours tend to be exhibited by preschool children above the age of 4. Exercise play is often described in terms of activities (e.g., running, jumping), whereas rough-and-tumble

play includes playful, yet vigorous, behaviours (e.g., wrestling, kicking; Pellegrini & Smith).

### **Fathers' Physical Play with Typically Developing Children**

Much of the existing literature on fathers' physical play has focused on typically developing children. Findings have overwhelmingly demonstrated that fathers are more involved in physical play than are mothers. Fathers are viewed as one of their children's primary play partners and their role as a parent is often regarded as one of a playmate (Flippin & Crais, 2011; John, Halliburton, & Humphrey, 2013; Kerry, 2000; Newland et al., 2013). Recent work has found that physical play accounts for a larger percentage of fathers' interaction with their children than mothers (Fletcher et al., 2013). These findings are consistent cross-culturally, with fathers more involved in physical play, outdoor games, and sports than mothers in Canada, the U.S.A and in Taiwan (Clark, 2008; Newland et al., 2013). Last, Coyl-Shepherd and Hanlon (2013) found that fathers not only engage in more physical play than mothers, but they use toys as a pretext for physical contact and their play often involves more instances of rough-and-tumble play.

### **Benefits of Physical Play with Typically Developing Children**

For fathers with typically developing children, engaging in physical play has been associated with greater father-child relationship quality and attachment (Brown et al., 2001; Fletcher et al., 2013; Grossman et al., 2002; Jenkins, 2009; Paquette, 2004). After engaging in play with their typically developing children, fathers have reported increased enjoyment, happiness, attentiveness, greater sense of self-worth and communication, less stress and increased motivation for involvement (Coyle-Shepherd & Hanlon, 2013; Ginsburg, 2007; Jenkins, 2009; Torres et al., 2014). For typically developing children, the

benefits of physical play are plentiful, and include cognitive gains, increased socio-emotional well-being, communication, and motor abilities (Brown, 2009; Frost, Wortham, & Reifel, 2012; Ginsburg, 2007).

The physical nature, and benefits, of play have not been studied in great depth with children with disabilities. The present study will extend this literature to fathers of children with Autism, a disability that poses unique challenges for father-child play.

### **Evidence of Play in Children with Autism**

Autism is a pervasive neurodevelopmental disorder, with impaired social communication, social interaction, and repetitive stereotypic behaviours that fall on a spectrum (American Psychiatric Association, 2013). Recent prevalence rates from the Center for Disease Control and Prevention estimated that one in 68 children received a diagnosis of Autism, with up to 5 times as many boys as girls (CDC, 2014). The prevalence of Autism continues to increase, with this current rate up 29% from 2012, 64%% from 2010, and 123% from 2006.

The impairments in social communication and interaction make friendships with same-aged peers difficult for many children and adolescents with Autism. Children and adolescents with Autism develop fewer friendships with peers (Koning & Magill-Evans, 2001, Osmond et al., 2004) and many of these involve less social interaction, play, or physical activity (Bauminger & Kasari, 2000, Childress, 2011; Obruskinova & Cavalier, 2010). Solish et al. (2010) found that children with Autism participated in fewer recreational activities with peers than typically developing children and children with intellectual disabilities. On the other hand, these children with Autism participated in more recreational activities with their parents than either the typically developing or

intellectual disabilities samples. Orsmond et al., (2004) also found comparable rates for children with Autism and children with other developmental disabilities or typically developing in their participation in social and recreational activities with parents. Thus, though the impairments in social communication and interaction displayed by children with Autism may lead to less play with same-aged peers, there may be more play interactions with their parents. Parent interviews have supported this finding, with parents indicating that their children had fewer opportunities for recreational activities with others outside of the family, and so activities facilitated by parents both inside and outside the home were a way to counter-act this (Mactavish & Schleien, 2004).

Wolfberg (1999) spoke to this issue, stating that adults (i.e., parents) have the responsibility to facilitate play development with children with Autism. Children with Autism need parents who are highly responsive and sensitive, can activate and sustain play with their children, and are flexible in their interactions to appropriately alter their behaviour to respond to their children's unique characteristics (Kopp, 1982).

### **Fathers' Physical Play with Children with Autism**

The literature on fathers' physical play with their children with Autism is quite sparse. This is likely due, in large part, to the various difficulties for play interaction experienced by children with Autism. Children with Autism characteristically show deficits in social communication and interaction, both of which are important ingredients in play. Moreover, children with Autism tend to initiate play less often, take turns during play less often, and engage in play that is more repetitive, object-focused, less motivated and more passive (Childress, 2011; Freeman & Kasari, 2013; Pisula, 2008). That children with Autism show more passive play can influence their play partners as well. 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).

However, there is some evidence that, similar to with children with typically developing, fathers of children with Autism do interact in physical play (Jordan, 2003). Pisula (2008) found that fathers of children with Autism engaged in more physical contact (i.e., hugging, touching, tickling) during play than fathers of children with Down's syndrome or typically developing. In interviews with eight fathers of children with Autism, all fathers reported that they played physically with their children (i.e., throwing in the air, wrestling), in an effort to get them to smile and laugh (Vacca, 2013). Keller et al. (2014) also interviewed seven fathers of children with Autism and identified a theme of Shared Activities, which included physical touch (e.g., snuggling or wrestling). Moreover, children with Autism made more verbal play initiations to their fathers than to their mothers, indicating that fathers may still act as these children's primary play partners (El-Ghoroury & Romanczyk, 1999).

### **Benefits of Physical Play with Children with Autism**

Although the research suggests that, to some extent, fathers do play with their children with Autism, the effects of play for these fathers have not received much attention. The majority of research has focused on the benefits of play for children. Specifically, for children with Autism, similar gains to typically developing children have been found with play (e.g., free play, toy play, symbolic play, recreational activities, physical play), with improvements in cognitive ability, socio-emotional well-being,

communication, and motor skills (see Childress, 2011 for a review; Mactavish & Schleien, 2004).

In 2004, Mactavish and Schleien surveyed parents of children with developmental disabilities, including Autism. The researchers found parental benefits for recreation activities with their children, including improved communication with their children, quality of life, satisfaction with life, and ability to deal with stress. In addition, studies of children competing in the Special Olympics have found benefits for fathers. Fathers' attendance at their children's Special Olympics event was related to fathers' decreased stress, increased parent-child relationships, pride, expectations for their children, and fathers' general well-being (Kersh & Siperstein, 2007; Weiss & Diamond, 2003).

### **Potential Areas as Benefits**

Understanding the potential benefits of physical play for fathers of children with Autism is especially important, as fathers characteristically experience challenges from their children's diagnosis. Specifically, fathers of children with Autism tend to experience greater daily stress, greater impact on parenting, and lower satisfaction with life (Benjak, Vuletic, & Kolaric, 2011; Darling, Senatore, & Strachan, 2012; Hayes & Watson, 2013). Thus, potential benefits of physical play for fathers of children with Autism may be relieving parenting stresses, reducing the impacts on parenting, and improving life satisfaction.

### *Parenting Stress Challenges*

Parenting stress is an important challenge that fathers of children with Autism typically face. Fathers of children with Autism have reported more daily stress than fathers of children with typically developing or Down's syndrome (Baker-Ericzen,

Brookman-Fraze, & 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 of stress on parents of children with Autism, typically developing and varying diagnoses, including Down's syndrome, intellectual disabilities, cerebral palsy, cystic fibrosis, and fragile X syndrome, found a large effect size, with parents of children with Autism reporting greater parenting stress than all other parent groups (Hayes & Watson, 2013). In addition, there is some evidence that fathers' parenting stress varies according to their children's age (Firth & Dryer, 2013; Sabih & Sajid, 2008). Between fathers and mothers of children with Autism, there are mixed findings on their reported parenting stress. There is some evidence 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), though most of the previous literature have found that mothers of children with Autism experience greater stress than fathers (Baker-Ericzen, Brookman-Fraze, & Stahmer, 2005; Dabrowska & Pisula, 2010; Merkaj, Kika, & Simaku, 2013). Regardless of the mixed findings on stress levels between fathers and mothers of children with Autism, it is evident that both demonstrated elevated levels of parenting stress, especially when compared to parents of children with typically developing and other diagnoses.

#### *Impact on Parenting Challenges*

Impact on parenting is a broad term used to describe the impact that parents may experience in raising children with Autism. Ly and Goldberg (2012) created the Fathers of Children with Developmental Challenges questionnaire, to assess this impact on parenting, specifically for fathers of children with developmental challenges. This



measure assesses the impact on fathers' dreams, expectations, relationships, and abilities. Baker, Blacher and Olsson (2005) found that fathers of children with developmental delays had higher scores of negative impact on the family (e.g., impact on feelings about parenting) than fathers of typically developing children. In addition, there is some evidence that fathers of children with Autism report greater parenting hassle than fathers of typically developing children (i.e., minor daily stresses in routine interactions; Darling, Senatore, & Strachan, 2012), greater disruption of family plans than fathers of typically developing children (i.e., having to change plans at the last minute; Rodrigue, Morgan, & Geffken, 1992), greater caring burden than fathers of typically developing children (Lee et al., 2008) and lower family involvement in political, cultural, social, and intellectual activities than fathers of children with Down's syndrome or typically developing (Sanders & Morgan, 1997). Meltzer (2008) found that fathers of children with Autism reported shorter overall sleep time and earlier wake time than fathers of typically developing children. Moreover, when parents of children with Autism were asked if the diagnosis had impacted their family, 90% of parents said yes. These parents made comments such as "we have not taken a vacation as a family since the diagnosis", or that, "it's hard to get a minute alone – to just get a break from everything" (Hutton & Caron, 2005, p. 186). Though the concept of impact on parenting may be broad, there is evidence that fathers of children with Autism experience some negative impact on their life in various ways.

This includes fathers' romantic and social relationships, where there is evidence that fathers of children with Autism report lower marital satisfaction than fathers of children with TD (Brobst, Clopton, & Hendrick, 2009; Parker, Mandelco, Roper, Freeborn, & Dyches, 2011). A review of the impact of Autism on parents found that

having children with Autism has negative effects on parents' marital relationships, including lower reported marital satisfaction and higher rates of divorce (see Karst & Van Hecke, 2012). Moreover, parents of children with Autism reported having less time not only for their spouses, but for their friends as well (Altiere & Von Kluge, 2009). This evidence demonstrates the impact that having children with Autism could have on fathers' romantic and social relationships.

### *Life Satisfaction Challenges*

Pavot and Diener (2008) defined life satisfaction as a stable, underlying cognitive judgment of individuals' satisfaction with their life as a whole. Though life satisfaction is defined as a stable trait, the authors maintain that significant life changes can influence this. For instance, there is some evidence that as symptom severity increased for children with internalizing or externalizing disorder, caregiver life satisfaction decreased (Athay, 2012). Moreover, fathers' subjective rating of parenting burden from their children was related to lower life satisfaction (Milgram & Atzil, 1988; Wang et al., 2004). Thus, fathers of children with Autism, who experience greater impact on parenting due to their children's symptomatology, may be especially vulnerable to experience lower life satisfaction. In the literature, life satisfaction is often described as satisfaction with life and/or satisfaction with quality of life. Though both terms are used in the literature, the present study will use the term life satisfaction to represent this domain.

Recent work has found that fathers of children with Autism report lower life satisfaction than fathers of children with typically developing (Benjak, Vuletic, & Kolaric, 2011; Darling, Senatore, & Strachan, 2012, Fayerberg, 2012; Lu et al., 2015; Mugno et al., 2007). Benjak, Vuletic and Kolaric (2011) found that fathers of children

with Autism reported significantly lower satisfaction with their quality of life than fathers of children with typically developing. Darling, Senatore and Strachan (2012) found similar results between fathers of children with Autism and with typically developing, where the presence of children with Autism was related to lower life satisfaction for fathers. Additional evidence of lower life satisfaction and lower satisfaction with quality of life among parents of children with Autism has been found with mothers as well (see Benjak, Vuletic, & Kolaric, 2011; Eapen, Crncec, Walter, & Ping Tay, 2014; Ekas, Lickenbrock, & Whitman, 2010).

### *Relationship Quality*

For the present study, relationship quality will not be measured, as the scope of this study looks at fathers' well-being (i.e., an individual variable) and relationship quality is a dyadic concept (i.e., a relational variable). Moreover, past research on this construct has typically focused primarily on the attachment relationships between mothers and their children with Autism, which has been characterized by aspects like positive affect and warmth (Orsmond et al., 2006; Paquette, 2004). The Positive Affect Index (Bengston & Schrader, 1982) is the established parent-report measure of parent-child relationship quality, especially in studies with children with Autism (see Greenberg et al., 2004; Orsmond et al., 2006; Smith et al., 2008; Taylor & Seltzer, 2011). This index has been used predominantly for mother-child dyads and only measures concepts like understanding, trust, and affection (Bengston & Schrader, 1982).

The present study looked at the activation relationship between fathers and their sons, which is characterized by aspects like control and openness to the world. Thus, published measures of relationship quality that are based on an attachment relationship

are not appropriate for the present study. Given that there are yet no published measures of activation relationship quality (other than the Openness to the World Questionnaire), relationship quality will not be measured with a questionnaire. However, fathers' will be asked to rate and describe their relationship quality, and to describe how play is related to this.

### **Present Study**

The present study examined fathers' physical play with their children with Autism, and identified potential benefits for fathers. Specifically, the present study will measure the frequency and types of physical play behaviours that fathers engage in with their children with Autism, and identify whether these are related to fathers' parenting stress, impact on parenting, and life satisfaction.

### *Definition of Terms*

For the present study, the term fathers represented the self-identified male father figure for the child with Autism. These father figures may include, but are not limited to; biological fathers, step fathers, foster fathers, grandfathers, or mother's boyfriend. Thus, all individuals who identify themselves as a father figure of a child with Autism were eligible to participate as a father for the present study.

Father-child physical play was measured with three separate variables: physical play behaviours, physical play activities, and fathers' stimulation of risk taking. Physical play behaviours focus on hands-on interactions between fathers and their children, including behaviours like wrestling and tickling. These relate to the rough-and-tumble component of physical play as described in Pellegrini and Smith (1998). Physical play activities consist of activities that fathers engage in with their children, including

activities like going for a walk and playing catch. These relate to the exercise play component of physical play as described in Pellegrini and Smith (1998.) Both physical play behaviours and activities represent positive engagement activities that are characteristic of father involvement (see Lamb, 2004). Fathers' stimulation of risk taking focuses on the control aspect of father involvement (see Lamb, 2004) and includes questions on fathers allowing their children to be out of their sight. This variable represents fathers' development of children's openness to the world. It is expected that openness to the world, and control, are both important aspects to facilitate physical play with children (Paquette, 2004; Paquette & Bigras, 2010).

Only fathers of sons with Autism will be recruited for the present study. This is because boys represent the vast majority of children with Autism, with a gender ratio of approximately 5:1 (CDC, 2014). Moreover, the Activation Relationship Theory predicts that fathers will activate children more than mothers will, and that boys will be activated more than daughters will. In addition, fathers' Stimulation of Risk Taking (i.e., a measure of physical play in the present study) has been found to significantly predict optimal activation only for father-son relationships, and not father-daughter relationships. Thus, in order to draw on the theoretical background of the Activation Relationship Theory, and in order to use fathers' stimulation of risk taking as a predictor for benefits on well-being, only fathers of boys with Autism will be recruited in the present study.

Given that the aim of the present study is to investigate fathers' of children with Autism, a participatory action research framework will be employed. Participatory action research is a model typically used in conducting research wherein individuals representing the population of interest (e.g., fathers of children with Autism) act as

collaborators in the entire research process (Whitely, Greenwood & Lazes, 1989). The participatory action research framework works to ensure that the goals, methods, and conclusions of the present study will be relevant and helpful to fathers of children with Autism. For the present study, one father of a boy with Autism will act as a Parent Advisor, and will actively collaborate with the researcher throughout the research process. The Parent Advisor for the present study works on the Toronto district school board and acts as the program director of an inclusive day camp in Toronto, Camp Robin Hood.

### **Hypotheses**

The hypotheses of the present study will be based on the Activation Relationship Theory, and the findings from previous studies on the effects of physical play between fathers and their children. It is expected that the hypotheses will address the research question of the present study, which asks: do fathers benefit from engaging in physical play with their children with Autism, and if so, what are the types of play that lead to this, and what are the specific benefits.

**Hypothesis I: *Well-being benefits for fathers of children with Autism.*** It is predicted that fathers of children with higher levels of the predictor variables, physical play behaviours, physical play activities, and stimulation of risk taking, will show better well-being.

***1a: Parenting stress.*** It is hypothesized that higher levels of the predictor variables will be related to lower parenting stress.

***1b: Impact on parenting.*** It is hypothesized that higher levels of the predictor variables will be related to less impact on parenting.

***1c: Life satisfaction.*** It is hypothesized that higher levels of the predictor variables will be related to higher life satisfaction.

**Exploratory.** Qualitative responses to other father-child play related questions were also explored. For instance, fathers were asked whether they engaged in any other activities or behaviours with their children that were not asked in the present study. Moreover, fathers were asked about who initiated play more within the father-child dyad (i.e., fathers or children) and outside the father-child dyad (i.e., fathers or mothers). Last, fathers were asked about their level of satisfaction with play, and their level of relationship quality between them and their son with autism.

In addition, fathers were invited to participate in a phone interview with the researcher, where further qualitative responses were explored. Fathers were asked: what advice they would give to other fathers of children with Autism; how their play is similar, or different, than with their other child(ren); what strategies they use to facilitate play; what their hopes are for play in the future; to describe how they feel after play; and how play affects their father-child relationship.

## Method

### Participants

Participants (N = 60) were self-identified father figures (i.e., biological, step, foster, etc.) of boys with Autism Spectrum Disorders (ASD) between the ages of 4 and 11. Screening questions checked that the father's child with ASD was a boy, and that their age was between 4 and 11 years old. Moreover, the screening questions asked fathers' to indicate that their son had a valid diagnosis of ASD, and fathers also completed a screening tool for identifying children with ASD, the Childhood Autism Spectrum Test (CAST) to validate this diagnosis (see Measures section; Scott, Baron-Cohen, Bolton, & Brayne, 2002).

For the present study, power analyses were computed using G\*Power 3 (Faul et al., 2007). For fathers of children with ASD, published correlations between involvements in physical activity (i.e., attending sports games, coaching sports events) and their reported stress and impact on parenting, suggest an effect size between 0.17-0.22 (Kersh & Siperstein, 2007; Weiss & Diamond, 2003). However, these are not directly related to the present study's hypotheses, and so power analyses were computed with more conservative effect sizes (e.g., 0.15-0.2). The power analyses suggested that between 59 and 77 participants should be recruited (for effect sizes of 0.2 and 0.15 respectively). Thus, the present study recruited 60 fathers of children with ASD, in order to have sufficient power when running analyses. Of these, 43 (72%) indicated an interest in participating in the additional phone interview. For the phone interview, 20 participants were chosen to participate.



Descriptive statistics for the sample of fathers were computed (see Table 1 and 2). Of note, the average age for fathers in this study was 39.88 years, and the average age of their children with Autism was 6.9 years. Moreover, the majority of fathers' were Caucasian, married, from Canada, biological fathers of their child, lived in the same home as their child and did not have any self-identified physical limitations to play.

Table 1

*Descriptive Statistics for the Continuous Demographic Variables*

Variable	Mean	Standard Deviation	Minimum	Maximum
Child Age (in years)	6.9	2.31	4	11
Parent Age	39.88	5.48	26	54
Number of Children	1.89	0.70	1	3
Marital Satisfaction*	3.95	1.07	1	5
Income (in CDN\$)	39,755.33	56,631.35	0	250,000
Age of Child at Diagnosis	2.98	1.63	1	8

\*Note. Rated on a scale from 1 (*Very Poor*) to 5 (*Very Good*)

Table 2

*Descriptive Statistics for the Categorical Demographic Variables*

Variable	Percentage*
<b>Ethnicity</b>	
White/Caucasian	68.33
Hispanic	5
Italian	5
African-American	5
Filipino	3.33
Asian	1.67
Jewish	1.67
Other	3.33
<b>Marital Status</b>	
Married	83.33
Divorced	5
Separated	5
Other	5
<b>Country of Origin</b>	
Canada	58.33
USA	38.33
Other	1.67
<b>Relationship to the Child</b>	
Biological	88.33
Adoptive	3.33
Step	3.33
Foster	1.67
Other	1.67
<b>Residence</b>	
In the same home as the child	88.33
Outside the home of the child	10
<b>Parent Limitation</b>	
Yes	6.67
No	93.33

\*Note. Some percentages total to less than 100%, due to some missing observations

Local organizations in the Toronto and Windsor, Ontario communities were contacted for recruitment (e.g., sending my flyer to their mailing list, posting my flyer on their website). These organizations included, but were not limited to; the Summit Centre for Preschool Children with Autism, Autism Ontario (Windsor-Essex Chapter), the Windsor Special Stars Soccer League, Camp Robin Hood, Puzzle Pieces Ltd., and The Village. Moreover, flyers were posted on online forums (e.g., Facebook, blogs, websites etc.) frequented by parents of children with ASD. To aid in recruitment, participants were recruited using a snowball sampling method, where individuals in the autism community (e.g., Parent Advisor), associates of the principal researcher in Toronto and Windsor (e.g., former employers at preschools and camps for children with ASD), and previously recruited participants were contacted and asked to forward the survey onto prospective participants, who would then continue to forward it on to other prospective participants (Goodman, 1961). This sampling technique is used primarily for populations who are hidden, or difficult to access, and has been used to recruit parents of children ASD (Mandell & Salzer, 2007; Shtayermman, 2007).

### **Materials**

For the present study, the entire survey consisted of 160 questions. The survey began with the three screening questions (i.e., child's sex, age, valid diagnosis) and the CAST. Then, participants who met the screening criteria answered questions on the predictor variables (i.e., physical play behaviours, physical play activities, stimulation of risk taking), and the outcome variables (i.e., parenting stress, impact on parenting, life satisfaction). The presentation of these measures (i.e., predictor variables, outcome variables) was randomized, so that all participants responded to the measures in a

different order. This helped to balance any practice or priming effects that the specific items may have had on participants' responses. Then, participants completed the demographic questions. Participants also completed the qualitative questions and were asked if they would agree to participate in the additional phone interview.

### *Screening Questionnaire*

The Childhood Autism Spectrum Test (CAST) is a publicly accessible 37-item screening tool sensitive to ASD, and is used primarily for school-aged children (4-11, see Appendix A for a list of permissions to use all measures). It is composed of the 31-item screening scale, and a 7-item control scale, that is not scored for screening (e.g., used as a control to measure general development). For the present study, only the 31-item screening scale will be used. With a cutoff score of 15, the CAST has 100% sensitivity (i.e., those that are above the cutoff score do in fact have a diagnosis of ASD) and 97% specificity (i.e., those that are below the cutoff score do not in fact have a diagnosis of ASD), and test-retest reliability that is comparable to other ASD screening tests (Scott, Baron-Cohen, Bolton, & Brayne, 2002; Williams et al., 2005; Williams et al., 2006). Although the typical screening tool for ASD is the Social Communication Questionnaire (SCQ; Rutter, Bailey, & Lord, 2003), the CAST has been found to screen for ASD just as effectively, and sometimes better, than the SCQ (Scott, Baron-Cohen, Bolton, & Brayne, 2002). Moreover, the CAST offers several practical benefits over the SCQ including cost, (i.e., the CAST is free), ease of use online (i.e., the CAST is in the public domain), and fewer questions (i.e., the CAST has 6 less items). As fathers were responding online to the measures, there was a necessity to use the CAST to validate the diagnosis of ASD. In order for the results of the study to be generalizable to fathers of children with ASD, it

must be verified that all participants did in fact have a child with a valid diagnosis of ASD. It was not practical to ask fathers to send the researcher a copy of their children's diagnostic report. Thus, asking them to respond to the CAST was suitable for confirming the diagnosis. Given that the CAST has 100% sensitivity, this was an appropriate screening tool to validate the diagnosis of ASD.

#### *Demographic Questionnaire*

All participants completed an 11-item demographic questionnaire (Appendix B). For instance, fathers were asked to report their age and the age of their children, the number of children in the family (with and without ASD), their marital status, social-economic status (SES), whether they reside in the house with the child with ASD, and whether they had any physical limitations for physical play.

#### *Physical Play Questionnaire.*

The Physical Play Questionnaire (PPQ) was used to identify the physical behaviours that fathers engaged in with their children with ASD during play (Mellen, 2002). The author had provided permission for use, and adaptation, of the PPQ in the present study. The PPQ is a 35-item questionnaire that asked fathers to report on the frequency of engagement in several physical behaviours. For instance, item 9 asked, "how often have you given your child a piggyback ride in the past 2 weeks?" The PPQ consisted of four subscales, Rough-and-Tumble Play, Playground Play, Rides, and Intimate Play. Though the original version asked participants to count the frequency of engagement activities, the present study adapted this and asked fathers to report their weekly engagement in physical play behaviours on a 5-point Likert scale, ranging from 1 (*Less than 1x a week*) to 5 (*Every Day*), with higher scores indicating greater engagement.

Given that this measure was created for an unpublished dissertation, the only psychometric data available for this measure are the validity statistics used to create the measure. Mellen (2002) used a factor analysis to turn a larger set of items into the four discrete factors mentioned above. The factor analysis showed good validity, as items independently loaded onto unique factors and these were the same for both a sample of fathers and mothers. Coefficient Alphas were computed for the four factors and range from 0.70 – 0.80, demonstrating good reliability (Mellen, 2002). The Cronbach's Alpha for the total score on the PPQ was 0.94 in the present study. No other published measures were identified that covered a wide enough range of physical behaviours expected of children with ASD (i.e., included RTP), thus the PPQ was chosen for the present study.

*Family Play and Leisure Activities Questionnaire.*

The Family Play and Leisure Activities Questionnaire (FPLAQ) was used to identify the types of activities and games that fathers engaged in with their children with ASD (originally adapted from Cabrera et al., 2004; Newland et al., 2013). The authors provided permission for use, and adaptation, of the FPLAQ in the present study. The FPLAQ is a 21-item questionnaire that asked fathers to report on the frequency of engagement in several physical activities. The FPLAQ consisted of two subscales, Outdoor Games and Sports, and Leisure Activities. For instance, item 13 asked, “how often do you practice a sport with your child”, and item 9 asked, “how often do you do art activities with your child”, respectively. This questionnaire asked fathers to report on a 5-point Likert scale, ranging from 1 (*Rarely*) to 5 (*4x or more a week*), with higher scores indicating greater engagement.

Five additional items were created for the present study, to widen the scope of possible outdoor games and sports that fathers may engage in with their children. These items were created after discussions with the research supervisor, and the Parent Advisor. These items were created with the rationale of being included with the FPLAQ. For instance, new item 1 asks, "how often do you go swimming with your child?" The total score for the five new items was more strongly correlated with the total score for the FPLAQ, than with the PPQ,  $r(60) = .528, p < .000$ , and  $r(59) = .416, p = .001$ , respectively. Moreover, the five individual items each had higher correlations with the FPLAQ subscale than with the PPQ. Thus, in line with the researcher's rationale, it was concluded that these five items fit best with the FPLAQ. These items were added to the original FPLAQ, and a new subscale total was computed. The new subscale total for the FPLAQ will be used in all analyses. Thus, in total there were 26 items for this scale. The FPLAQ (without the additional items) had good internal consistency, with alphas on the subscales ranging from 0.73-0.85 (Cabrera et al., 2004; Coyl-Shepherd & Hanlon, 2013; Newland et al., 2013). The Cronbach's Alpha for the total score on the FPLAQ was 0.87 in the present study.

#### *Openness to the World Questionnaire*

The Openness to the World Questionnaire (OWQ) was used to identify fathers' stimulation of risk taking in their children with ASD. The authors provided permission for use of the OWQ. The OWQ is a 27-item questionnaire that asked fathers to report on paternal behaviours based on the Activation Relationship Theory. The OWQ consisted of three subscales, Stimulation of Risk Taking, Stimulation of Perseverance, and Punishment. However, only the Stimulation of Risk-Taking subscale had been shown to



significantly predict optimal activation relationships between fathers and sons, as measured observationally by the Risky Situation (Paquette & Bigras, 2010; Paquette & Dumont, 2013b). Thus, for the present study only the 8-item Stimulation of Risk-Taking subscale of the OWQ was used (Paquette et al., 2009). This questionnaire asked fathers to report on a 6-point Likert scale, ranging from 1 (*Never*) to 6 (*Very Often*), with higher scores indicating greater stimulation of risk taking. For instance, item 1 asked, "I don't let my child do things that risk causing him a boo-boo". The Stimulation of Risk Taking subscale had a Cronbach's Alpha that ranges from 0.6-0.65, but had only been validated for children aged 2-5 as of yet (Paquette & Bigras, 2010; Paquette & Dumont, 2013b). The Cronbach's Alpha for the total score on the OWQ was 0.81 in the present study. However, in a personal communication, the author found no reason this could not be used for the present study, for children aged 4 to 11 years (D. Paquette, personal communication, June 23<sup>rd</sup>, 2014).

#### *Parenting Stress.*

The Parental Stress Scale (PSS) was used to identify the level of stress of fathers of children with ASD (Berry & Jones, 1995). The authors provided permission for use of the PSS in the present study. The PSS is an 18-item questionnaire that asked parents to rate the level to which they agreed or disagreed with statements on the level of stress they feel. This measure consisted of four factors, which are Parental Rewards, Parental Stressors, Lack of Control, and Parental Satisfaction (Berry & Jones, 1995). The PSS is reported on a 5-point Likert scale, ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*), with higher scores indicating more stress. For instance, item 4 asked, "I sometimes worry whether I am doing enough for my child". The total score for the PSS

had a Cronbach's's Alpha of 0.83, and a test-retest reliability of 0.81 (Berry & Jones, 1995; Lessenberry & Rehfeldt, 2004). The Cronbach's Alpha for the total score on the PSS was 0.88 in the present study. The PSS was chosen instead of the Parenting Stress Index-Short Form, Fourth Edition (PSI-SF IV; Abidin 1995) as it was a shorter measure, and was free to the general public. The PSS is similar to the PSI, in that it looked at the stress generated by the parenting role, and not stress generated by other roles/situations (Lessenberry & Rehfeldt, 2004). The PSS correlated significantly with the PSI ( $r = 0.75$ ,  $p < .01$ ; Berry & Jones, 1995). The PSS had also been used in several studies of parents of children with ASD (Firth & Dryer, 2013; Sabih & Sajid, 2008).

#### *Impact on Parenting.*

The Fathers of Children with Developmental Challenges Questionnaire (FCDC) was used to measure the impact on parenting for fathers of children with ASD (Ly & Goldberg, 2012). The authors provided permission for use of the FCDC in the present study. The FCDC is a 20-item questionnaire created specifically for fathers of children with disabilities, including ASD. This measure consisted of two subscales, the 12-item Impact on Parenting, and the 8-item Involvement in Child Intervention. For the present study, only the 12-item subscale on Impact on Parenting was used. The Impact on Parenting subscale measured the impact on fathers' relationships, abilities, and aspirations. For instance, item 5 asked, "having a child with disabilities is more difficult than I expected." The FCDC asked fathers to respond to items on a 5-point Likert scale, ranging from 1 (*Strongly Agree*) to 5 (*Strongly Disagree*), with higher scores indicating less impact on parenting. The Impact on Parenting subscale had high reliability, with an

alpha of 0.85 (Ly & Goldberg, 2012). The Cronbach's Alpha for the total score on the FCDC was 0.80 in the present study.

#### *Life Satisfaction.*

The *Satisfaction with Life Scale* (SWLS) was used to identify life satisfaction for fathers of children with ASD (Diener, Emmons, Larsen, & Griffin, 1985). The authors provided permission for use of the SWLS in the present study. The SWLS is a 5-item questionnaire that asked respondents to respond to statements on life satisfaction. For instance, item 3 asked, "I am satisfied with my life." The SWLS was scored on a 7-point Likert scale, ranging from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*), with higher scores indicating greater satisfaction with life. This questionnaire had been used with parents of children with ASD, and had a high Cronbach's Alpha that ranged from 0.79-0.91 (Darling, Senatore & Strachan, 2012; Pavot & Diener, 1993). The Cronbach's Alpha for the total score on the SWLS was 0.81 in the present study.

#### *Exploratory questions.*

All participants completed additional qualitative questions at the end of the online survey (see Appendix C). Specifically, all fathers were asked to list any additional activities that they engaged in with their children that were not asked in the present study. In addition, fathers were asked about their initiations for play. For instance, did they initiate play with their children more, or less, than their children initiated play. Moreover, did they initiate play with their children more, or less, than their children's mother initiated play. Last, fathers were asked to rate their current satisfaction with their play with their children with ASD and their level of relationship quality.

*Interview Questions*

At the end of the online survey, fathers were invited to volunteer for an optional phone interview, where more detailed open-ended qualitative questions were addressed (see Appendix D). These questions asked fathers what advice they would give to other fathers of children with ASD, how their play is similar or different amongst their children, and about the specific play strategies they currently use with their children with ASD. Moreover, they were asked to describe any hopes they have for future play, to describe how they feel after playing with their children, and to describe how play affects their father-child relationship.

**Procedures**

The principal researcher received approval from the University of Windsor's Research Ethics Board. All participants completed the questionnaires online and were then asked if they would agree to an optional phone interview with more detailed questions. Participants who agreed were asked to provide their email address and phone number. Once the participants had agreed to participate in the phone interview, the principal researcher emailed them to set up a time for this to take place. The principal researcher called the first 20 participants who provided consent and replied to the email with a date and time that worked for them, for the 20-30 minute phone interview. Upon completion, all participants were offered an incentive for completing the survey online (i.e., a 5\$ gift certificate to Amazon.com), and fathers who agreed to participate in the phone interview were offered an additional 5\$ gift certificate.

## Results

### Quantitative Analyses

#### *Data Analysis*

*Missing Data.* Before beginning statistical analyses, the data for the present study were checked for missing data. Specifically, the data on the predictor (i.e., PPQ, FPLAQ, and OWQ) and outcome (PSS, FCDC, SWLS) variables were checked for missing data. Overall, there were 87 observations identified that contained missing values. These observations accounted for only 1.4% of the data (87/6300). Given that these observations represented less than 5% of the total sample, they were not a concern to influence data analyses. Moreover, Little's MCAR test for missing data at random was conducted, and the data were found to be missing at random,  $X^2(2033) = 9.09, ns$ . When looking at participants' patterns of missing data, there were 15 participants who had at least 1 observation missing. All 15 participants had unique patterns of missing data, adding support that the data were missing at random. However, it was identified that a single participant had 24 missing data points on the PPQ (which contained 36 items). Thus, this participant was missing 66.67% of the data for this measure. Given that this was an unusually large amount, and that there were a sufficient amount of remaining participants to satisfy the original power analysis, this participant was removed from all analyses that included the PPQ.

In order to address the missing data, expectation maximization was used as an imputation technique. Expectation maximization is an effective imputation technique, especially with small amounts of missing data (Pigott, 2001). Given that the present study identified only 1.4% of observations as missing, this was an appropriate imputation

technique. Moreover, expectation maximization allows for data to be imputed within their individual subscales. Thus, the data, and their associated subscale's data, remained homogenous.

*Testing Assumptions.* After all the missing data were imputed, outliers on both the predictor and outcome variables were assessed. Outliers on the predictor variables were assessed using Mahalanobis distance scores. No individual observation had a Mahalanobis distance score above the specified cutoff (i.e., 16.27), and thus, it was determined that there were no outliers on the predictor variables. Outliers on the outcome variables were assessed using the standardized residual scores. No individual observation had a standardized residual score outside of the acceptable range (i.e., below -3 or above 3). Thus, it was determined that there were no outliers on the outcome variables. To confirm that there were no outliers present in the study that could influence the data, influential observations (i.e., outliers on both the predictor and outcome variable) were assessed using Cook's distance scores. No individual observation had a Cook's distance score above the suggested cutoff (i.e., 1), and thus, it was determined that there were no influential observations in the present study. Given that there were no outliers or influential observations identified, no additional data points were removed from the data set.

The data were then checked to assure that all statistical assumptions of multiple regression analyses were met. The predictor variables were assessed for the presence of multicollinearity. Multicollinearity is present when predictor variables are highly intercorrelated with each other and these intercorrelations influence the regression analyses. An analysis of the intercorrelations among predictor variables indicated that no

correlations were greater than the cutoff of 0.8. There were intercorrelations that ranged from .21 to .56, but this is to be expected, as the predictor variables are all intended to measure aspects of physical play. Furthermore, all predictor variables met the expected criteria for Tolerance (i.e., greater than 0.2) and for the Variation Inflation Factor (i.e., less than 20). From this, it was assumed that multicollinearity was not present, and the assumption was maintained.

Residual plots looking at the relationship between the standardized residuals of the outcome variable and the standardized predicted values of the outcome variable were computed to test for the assumptions of linearity, normality, and homoscedasticity. Visual inspection of the residual plots confirmed the assumption of linearity. Specifically, bivariate scatter plots indicated that the outcome variables were related in a linear fashion. 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 three outcome variables. For parenting stress (i.e., PSS) and impact on parenting (i.e., FCDC), the test of normality was not significant,  $\omega(60) = 0.98$ , *ns*, and  $\omega(60) = 0.98$ , *ns*, respectively. On the other hand, the test of normality for life satisfaction (i.e., SWLS) was significant,  $\omega(60) = 0.96$ ,  $p = .027$ . This suggests that the SWLS had a non-normal distribution. However, visual inspection of the residual plot suggested that the assumption of normality was maintained. The plot for the SWLS was evenly populated around zero, demonstrating normality, as opposed to dense clustering above or below zero. Moreover, visual inspection of the histogram demonstrated a normal distribution with only a slight negative skew. In addition, skewness and kurtosis values were computed for the three outcome variables, and all three, including the SWLS, were

within the accepted range (i.e., between -2 and 2, and between -3 and 3, respectively).

Thus, the assumption of normality was maintained. In an effort to assess for the assumption of homoscedasticity, the residual plots of the outcome variables were visually evaluated once more. The visual inspection did not identify any real clustering of data. This suggested that the assumption for homoscedasticity of errors was maintained.

Last, the assumption of independence of observations was assessed. The assumption of independence of observation assumed that all participants' observations were independent of one another. Given that independence of observation was best tested through critique of the experimental procedure, and not through statistical analysis, the procedure of the present study was reviewed. It was found that all participants responded to the dependent variables independently, in an online structured format, or a structured format over the phone. Thus, independence of observations was assumed for future analyses.

### *Descriptive Statistics*

Descriptive statistics for the predictor variables (i.e., PPQ, FPLAQ, OWQ) were computed (see Table 3). These are especially interesting, as they shed light on the quantity, and quality, of fathers' physical play with their children with Autism. Regarding fathers' physical play behaviours (i.e., PPQ); the average for fathers' total scores was 85.74, which represents an average of 2.38 per item (i.e., between 1-2x and 3-4x a week). The five items with the highest average frequency of play were: Sliding, Lifting the Child, Tossing in the Air, Making Play Faces, and Playing Pattycake. Moreover, the five items with the lowest average frequency of play were: Rolling Around, Giving Piggyback Rides, Wrestling for Fun, Fake Hitting, and Pillow Fights.



Regarding fathers' physical play activities (i.e., FPLAQ); the average for fathers' total scores was 61.36, which represents an average of 2.35 per item (i.e., between 1x and 2x a week). The five items with the highest average frequency of play were: Watch TV or a Movie, Spend Time Playing with your Child, Joke with your Child, Join your Child in an Activity, and Reading. The five items with the lowest average frequency of play were: Play Golf, Go Bowling, Coach your Child's Sports Team, Do Gymnastics, and Play Board Games.

Table 3

*Descriptive Statistics for the Predictor Variables*

Variable	Mean	Standard Deviation	Minimum	Maximum
Physical Play	85.74	26.58	40	156
Behaviours				
Physical Play	61.36	14.50	30	100
Activities				
Stimulation of Risk Taking	34.00	13.01	12	47.61

Regarding fathers' stimulation of risk taking (i.e., OWQ); the average for fathers' total scores was 34.00, which represents an average of 4.25 per item (i.e., between Regularly and Often). The item with the highest average frequency was: I encourage my child to try out physical challenges (ex. Climbing a ladder), and the item with the lowest average frequency was: I allow my child to be out of my sight if I know there is no potential for danger.

### *Hypothesis 1*

Hierarchical multiple regression analyses (MRA) were conducted to test whether certain variables measuring physical play would predict fathers' well-being. Specifically, it was hypothesized that fathers of children with higher levels of the predictor variables, physical play behaviours (i.e., PPQ), physical play activities (i.e., FPLAQ), and stimulation of risk taking (i.e., OWQ), will show better well-being. Well-being was assessed by independently measuring fathers' parenting stress (i.e., PSS), impact on parenting (i.e., FCDC), and life satisfaction (i.e., SWLS). Thus, three individual MRA's were conducted to see if higher levels of the predictor variables independently predicted parenting stress, impact on parenting, and life satisfaction (see Table 4 for a correlation matrix).

Table 4

*Correlations between Predictor Variables and Outcome Variables*

	PPQ	FPLAQ	OWQ	PSS	FCDC	SWLS
PPQ	1.00					
FPLAQ	.561**	1.00				
OWQ	-.114	-.100	1.00			
PSS	-.255	-.209	.001	1.00		
FCDC	.006	.124	.182	-.752**	.151	
SWLS	.029	-.107	.004	-.632**	.473**	1.00

*Note.* \*\* Significant at the .01 level

The first block of the MRA included demographic variables that were important to control for, before assessing the unique influence of the predictor variables. To determine which demographic variables would be included in the first block, the demographic variables were all correlated with the outcome variables (see Table 5). The only demographic variable to be significantly correlated with the outcome variables was marital satisfaction, which was significantly correlated with life satisfaction,  $r(59) = .382$ ,  $p = .003$ . All other demographic variables had small, and not significant, correlations ranging from .034 to -.229. Thus, it was especially important to include marital satisfaction in the first block, but less important to include the other, non-significant variables.

Table 5

*Correlations between Demographic Variables and Continuous Outcome Variables*

Demographic Variable	PSS	FCDC	SWLS
Child Age	-.042	.085	.034
Parent Age	-.044	.119	.086
Number of Children	-.100	.071	.091
Marital Satisfaction	-.229	.194	.382**
Income	.036	.151	.096
Age of Child at Diagnosis	-.035	.117	.159

*Note.* \*\* Significant at the .01 level

However, it was decided that the child's age be included in the first block of variables as well. Though child age was not significantly correlated with the outcome variables, there is a rationale for controlling for this variable. Specifically, fathers may play with their children differently, and engage in some behaviours or activities more often, depending on the age of their children (see Torres et al., 2014). Moreover, child age has been found to be related to fathers' parenting stress for fathers of children with Autism (see Firth & Dryer, 2013; Sabih & Sajid, 2008). The Parent Advisor for the present study also suggested this rationale. He suggested that the survey measures covered a wide variety of physical play options, but that it is likely that fathers' play with their children with Autism would differ depending on the child's age. Specifically, he noted that several years ago, he played with his son in certain ways (i.e., poking for fun), but now that his son is older, he plays in different ways (i.e., ball playing). Thus, it was decided that both child age and marital satisfaction be entered into the first block as demographic control variables.

*Hypothesis 1a.* The first hypothesis looked at whether physical play was related to parenting stress. Specifically, it was hypothesized that higher levels of the predictor variables would be related to lower parenting stress (i.e., PSS). In the first block of the MRA, child age and marital satisfaction were entered. In the second block, physical play behaviours (i.e., PPQ), physical play activities (i.e., FPLAQ), and stimulation of risk-taking (i.e., OWQ) were included using a step-wise method. The step-wise method only enters in variables that account for a significant proportion of unique variance (i.e.,  $p < .05$ ), one at a time.

It was found that physical play behaviours accounted for a significant proportion of unique variance in fathers' parenting stress scores,  $R^2 = .149$ ,  $F\text{-change}(1, 54) = 5.83$ ,  $p = .019$  (see Table 6). In addition, physical play behaviours significantly predicted parenting stress scores,  $\beta = -0.348$ ,  $t(54) = -2.41$ ,  $p = .019$ . Therefore, an increase in one standard deviation of physical play behaviours on the PPQ predicted a decrease in .348 standard deviation in parenting stress on the PSS. It can be concluded that more frequent physical play behaviours predicted lower parenting stress for fathers of children with Autism. Thus, the hypothesis was supported in the present study. Though neither physical play activities nor stimulation of risk-taking significantly predicted parenting stress, after accounting for physical play behaviours, it should be noted that both were related in the expected direction (i.e.,  $\beta = -0.096$  and  $\beta = -0.021$ , respectively).



Table 6

*Regression Analyses for Physical Play predicting Parenting Stress*

Variables	Beta Weights
Step 1	
Child Age	-.070
Marital Satisfaction	-.237
Step 2	
Child Age	-.239
Marital Satisfaction	-.221
Physical Play Behaviours (PPQ)	-.348*
Physical Play Activities (FPLAQ	-.096
Stimulation of Risk Taking (OWQ)	-.016

*Note.* \* Significant at the .05 level

*Hypothesis 1b.* This hypothesis looked at whether physical play was related to impact on parenting. Specifically, it was hypothesized that higher levels of the predictor variables would be related to less impact on parenting (i.e., FCDC). No predictor variables were found that accounted for a significant proportion of unique variance in fathers' impact on parenting scores (see Table 7). The first block did not account for a significant proportion of unique variance as well,  $R^2 = .050$ ,  $F(2, 55) = 1.43$ , *ns*. It can be concluded that physical play is not significantly related to fathers' impact on parenting. Thus, the hypothesis was not supported in the present study. Though neither physical play behaviours, physical play activities nor stimulation of risk-taking significantly predicted impact on parenting, after accounting for demographic variables, it should be noted that all three were related in the expected direction (i.e.,  $\beta = 0.050$ ,  $\beta = 0.159$  and  $\beta = 0.132$ , respectively).

Table 7

*Regression Analyses for Physical Play predicting Impact on Parenting*

Variables	Beta Weights
Step 1	
Child Age	.109
Marital Satisfaction	.207
Step 2	
Physical Play Behaviours (PPQ)	.050
Physical Play Activities (FPLAQ)	.159
Stimulation of Risk Taking (OWQ)	.227

*Hypothesis 1c.* The third hypothesis looked at whether physical play was related to life satisfaction. Specifically, it was hypothesized that higher levels of the predictor variables would be related to higher life satisfaction (i.e., SWLS). No predictor variables were found that accounted for a significant proportion of unique variance in fathers' life satisfaction scores (see Table 8). However, the first block accounted for a significant proportion of unique variance,  $R^2 = .153$ ,  $F(2, 55) = 4.95$ ,  $p = .011$ . It can be concluded that physical play is not significantly related to fathers' life satisfaction, over and above the demographic variables. Thus, the hypothesis was not supported in the present study. Though neither physical play behaviours, nor stimulation of risk-taking significantly predicted life satisfaction, after accounting for demographic variables, it should be noted that both were related in the expected direction (i.e.,  $\beta = 0.036$ , and  $\beta = 0.060$ , respectively), whereas the variable of physical play activities was related in the opposite direction (i.e.,  $\beta = -0.064$ ).

Table 8

*Regression Analyses for Physical Play predicting Life Satisfaction*

Variables	Beta Weights
Step 1	
Child Age	.081
Marital Satisfaction	.392**
Step 2	
Physical Play Behaviours (PPQ)	.036
Physical Play Activities (FPLAQ)	-.064
Stimulation of Risk Taking (OWQ)	.079

*Note.* \*\* Significant at the .01 level

## **Interview Analyses**

### *Data Analysis*

The phone/Skype interview recordings were transcribed by three undergraduate Research Assistants, and checked by the primary researcher. After, the primary researcher read through the transcripts and identified individual codes (e.g., 'one would be to try and *enjoy them for who they are*'). These codes represented the unique meaningful ideas that would become the data for qualitative analyses. Thematic analysis was used to analyze the participants' responses from the phone/Skype interviews (Braun & Clarke, 2006). In accordance with this method, the transcripts were read through and initial themes were noted. Specifically, the primary researcher, the research supervisor, and a fellow graduate student helped to develop the initial themes. Initial themes were created based on the responses, and were then either collated into larger themes, or separated into sub-themes, upon further inspection. As the themes were further inspected, clearer definitions and labels were generated for each theme. Themes were reported in order of the number of codes in each theme (i.e., from most to fewest), with the exception of reporting any miscellaneous themes at the end, and reporting any sub-themes together (see Table 9).

Table 9

*Identified Themes from the Interview Responses*

Question	Theme
#1 Advice to Other Fathers	Follow the Child's Lead and Interest General Suggestions Be Flexible Build a Relationship with your Child Attend to your Child's Enjoyment Be Physically Active Be Patient Teaching/Learning in Play Miscellaneous
#2a Similarities	Engaging in Play Silly Play Similar Interests Physical Play
#2b Differences	Rigidity in Play Restricted and Limited Interest in Play Cognitive Limitations Imaginative Limitations Social Limitations Miscellaneous
#3a Strategies to Facilitate Play	Following the Child's Lead and Interests Having Structure Teaching and Learning in Play Modeling Physical Interactions Positive Reinforcement Being Flexible Working on Improving the Child's Concentration Miscellaneous
#3b Toys to Facilitate Play	Electronics Physical Games Musical Toys Toy Vehicles Board Games Construction Toys Educational Toys Sensory Toys

*(table continues)*

Question	Theme
	Miscellaneous
#4 Future Aspirations for Play	Physical Activities and Sports Other Activities Family and Social Relationships Expand the Child's Learning and Interests Emotion Regulation Child Learns to Enjoy Play Continue with the Status-Quo of Play No Expectations or Aspirations
#5 Father's Feelings about Play	General Positive Feelings General Negative Feelings Tiring Builds the Relationship Happy Frustrating Fun Satisfied Miscellaneous
#6 Play and Father-Son Relationships	Important and Integral to the Relationship If We're Not Playing... Fathers' Role Builds the Relationship Bonding Affection Fathers' Benefits Teaching the Child Means of Communication Reducing the Child's Difficulties Miscellaneous

*Note.* Themes were reported in order of the number of codes in each theme (i.e., from most to least), with the exception of reporting any miscellaneous themes at the end, and reporting any sub-themes together (indented).



*Question #1: Advice to Other Fathers*

The first question asked fathers' what advice they would give to other fathers of children with Autism, in terms of playing with their children. The following themes were identified in the fathers' ( $N = 20$ ) phone/Skype interview transcripts: Follow the Child's Lead and Interest, General Suggestions, Be Flexible, Build a Relationship with your Child, Attend to your Child's Enjoyment, Be Physically Active, Be Patient, Teaching/Learning in Play, and Miscellaneous (see Table 9).

*Follow the child's lead and interest.* A number of fathers advised to follow the child's lead and interest, to aid in facilitating play. For example, fathers' responses regarding following the child's lead included: "let them set the boundaries (Participant #3)", "play how they want to play and not how you want to play (Participant #7)", and "take the lead of the child (Participant #13)". Moreover, fathers' responses regarding following the child's interests included: "if you want to incorporate a new kind of play, try to use something your child already likes (Participant #15)", "if you can engage in the things that your kid is interested in, that can be a bridge to other things (Participant #10)", and "let the child show you what he finds interesting (Participant #8)".

*General suggestions.* Fathers provided many responses that represent general suggestions and advice to other fathers. For example, fathers' variety of responses in this theme included: "make sure that you're in the right frame of mind to give everything you have (Participant #16)", "give some opportunity for the child to win (Participant #15)", "I would say don't underestimate that they do want to play and just keep trying and persevere (Participant #10)", "look for little cues, like non-verbal cues (Participant #12)", and "don't force it (Participant #19)".

*Be flexible.* Several fathers advised the importance of being flexible when trying to play with their children with Autism. For instance, fathers' responses often included some indication that being flexible was important, such as: "you have to adjust your expectations (Participant #19)", "give up those preconceived notions of what play with your son is going to be (Participant #16)", "in terms of play, put aside what is normal (Participant #1)", and "be flexible (Participant #20)".

*Build a Relationship with your Child.* Fathers' responses in this theme suggested that building a relationship with the child with Autism and being involved are important building blocks for play. For example, fathers' responses in this theme included: "get to know your child (Participant #4)", "you need to develop a relationship (Participant #14)", and "get more involved (Participant #18)".

*Attend to your child's enjoyment.* A number of fathers' responses advised to attend to the child's enjoyment when playing. This is an important theme for the present study, as the benefits of play for fathers are being investigated. This helps to demonstrate that play may have benefits for both fathers and their children with Autism. Fathers responses in this theme included: "it's about his enjoyment and not my enjoyment (Participant #10)", "try to get him to laugh (Participant #11)", and "enjoy them for who they are (Participant #1)".

*Be physically active.* Several fathers advised to be physically active in playing with children with Autism. This is also an important theme for the present study, as fathers' physical play was hypothesized to be related to fathers' well-being. Fathers responses in this theme included: "I found that a physical connection is a great way. It also feels very good, it physically feels nice to be close to your son (Participant #10)",

“physical play seems to be the number one thing (Participant #11)”, and “physical contact and play at that point in time, ultimately lead to him being a very engaged and physical and cuddly kid (Participant #9)”.

*Be Patient.* Another theme that was identified in fathers' responses was the advice of being patient. For instance, fathers' responses often included some indication that being patient was important, such as: “be patient (Participants #7, 19)”, and “have lots of patience (Participants #16, 17)”.

*Teaching/Learning in Play.* In this theme, fathers' advised that play could be an avenue for teaching children with Autism and for them to learn new things. For example, fathers' responses in this theme included: “think about shaping some of their play so that it's a little bit transferable to peers (Participant #1)”, we found that play was one of the best ways for teaching and for learning (Participant #2)”, and “teach him how to be the one to initiate what he wants (Participant #11)”.

*Miscellaneous.* The miscellaneous theme included fathers' advice from two participants. These responses were not included in any of the previously mentioned themes for this question, and included: “it's amazing (Participant #6)”, and “to not approach play time in context (Participant #8)”.

#### *Question #2: Similarities and Differences*

The second question asked fathers' how play with their children with Autism is similar, or different, than with their other children. The following themes were identified in the fathers' ( $N = 12$ ) phone/Skype interview transcripts for how play is similar:

Engaging in Play, Silly Play, Similar Interests, and Physical Play. The following themes were identified in the fathers' ( $N = 12$ ) phone/Skype interview transcripts for how play is

different: Rigidity in Play, Restricted and Limited Interest in Play, Cognitive Limitations, Imaginative Limitations, Social Limitations, and Miscellaneous (see Table 9).

*Engaging in play.* Of the fathers' who indicated that their play is similar between their child with Autism and their other child(ren), a number of them indicated that a similarity of play is the actual act of engaging in play. For example, fathers' responses in this theme included: "we play all three of us together a lot (#16)", the way my son presents, he is still quite engaging (Participant #1)", and "just the fact that he was up participating, was a good thing (Participant #6)".

*Silly play.* Another theme that was identified regarding the similarities in play was that fathers' engaged in silly play with their children with and without Autism. For instance, fathers' responses in this theme included: "general goofing... and just general teasing and joking (Participant #4)", and "they both have a big sense of humour so a lot of joking around... kind of looking at something and being silly. That silliness is definitely a common thing with both of them (Participant #10)".

*Similar interests.* Some fathers' responses suggested that fathers' play is similar with their children with and without Autism due to the children having similar interests. For instance, fathers' responses in this theme included: "in terms of the actual kind of play, I don't find it terribly different (Participant #1)", "they obviously want to play, they want to engage in activities that interest them (Participant #7)", and "simple games that he would be interested in, and it is pretty well the same (Participant #19)".

*Physical play.* A few fathers indicated that physical play is a similarity of their play with their children with and without Autism. This is an important theme for the present study, as fathers' physical play was hypothesized to be related to fathers' well-

being. Fathers responses in this theme included: “they’re similar in that they both like physical play (Participant #10)”, and “we do the same kind of spinning around on my back and shoulders and running around the house (Participant #4)”.

*Rigidity in play.* When asked how play is different with their children with and without Autism, a number of fathers’ indicated that their children with Autism were more rigid in their play. For instance, fathers’ responses in this theme included: “I definitely notice that I can be a little bit narrower with my son, in terms of options of things to do (Participant #1)”, “he is very structured in that he has to do everything by the book per se (Participant #7)”, and “we’re more focused on what he wants to do. There’s less back and forth or flexibility (Participant #16)”.

*Restricted and limited interest in play.* Fathers’ responses in this theme indicated that their play with their children with Autism was different as these children had a restricted and limited range of interests in play. For example, fathers’ responses in this theme included: “there’s no inherent desire to play. The other two are always looking to play games or play sports or play something and he just doesn’t have any... he doesn’t look to do it as an activity (Participant #17)”, “my son doesn’t really want to engage in more complex games (Participant #10)”, and “my other child is interested in other things and suggests other things (Participant #19)”.

*Cognitive limitations.* Fathers’ responses indicated that a difference in play had to do with various limitations that their children with Autism presented with. In this theme, cognitive limitations for play were identified, including limitations with communication, attention span and complexity of play. For instance, fathers’ responses in this theme included: “there’s certain limitations to how complicated our play can be... There’s

certain things he doesn't have the attention span or focus to do (Participant #1)", "during the play time my son usually isn't as focused, my other child can play a lot longer... The attention spans are different (Participant #19)", and "our son's non-verbal, it's a little bit tougher for me to get feedback... he can't really express his wishes... he doesn't understand the rules of a soccer game (Participant #6)".

*Imaginative limitations.* In this theme, children's limitations for imaginative and pretend play were identified. For example, fathers' responses in this theme included: "my son doesn't engage in pretend play very much (Participant #10)", "he doesn't have any imaginative skills (Participant #17)", and "I would say imaginative play where there's playing house or playing kitchen or pretending to make something and then eat it... my son doesn't get that (Participant #4)".

*Social limitations.* In this theme, children's social limitations for play were identified. For instance, fathers' responses in this theme included: "with my other child, I am one of the people that she plays with. I am one of many of a sort of network of opportunities she has for play. 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 (Participant #1)", and "with my son with Autism, it's usually me doing the suggesting (Participant #19)".

*Miscellaneous.* The miscellaneous theme included fathers' responses from two participants. These responses were not included in any of the previously mentioned themes for this question, and included: "I am more on the ground with our little son with Autism (Participant #8)", and "I would say it's different (Participant #14)".

*Question #3: Strategies and Toys to Facilitate Play*

The third question asked fathers' what strategies they use to facilitate play with their child with Autism, and if there are any specific toys or games that help to facilitate play. The following themes were identified in the fathers' ( $N = 20$ ) phone/Skype interview transcripts for fathers' strategies: Following the Child's Lead and Interests, Having Structure, Teaching and Learning in Play, Modeling (sub-theme of Teaching and Learning in Play), Physical Interactions, Positive Reinforcement, Being Flexible, Working on Improving the Child's Concentration, and Miscellaneous. The following themes were identified in the fathers' ( $N = 20$ ) phone/Skype interview transcripts for toys or games that facilitate play: Electronics, Physical Games, Musical Toys, Toy Vehicles, Board Games, Construction Toys, Educational Toys, Sensory Toys, and Miscellaneous (see Table 9). For a complete list of the toys and games that fathers indicated using to facilitate play, see Table 10.

Table 10

*Complete List of the Toys and Games that Fathers used to Facilitate Play*


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 Toys and Games
 

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Baking  
 Balls (e.g., Baseball and Soccer Ball)  
 Blocks  
 Board games (e.g., Snakes and Ladders)  
 Books  
 Cartoons  
 Games with words  
 Hide-and-peek  
 iPad  
 Lego  
 Marbles  
 Mine Craft  
 Music (e.g., Classical Music)  
 Musical instruments (e.g., Drums, Keyboard, and Piano)  
 Pillows  
 Play-Doh  
 Shapes of numbers and letters  
 Small physical fights  
 Sports  
 Stickers  
 Swimming  
 Textured toys  
 Toy cars (e.g., Hot Wheels and Thomas the Train)  
 Trampoline  
 TV  
 Video game that has a Legos theme  
 Videos  
 Wii  
 Wrestling  
 Xbox

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*Note.* Toys and games are listed in alphabetical order. Toys and games are only listed once, even if more than one participant mentioned using them.



*Following the child's lead and interests.* When fathers were asked what strategies they used to facilitate play with their children with Autism, many of them indicated that they follow the child's lead and interests. This theme is especially important as it mirrored a theme that was identified when fathers were asked what advice they would give to other fathers. Fathers' responses in this theme included: "I think you sort of present him with an object that he has some interest in... I think the strategy is starting with something you know they like (Participant #13)", "When he was younger, it was just about finding whatever he was fixated on in the moment and turning that into games... Just using whatever his interests were at that time and using that as a way to care and entice him into playing (Participant #2)", "Just to be open to what he is interested in and feed that instead of trying to lead him down a certain path, I just take my lead from him (Participant #8)", "I would say one strategy that has helped a lot has been to enjoy what he's interested in, but also sometimes let him lead (Participant #10)" and "you've got to see what he's interested in (Participant #5)".

*Having structure.* Fathers' responses indicated that an important strategy for facilitating play is to have structure. In this theme, having structure included being organized, explaining the rules, and setting a time for play. For instance, fathers' responses in this theme included: "For my son, he needs to know what to expect... Sometimes being a little bit more organized with him and sometimes a little bit less spontaneous (Participant #1)", "I would have to say the timing... like if it's a scheduled play it's fine, but you have to schedule it, make it less spontaneous (Participant #3)", "we usually lay down the ground rules... Sometimes we will set a timer... sometimes we tell him, 'hey, you have to pick one or the other, you can't have both' (Participant #7)", and

“finding the right time... When I come home, I usually try to schedule time (Participant #20)”.

*Teaching and learning in play.* Fathers' responses indicated that a strategy for play is to incorporate lessons of teaching and learning into play with their children with Autism. This theme is especially important as it mirrored a theme that was identified when fathers were asked what advice they would give to other fathers. Fathers' responses in this theme included: “we try to expose him to new things. I think in playing with him one of the objectives is to expose him to new things. We want him to have fun but balance the things he likes to do with trying new things (Participant #19)”, “I try to incorporate PECS [picture exchange communication system] when I can... we'll do turn-taking games when there's more than just him and me (Participant #11)”, “anything that engages his brain and gets him to think, those are his preferred games... we tell him you know, ‘just take it as a learning experience and move forward’ (Participant #7)”, and “you're trying to teach him as you're playing (Participant #5)”.

*Modeling.* A sub-theme of Teaching and Learning in Play was identified, in that some fathers' indicated using modeling as a teaching technique during play. For example, fathers' responses in this sub-theme included: “it's a lot of hand on hand, direct, physical, direct prompting, I guess they call it direct modeling (Participant #4)”, and “it's mostly a matter of I start doing it and he will start doing it alongside (Participant #18)”.

*Physical interactions.* Another theme that was identified regarding fathers' strategies was to use physical interactions with their children with Autism during play. This theme is especially important as it mirrored a theme that was identified when fathers were asked what advice they would give to other fathers. Fathers' responses in this theme

included: “he’s up just about any time for a rough and tumble sort of mock wrestling, tickling sort of session... it involves a kind of physical play along with the other activity we are trying to do (Participant #18)”, “if he’s not initially interested in playing, then I kind of engage him in a kind of physical interaction... I’ll pick him up and spin him around maybe, or throw him up in the air or tickle him or just engage him in some kind of physical activity that will open him up (Participant #12)”, and “I like to get him up and running, so we are chasing each other around the house, or we’re racing each other (Participant #5)”.

*Positive reinforcement.* A number of fathers’ indicated that a strategy to facilitate play with their children with Autism was to provide positive reinforcement. For instance, fathers’ responses in this theme included: “we use usually a reward-based system, so if he does some sort of play, then he gets a reward (Participant #17)”, “a lot of time’s it’s positive reinforcement... that’s how we entice him I guess, by emphasizing the fun while doing it (Participant #19)”, and “we’ll try to do Connect 4 and he’ll just put the pieces in and then cheering for him when he puts it in, a lot of praise, stuff like that (Participant #11)”.

*Being flexible.* Several fathers’ indicated that being flexible during play is an important strategy for facilitating play with their children with Autism. This theme is especially important as it mirrored a theme that was identified when fathers were asked what advice they would give to other fathers. Fathers’ responses in this theme included: “we switch from one game to another game... we have to maybe alter the rules, the general typical rules (Participant #14)”, “really try and keep an open mind... I think I try to be flexible to what he wants to do (Participant #16)”, and “we change the game up a

little bit (Participant #19)".

*Working on improving the child's concentration.* Another theme that was identified had to do with fathers having to work to improve the child's concentration during play. For instance, fathers' responses in this theme included: "just getting him in a room, without distractions... just really making him sit down and concentrate on a particular thing or focus him on it (Participant #4)", "I try to get his attention... you're trying definitely to get him to look at me while we're playing (Participant #11)", and "he is especially interested or active if there is classical music in the background (Participant #8)".

*Miscellaneous.* The miscellaneous theme included fathers' responses from three participants. These responses were not included in any of the previously mentioned themes for this question, and included: "if I find that my patience is waning, I'm prepared to tell him that he's going to have to play on his own a bit and that I need to take a break (Participant #16)", "To start from presuming competence, to start from the point that this doesn't have to be different and of course adapting that you find out that it is rather starting from a negative baseline (Participant #10)", and "we try to do family games (Participant #19)".

*Electronics.* When asked what toys or games helped to facilitate play, a number of fathers' indicated that electronics helped to facilitate play with their children with Autism. In this theme, electronics included TV, iPads, and video games. Fathers' responses in this theme included: "he loves being on his iPad, he loves his MineCraft... sometimes he will play on the Nintendo Wii (Participant #7)", "his Xbox has two terminals, so one I can play and the other he can play (Participant #15)", "he loves watching sports on TV, as

long as there is a visible time clock either winding down or winding up (Participant #8)", and "using videos or cartoons he already knows and likes (Participant #4)".

*Physical games.* Fathers' responses also indicated that physical interactions and games could help to facilitate play. For example, fathers' responses in this theme included: "he's just starting to learn hide-and-peek, stuff like that, wrestling on the carpet, he'll jump on me or I'll jump on him, or poking at each other (Participant #5)", "at home we have a small trampoline, and we'd take him to the gym where there's like big balls that he can roll on and tumble and stuff, and those tend to be that physical thing that he likes (Participant #10)", and "he likes arm wrestling games also, and little small physical fights he likes to play (Participant #15)".

*Musical toys.* Some fathers also indicated that musical toys helped to facilitate play with their children with Autism. For instance, fathers' responses in this theme included: "musical instruments and stuff we try to do. We had a piano at one time, I try to get him on the piano, just to play.... but we do play, like we make songs up, like just play with the drum (Participant #5)", "he loves music, loves to listen to music, classical music in particular. He has a keyboard, and that is a base of a lot of it (Participant #8)", and "he loves to estimate the sound and get the sensory input of hitting the drum (Participant #11)".

*Toy vehicles.* Another theme that was identified had to do with toy vehicles that children with Autism enjoyed playing with. For instance, fathers' responses in this theme included: "he's been increasingly interested in hot wheels cars recently (Participant #18)", "the hot wheels are favorites (Participant #9)", and "he likes cars and trucks and trains (Participant #12)".

*Board games.* Fathers also noted that board games could help to facilitate play with their children with Autism. For example, fathers' responses in this theme included: "he's suddenly taken an interest in a couple board games and he would ask me (Participant #10)", "he does enjoy board games (Participant #1)", "he likes snakes and ladders (Participant #19)", and "we go play marbles (Participant #9)".

*Construction toys.* Fathers noted that constructions, including Lego, could help to facilitate play with their children with Autism. For instance, fathers' responses in this theme included: "Lego's (Participants #5, 7, 15, 16)", and "we play with blocks (Participant #12)".

*Educational toys.* Some fathers indicated that they use educational toys, to help facilitate play with their children with Autism. These educational toys include books, words, and letters. Fathers' responses in this theme included: "playing games with words (Participant #3)", "he's starting to get interested in letters and numbers so we use kind of foam, bath toys, and stuff in the shapes of numbers and letters (Participant #12)", "there's been success in using books (Participant #4)", and "he loves books and really expresses himself through books (Participant #8)".

*Sensory toys.* A number of fathers indicated that their children with Autism enjoy sensory toys. These sensory toys have a tactile component to them that helped to facilitate play. For instance, fathers' responses in this theme included: "he loves Play-Doh, he loves squeezing it. It gets messy, we get messy together (Participant #20)", "Play-Doh that has a tactile feel and stuff like that", "he enjoys like squishing pillows and things like that (Participant #11)", and "he had a lot of toys with different textures on them (Participant #2)".

*Miscellaneous.* The miscellaneous theme included fathers' responses from two participants. These responses were not included in any of the previously mentioned themes for this question, and included: "he loves to travel (Participant #1)", and "he loves baking (Participant #4)".

#### *Question #4: Future Aspirations for Play*

The fourth question asked fathers' what future aspirations they have for playing with their child with Autism. The following themes were identified in the fathers' ( $N = 19$ ) phone/Skype interview transcripts: Physical Activities and Sports, Other Activities (sub-theme of Physical Activities and Sports), Family and Social Relationships, Expand the Child's Learning and Interests, Emotion Regulation, Child Learns to Enjoy Play, Continue with the Status-Quo of Play, and No Expectations or Aspirations (see Table 9).

*Physical activities and sports.* A number of fathers indicated that a future aspiration for playing with their children with Autism would be to have them involved in physical activities and sports. For example, fathers' responses in this theme included: "I would very much like to bring him to participate in youth sport... hopefully we can take it to the point where he and I can play catch in the backyard and someday maybe we can play a little bit of road hockey (Participant #13)", "like any father, maybe play some sports, kick the soccer ball around, play catch, that kind of thing... I've always had aspirations of getting him into soccer or hockey (Participant #12)", "it would be wonderful to get him involved in some sort of sport... my aspirations would be to use his unbelievable physical talent in some kind of sport (Participant #11)", "I am hoping to get my son skiing and possibly cycling... I would like to see how far he can go with swimming (Participant #9)", and "I would like to see him get more involved in physical

activity” (Participant #3).

*Other activities.* A sub-theme of Physical Activities was identified, in that some fathers' indicated other activities that they aspired for their children with Autism. For instance, fathers' responses in this theme included: “I am thinking of putting him into a music program (Participant #20)”, “I wouldn't mind some more opportunities to watch sporting events (Participant #8)”, and “maybe someday sailing” (Participant #4).

*Family and social relationships.* Several fathers indicated that an aspiration for play with their children with Autism was to have their children more involved socially with friends and family. For instance, fathers' responses in this theme included: “I'm trying to get him to play with other kids... Future hopes would be to get him to play with kids normally and try to make it so that he's socially aware (Participant #5)”, “for the future I would like play to be more social for him, where he is a bit more interested in what other kids are doing... my goal for him is to include a number of other kids (Participant #8)”, “another key thing for us, is to play with other kids or he learns to play better with other kids (Participant #19)”, “he sees me as a friend and he feels that we can do things together (Participant #16)”, and “activities like that, which are family friendly and the whole family can participate in (Participant #4)”.

*Expand the child's learning and interests.* Another theme that was identified regarding fathers' aspirations for play, indicated that fathers' aspire for their children with Autism to expand their interests and learning from play. For example, fathers' responses in this theme included: “I think my only aspiration is to expose him to more things (Participant #19)”, “I would like it where, he would want to play something else other than what he wants to do (Participant #7)”, “to find out what interests him and engage



him (Participant #10)", "he would better understand the rules of a soccer game or would be willing to take direction in terms of how to take a hand off in football, whereas now he doesn't fully understand (Participant #6)", and "I hope he will understand more (Participant #15)".

*Emotion regulation.* Some fathers noted that they aspired that play would improve the emotion regulation difficulties for their children with Autism. For instance, fathers' responses in this theme included: "I do hope that over time some of that anxiety and rigidity will lessen (Participant #10)", "we've really been trying to work on with him patience... so I'd like to play with him so that he doesn't give up or get so easily frustrated (Participant #3)", "I would like for my son to not get so upset and frustrated (Participant #7)", and "I'm trying to teach him not to hit (Participant #5)".

*Child learns to enjoy play.* Another theme that was identified indicated that some fathers aspired for their children with Autism to learn to better enjoy play. For example, fathers' responses in this theme included: "my future aspirations would be for him to get enjoyment out of playing... a positive outcome would be if we ever got to the point where he wants to play (Participant #17)", "my main objective is that he has fun with whatever were doing (Participant #19)", and "I hope he realizes that he has fun when he does those, specifically baseball. Eventually, I hope he has a more open mind about playing (Participant #7)".

*Continue with the status-quo of play.* Several fathers stated that their aspirations for playing with their children with Autism were simply to continue playing as they are now. For instance, fathers' responses in this theme included: "the little answer is I just want to keep finding play as a connection with him (Participant #10)", "just to keep it

going (Participant #2)", "my future aspirations would be, we'll just continue to offer things to him (Participant #4)", and "just to kind of keep that relationship developing and going (Participant #16)".

*No expectations or aspirations.* Though the questions asked fathers' what their aspirations for play with their children with Autism are, a number of fathers indicated that they did not want to have expectations or aspirations for their children with Autism. For instance, fathers' responses in this theme included: "I think when you have a child with Autism you come to realize that while you're not going to place limitations on the child, it's not always the best idea to have expectations for the child in terms of where things are going to go (Participant #13)", "let go of expectations. I don't mean that in a bad way, I just mean not to really focus on what I hope will be (Participant #10)", and "we don't have particular preset aspirations, goals, fantasies, if you will, of what he should be like (Participant #4)".

#### *Question #5: Father's Feelings about Play*

The fifth question asked fathers' how they feel after playing with their child with Autism. The following themes were identified in the fathers' ( $N = 20$ ) phone/Skype interview transcripts: General Positive Feelings, General Negative Feelings, Tiring (sub-theme of General Negative Feeling), Relationship Building, Happy, Frustrating, Fun, Satisfied, and Miscellaneous (see Table 9).

*General positive feelings.* A number of fathers indicated many positive feelings in describing how they felt after playing with their children with Autism. This theme included responses that represented general positive feelings. For instance, fathers' responses in this theme included: "overall for me, I feel great... you're having a great

time. I feel good (Participant #9)", "you just kind of feel great... when you get the laughter, it's amazing. So I feel awesome when we get to play and there's laughter (Participant #11)", "I feel good... when I'm playing and he's engaged, it's great (Participant #19)", "I feel great after playing with him... you know, it's just beautiful (Participant #4)", and "best part of my day (Participant #8)".

*General negative feelings.* A number of fathers indicated many negative feelings in describing how they felt after playing with their children with Autism. This theme included responses that represented general negative feelings. For instance, fathers' responses in this theme included: "I feel kind of disappointed and I lose my interest, so sometimes it upsets me (Participant #14)", "sometimes I feel a bit of pressure (Participant #1)", "I guess you feel helpless (Participant #3)", "sometimes it can be stressful (Participant #5)", and "that was sad (Participant #9)".

*Tiring.* A sub-theme of General Negative Feelings was identified, in that some fathers' indicated specifically that they felt tired after playing with their children with Autism. For instance, fathers' responses in this theme included: "it's quite tiring (Participant #16)", "sometimes tired (Participant #5)", and "sometimes, it can be a bit draining (Participant #1)".

*Relationship Building.* Several fathers indicated that they felt closer to their child with Autism after playing with them, and that this helped to build the relationship. Though this is not explicitly an emotion, it is important, as it mirrors a theme that was identified when fathers were asked to give advice. Thus, building a relationship with children with Autism is important, and fathers experienced this after playing with their children. Fathers' responses in this theme included: "in general, I think when I play with

him, I get a pretty good feeling that it was well worth it and a good bonding experience (Participant #11)", "you're proud of playing with your son... you feel like a dad (Participant #9)", "kind of more empathetic towards him (Participant #3)", "when we learned that he would do bowling on his own and that we could bowl together... that was just a very exciting moment to kind of find a breakthrough there (Participant #17)", and "it's something to look forward to. It's inspirational (Participant #20)".

*Happy.* Many fathers explicitly stated that they felt happy after playing with their children with Autism. For example, fathers' responses in this theme included: "after playing with him, I feel very joyous and happy (Participant #10)", "I always enjoy playing with my son, any chance I get. I always feel happy when I'm done playing with him (Participant #7)", "he's happy, I'm happy, everybody's happy (Participant #4)", and "I feel quite happy because many times he initiates play (Participant #15)".

*Frustrating.* Many fathers explicitly stated that they felt frustrated after playing with their children with Autism. For example, fathers' responses in this theme included: "honestly, usually a little bit frustrated (Participant #2)", "depending on how and what we're playing, sometimes I feel extremely frustrated (Participant #3)", "there are things that can be very frustrating in playing with my son (Participant #10)", and "sometimes it's rather frustrating if he's just not into it (Participant #18)".

*Fun.* Several fathers explicitly stated that they felt they had fun after playing with their children with Autism. For example, fathers' responses in this theme included: "it's a lot of fun to play with him (Participant #10)", "if he's into it, we have a lot of fun (Participant #18)", and "it's a lot of fun (Participant #9)".

*Satisfied.* Some fathers explicitly stated that they felt satisfied after playing with

their children with Autism. For example, fathers' responses in this theme included: "I feel satisfied (Participant #1)", "usually satisfied, if we've made a good effort and had some good time together (Participant #16)", and "fulfilled, I guess (Participant #12)".

*Miscellaneous.* The miscellaneous theme included fathers' responses from four participants. These responses were not included in any of the previously mentioned themes for this question, and included: "I was actually wishing that there were more people around us to see us play (Participant #9)", "it's a pretty wide range of emotions (Participant #13)", and "I don't notice any difference in how I feel when I play with the two kids (Participant #19)".

*Question #6: Play and Father-Son Relationships*

The sixth question asked fathers' how play affects their father-son relationship with their child with Autism. The following themes were identified in the fathers' ( $N = 20$ ) phone/Skype interview transcripts: Important and Integral to the Relationship, If We're Not Playing... (sub-theme of Important and Integral to the Relationship), Fathers' Role (sub-theme of Important and Integral to the Relationship), Builds the Relationship, Bonding (sub-theme of Builds the Relationship), Affection (sub-theme of Builds the Relationship), Fathers' Benefits, Teaching the Child, Means of Communication, Reducing the Child's Difficulties, and Miscellaneous (see Table 9).

*Important and integral to the relationship.* When fathers were asked how play affects their father-son relationship with their children with Autism, many fathers indicated that play is an important and integral part of the relationship. For instance, fathers' responses in this theme included: "it's very important. It's a vital part of the relationship... it's always a good idea for a father to make time to play with the child,

especially with a child with Autism (Participant #20)", "I think this is very significant. Most of our interaction is play or a small fight on the bed... I feel this is extremely important and is a reason why he likes me (Participant #15)", "I think our relationship is based on play to a large extent... it's a big part of the way we connect... I can't imagine having a connection with him without play, it's so integral to how we interact with one another (Participant #10)", "it's the basis of it... play is probably the strongest pillar of the relationship, we always seem to be able to play (Participant #9)", "it's a fairly significant part... that's one of the big parts in how he defines our relationship (Participant #2)", and "I think it's integral to the relationship (Participant #16)".

*If we're not playing...* A sub-theme of Important and Integral to the Relationship was identified, in that some fathers' indicated how important play was to their relationship by explaining what the relationship would be like without play. For instance, fathers' responses in this theme included: "I feel like I lost something if we haven't played in a while... I feel like I would lose a connection with my son if we don't play (Participant #19)", "if we're not having opportunities to play, then quite often, we're ignoring each other and not having a relationship... without the play and the good times, it robs us of having a positive relationship (Participant #16)", "if we're not playing, all you're doing is instructing... if you don't play, they don't know whether you like them or if you're there to make their lives miserable (Participant #20)", and "the lack of common ground for play undermines our relationship (Participant #17)".

*Fathers' role.* Another sub-theme of Important and Integral to the Relationship was identified, in that some fathers' indicated how important play was to their relationship, by explaining that this was their role as a father. For instance, fathers'

responses in this theme included: “my child will play differently with me than he will with mom or grandma... that play, he knows the uniqueness, that his is something that dad does, that maybe mom doesn't (Participant #6)”, and “she [ex-wife] doesn't play with him because he's a boy and she doesn't like to do boy things... so yeah, it's always sort of been more of my role (Participant #2)”.

*Builds the relationship.* Many fathers indicated that play can help to build the relationship with their children with Autism. This theme was also identified in regards to several other questions (i.e., advice, strategies), and this helped to demonstrate the importance of building a relationship with children with Autism through play. Fathers' responses in this theme included: “a lot of what gave us the relationship to have that trust, was play. It reinforces it (Participant #9)”, “I think what it does, in addition to him playing differently with me, it gives him and I, the things that we carve out, that are our things (Participant #6)”, “I think it reinforces the relationship me and my son have (Participant #7)”, “playing definitely builds our relationship (Participant #14)”, “it's good for our relationship... he loves doing things with me (Participant #4)”, and “play really strengthens it (Participant #18)”.

*Bonding.* A sub-theme of Building the Relationship was identified, in that some fathers' indicated that they bonded with their children with Autism through play. For instance, fathers' responses in this theme included: “that makes us grow a lot closer when we can find common ground... I think it's much more powerful play than with my other children (Participant #17)”, “it's one of the best ways for me to interact with him, and engage him, and have this bond and relationship together (Participant #13)”, “I think that play shaped our early connection for us to really see each other and be in the moment

together (Participant #10)", "definitely very bonding at times... every chance we get to play together just enhances the overall closeness that were fostering (Participant #8)", "I think it's brought us closer (Participant #6)", and "at times, it gives us bonding moments (Participant #3)".

*Affection.* Another sub-theme of Building the Relationship was identified, in that some fathers' indicated that they showed affection with their children with Autism through play. For instance, fathers' responses in this theme included: "the play is the only thing which I think he understands that I love him (Participant #15)", "he knows that daddy is there for him, that daddy is going to play with him (Participant #7)", "one of the things he said that he loves best when he's with me is that we play together (Participant #2)", and "seeing him laugh and having fun with me, I think, makes him realize that 'okay this guy, he's an alright guy'... playing with him and spending all this time with him makes him feel comfortable with me (Participant #11)".

*Fathers' benefits.* Fathers' noted that on top of the father-child relationship, there are unique benefits for fathers from playing with their children with Autism. This theme is especially important, as the primary quantitative hypotheses were interested in whether fathers experience benefits from engaging in play with their children with Autism. Fathers' responses in this theme demonstrated qualitative examples of these benefits, and included: "my son, more than most kids, has definitely made me a better player... it's made me more open to what he thinks is fun. He has probably made me more fun, a bit more spontaneous too, and certainly improved my general aptitude as far as parenting goes (Participant #8)", "to be able to play with him and have that interaction is very good for my emotional kid of state of mind... if I can see some kind of interaction with him, it



would always give me a little bit more hope (Participant #12)", and "I would say it was definitely worth it for me. It really made me feel like we had a great relationship... it's a nice feeling when your kid wants you to do stuff for him (Participant #11)".

*Teaching the child.* Some fathers indicated that play can help teach their children with Autism. This theme has also identified in regards to several other questions (i.e., advice, strategies), and this helped to demonstrate the importance of teaching children with Autism through play. Fathers' responses in this theme included: "that's a really great teachable moment for people with Autism and we're finding that sports and play... are opportunities for him to develop that way (Participant #13)", "I tend to push his limits a little bit more than my wife or another parent would, I think that helped a lot in his development (Participant #18)", "it's one of the less artificial ways I can find peaking moments to try and work on stuff with him... letting me know where he's at with things (Participant #2)", and "I also use that as teachable moments... and I am a teacher to him (Participant #7)".

*Means of communication.* Fathers' responses also noted that play can function as a means of communicating with their children with Autism. For instance, fathers' responses in this theme included: "I've noticed that when I'm tickling him for example, he'll be saying, "Stop! Stop! No, do it here, do it there", like he's suddenly communicating in a very meaningful way, he's asking for things, he's talking to me, he's in the moment, present and totally there (Participant #10)", "play is the primary means of communication. If I talk in terms of words to make him understand it will not work (Participant #15)", "because men and boys don't tend to talk to each other, so I think he has to sort of have something to do, to start to talk. So, you'll wrestle and he'll start talking

or start discussing stuff (Participant #5)", and "I mean talking with them and hanging out with them is a good time, but usually that ends up in some kind of play (Participant #19)".

*Reducing the child's difficulties.* Some fathers also indicated that play can help to reduce some of the difficulties that their children with Autism experience. For example, fathers' responses in this theme included: "the play sort of balances out those negatives of any parent-child relationship, but it can be just that little bit extra because of the cognitive challenges of Autism (Participant #16)", "if he's sick we can play just a little bit together. If he's angry or sad or confused, if you can get him going on something play-based, the switch comes on and he's no longer angry, sad, confused whatever. He knows it's how he can be calmed, by playing with him (Participant #9)", and "often times, I would use a game or a game-like strategy... if he's in a situation that's stressful for him. I'll try to distract him or refocus him using games or play (Participant #10)".

*Miscellaneous.* The miscellaneous theme included one father's response. This response was not included in any of the previously mentioned themes for this question, and included: "I don't think it makes a huge difference one way or another (Participant #3)".

### **Exploratory Analyses**

Several themes were identified for the six exploratory questions (see Table 11). Themes were reported in order of the number of codes in each theme (i.e., from most to fewest), with the exception of reporting any miscellaneous themes at the end, and reporting any sub-themes together.

Table 11

*Identified Themes for the Survey Exploratory Responses*

Question	Theme
#1 Other Play Activities	Physical Activities Social or Interactive Activities Culinary Activities Educational Activities Art Activities Games Construction Activities Outdoor Activities Miscellaneous
#2 Father or Child Initiated Play	Fathers' Initiations Only Way for Play Expands his Interests Child's Initiations Narrow Initiations Beginning to Initiate Child Plays Alone Mutual Initiations
#3 Father or Mother Initiated Play	Mothers' Initiations Fathers' Initiations Father's Role Mother's Role and has Time Father has Time Father Physical Play Miscellaneous
#4 Father's Satisfaction with Play	Child's Limitations for Play Narrow/Rigid Play Positive Emotions Quality Time Together Fathers' Wishes for Play Fathers' Limitations Miscellaneous
#5 Relationship Quality	Mixed and Negative Aspects General Positive Relationship Love Best Friend

*(table continues)*

Question	Theme
#5 Relationship Quality	Closeness Affection Quality Time Together Fathers' Responsibilities Mother's Relationship

*Note.* Themes were reported in order of the number of codes in each theme (i.e., from most to fewest), with the exception of reporting any miscellaneous themes at the end, and reporting any sub-themes together

#### *Question #1: Other Play Activities*

The first exploratory question asked fathers if there were other activities that they engaged in with their child with Autism. This question was expected to help with future studies, by identifying a wider scope of father-son activities with children with Autism. The following themes were identified in the fathers' ( $N = 26$ ) online survey transcripts: Physical Activities, Social or Interactive Activities, Culinary Activities, Educational Activities, Art Activities, Games, Construction Activities, Outdoor Activities, and Miscellaneous (see Table 11).

*Physical activities.* Though the present study asked specifically about physical play behaviours and physical play activities, many fathers' indicated that there were other physical activities that they engaged in with their children with Autism. For instance, fathers' responses in this theme included: "rock climbing, trampolining, jogging (Participant #51)", "sensory gym (Participant #34)", "martial arts (Participant #8)", and "hockey (Participant #3)".

*Social or interactive activities.* Several fathers' noted that they engaged in social and interactive activities with their children with Autism. For example, fathers' responses

in this theme included: “hide-and-seek, peekaboo (Participant #42)”, “role-playing games (Participant #52)”, and “verbal joking (Participant #15)”.

*Culinary activities.* A number of fathers' responses indicated that they engaged in culinary activities with their children with Autism. For instance, fathers' responses in this theme included: “baking (Participants #3, 15, 40)”, “cooking (Participants #3, 16, 44)”, and “picking fruit (Participants #44)”.

*Educational activities.* Some fathers indicated that they engaged in educational activities with their children with Autism. For example, fathers' responses in this theme included: “homework (Participants #16, 43)”, “learning new languages (Participant #50)”, “reading together (Participant #27)”, and “spelling (Participant #38)”.

*Art activities.* Some fathers also indicated that they engaged in educational activities with their children with Autism. For example, fathers' responses in this theme included: “singing, dancing (Participant #59)”, and “painting (Participant #33)”.

*Games.* Fathers' responses indicated that they engaged in various kinds of games with their children with Autism. For instance, fathers' responses in this theme included: “dice games (Participant #50)”, “board games (Participant #34)”, and “puzzles (Participant #15)”.

*Construction activities.* A few fathers noted that they do construction activities with their children with Autism. These fathers' responses in this theme included: “building stuff (Participant #40)”, and “Lego (Participant #44)”.

*Outdoor activities.* A few fathers also noted that they engage in outdoor activities with their children with Autism. These fathers' responses in this theme included: “fishing (Participant #33)”, and “camping (Participant #56)”.

*Miscellaneous.* The miscellaneous theme included two father's responses. These responses were not included in any of the previously mentioned themes for this question, and included: "watching sports (Participant #4)", and "getting the mail (Participant #25)".

#### *Question #2: Father or Child Initiated Play*

The second exploratory question asked fathers whether they, or their children with Autism, initiated for play more often. This question was expected to explore how play is initiated for children with Autism. The following themes were identified in the fathers' ( $N = 43$ ) online survey transcripts: Fathers' Initiations, Only Way for Play (sub-theme of Fathers' Initiations), Expands his Interests (sub-theme of Fathers' Initiations), Child's Initiations, Narrow Initiations (sub-theme of Child's Initiations), Beginning to Initiate (sub-theme of Child's Initiations), Child Plays Alone, and Mutual Initiations (see Table 11).

*Fathers' initiations.* A number of fathers indicated that they are the ones who initiate for play more often with their children with Autism. Fathers' responses in this theme explored how this initiation was made, and included: "he needs a little coaxing sometimes (Participant #23)", "I usually give him a silly look and then chase him (Participant #12)", "I usually ask him if he wants to do something with me (Participant #24)", "I give him ideas (Participant #1)", and "I suggest the game (Participant #8)".

*Only way for play.* A sub-theme of Fathers' Initiations was identified, in that some fathers indicated that the only way for play to happen with their children with Autism is if they initiate. For instance, fathers' responses in this theme included: "he doesn't like to play so I have to initiate (Participant #39)", "he will not engage in play unless you ask or

join (Participant #18)", "he needs a prompt to be involved (Participant #51)", and "my child is nonverbal and socially delayed, so I initiate more (Participant #31)".

*Expands his interests.* Another sub-theme of Fathers' Initiations was identified, in that some fathers indicated that they initiated activities specifically to expand the areas of interest for their children with Autism. For instance, fathers' responses in this theme included: "I often have to get him to play other activities, as he is hyper-focused on one (Participant #37)", "I normally will suggest or introduce an activity, outside of video games (Participant #44)", and "my son initiates play for a narrow range of activities, otherwise I initiate play (Participant #15)".

*Child's initiations.* A number of fathers indicated that their children with Autism were the ones who initiated for play more often. Fathers' responses in this theme explored how this initiation was made, and included: "he'll grab my hand and tell me to come here (Participant #59)", "he'll climb on me and initiate play (Participant #53)", "he often comes and asks to spend time with me (Participant #25)", and "most of the time I follow his leads (Participant #50)".

*Narrow initiations.* A sub-theme of Child's Initiations was identified, in that some fathers noted that their children would initiate, but only for a narrow range of activities. For instance, fathers' responses in this theme included: "for video games, he initiates (Participant #44)", "he initiates for piggyback rides (Participant #13)", and "he engages us to play Lego and video games (Participant #21)".

*Beginning to initiate.* Another sub-theme of Child's Initiations was identified, in that some fathers noted that their children are beginning to initiate play. For instance, fathers' responses in this theme included: "he is learning to request and initiate

(Participant #1), “after 10-weeks of ABA, asking to play became more common (Participant #9)”, and “he does initiate sometimes (Participant #28)”.

*Child plays alone.* Though the question asked fathers who initiated for play more, an interesting theme was identified. Some fathers' responses indicated that their children with Autism prefer to play alone. For example, fathers' responses in this theme included: “he is often happy doing things by himself (Participant #43)”, “he's very happy in his own world (Participant #28)”, “he likes to play by himself (Participant #13)”, and “he is okay playing by himself (Participant #10)”.

*Mutual initiations.* The mutual initiations theme included one father's response. This response was not included in any of the previously mentioned themes for this question, and included: “we have a sound that we make at each other when we want to play (Participant #20)”.

### *Question #3: Father or Mother Initiated Play*

The third exploratory question asked fathers whether they, or their partner, initiated for play with their children with Autism more often. This question was also expected to explore how play is initiated for children with Autism. The following themes were identified in the fathers' ( $N = 34$ ) online survey transcripts: Mothers' Initiations, Fathers' Initiations, Father's Role, Mother's Role and has Time, Father has Time, Father Physical Play, and Miscellaneous (see Table 11).

*Mothers' initiations.* A number of fathers indicated that their partner initiated for play with their children with Autism more often than they did. For instance, fathers' responses in this theme included: “my wife seeks out play with him more than I do (Participant #55)”, “she usually sits and plays with him (Participant #12)”, “she is more



playful (Participant #23)", and "she is very innovative with new games to play with my son (Participant #50)".

*Fathers' initiations.* A number of fathers also indicated that they initiated for play with their children with Autism more often than their partner did. For instance, fathers' responses in this theme included: "we have a similar taste in activities, so I initiate more (Participant #59)", "I have more energy to play with him than she does (Participant #2)", "I initiate more spontaneous/goofy activities (Participant #15)", and "I play with my children a lot (Participant #60)".

*Father's role.* Several fathers noted that they initiated for play with their children with Autism more, because that was their role, as a father. For instance, fathers' responses in this theme included: "daddy is for playing, mommy is for comfort (Participant #20)", "it seems to be more of my department (Participant #9)", "I am the primary caregiver and better at unstructured play (Participant #51)", and "wife homeschools him so her interaction is schooling, so often I initiate the play (Participant #37)".

*Mother's role and has time.* Several fathers noted that their partner initiated for play with their children with Autism more, because that was their role, as a mother, and because they had more time available for play. For instance, fathers' responses in this theme included: "my wife is home full time so she has more interaction time (Participant #22)", "my wife is home so she has more time to initiate play (Participant #60)", "wife is stay at home, so she has more time with him (Participant #38)", and "spouse homeschools him and has more time with him (Participant #24)".

*Father has time.* Similarly, several fathers noted that they initiated for play with their children with Autism more, because they had more time available for play. For

example, fathers' responses in this theme included: "I work from home so I am around more (Participant #46)", "I stay at home, spouse works, so I have more time (Participant #31)", and "spouse works and I don't, so I initiate more (Participant #13)".

*Father physical play.* A number of fathers indicated that they initiated for play more with their children with Autism, and that these initiations were specific to physical play. For example, fathers' responses in this theme included: "I usually am more physically active with him (Participant #12)", "I am more active in physical play (Participant #44)", and "it's sports with me (Participant #4)".

*Miscellaneous.* The miscellaneous theme included one father's response. This response was not included in any of the previously mentioned themes for this question, and included: "our son has very different interactions with the two of us, it's tough to quantify who initiates more (Participant #4)".

#### *Question #4: Father's Satisfaction with Play*

The fourth exploratory question asked fathers' to rate their current level of satisfaction with play with their children with Autism. This question was rated on a 5-point Likert scale that ranged from 1 (*Very Unsatisfied*) to 5 (*Very Satisfied*). Exploratory analyses with this question allowed for further exploration of the relationship between fathers' quantity of physical play and their satisfaction with play. Moreover, exploratory analyses allowed for further exploration of the relationship between fathers' satisfaction with play and their well-being.

First, the relationship between fathers' physical play and their satisfaction with play was analyzed. In the first block of the MRA, child age and marital satisfaction were entered in. In the second block, physical play behaviours (i.e., PPQ), physical play

activities (i.e., FPLAQ), and stimulation of risk-taking (i.e., OWQ) were included using a step-wise method. It was found that more frequent physical play behaviours accounted for a significant proportion of unique variance in fathers' satisfaction with play scores,  $R^2 = .442$ ,  $F\text{-change}(1, 54) = 9.57$ ,  $p = .003$ . In addition, physical play behaviours significantly predicted satisfaction with play scores,  $\beta = 0.434$ ,  $t(54) = 3.09$ ,  $p = .003$  (see Table 12). Therefore, an increase in one standard deviation on the PPQ predicted an increase in .434 standard deviation on fathers' satisfaction with play scores. Moreover, physical play activities and stimulation of risk-taking did not significantly predict fathers' satisfaction with play. It can be concluded that more frequent physical play behaviours predicted increased satisfaction with play for fathers of children with Autism.

Table 12

*Regression Analyses for Physical Play predicting Satisfaction with Play*

Variables	Beta Weights
Step 1	
Child Age	-.184
Marital Satisfaction	.120
Step 2	
Child Age	.009
Marital Satisfaction	.099
Physical Play Behaviours (PPQ)	.393**
Physical Play Activities (FPLAQ	.182
Stimulation of Risk Taking (OWQ)	.081

*Note.* \*\* Significant at the .01 level

Second, the relationship between fathers' satisfaction with play and their well-being was analyzed. Three independent MRA's were conducted, to predict fathers' parenting stress, impact on parenting, and satisfaction with life (see Table 13).

Table 13

*Regression Analyses for Satisfaction with Play predicting Well-Being*

Variables	Beta Weights		
	Parenting Stress	Impact on Parenting	Life Satisfaction
Step 1			
Child Age	-.072	.113	.082
Marital Satisfaction	-.238	.208	.392**
Step 2			
Child Age	-.160	.192	.147
Marital Satisfaction	-.179	.155	.349**
Satisfaction with Play	-.473***	.427***	.351**

Note. . \*\* Significant at the .01 level. \*\*\* Significant at the .001 level

*Parenting stress.* In the first block of the MRA for parenting stress, child age and marital satisfaction were entered in. In the second block, fathers' satisfaction with play was included using a step-wise method. It was found that fathers' satisfaction with play accounted for a significant proportion of unique variance in fathers' parenting stress scores,  $R^2 = .292$ ,  $F\text{-change} (1, 55) = 18.25$ ,  $p < .000$ . In addition, fathers' satisfaction with play significantly predicted parenting stress scores,  $\beta = -0.498$ ,  $t(55) = -4.27$ ,  $p < .000$ . Therefore, an increase in one standard deviation on fathers' satisfaction with play scores predicted a decrease in .498 standard deviation on fathers' parenting stress scores.

*Impact on parenting.* In the first block of the MRA for impact on parenting, child age and marital satisfaction were entered in. In the second block, fathers' satisfaction with play was included using a step-wise method. It was found that fathers' satisfaction with play accounted for a significant proportion of unique variance in fathers' impact on parenting scores,  $R^2 = .252$ ,  $F\text{-change} (1, 55) = 14.88$ ,  $p < .000$ . In addition, fathers' satisfaction with play significantly predicted impact on parenting scores,  $\beta = 0.462$ ,  $t(55) = 3.86$ ,  $p < .000$ . Therefore, an increase in one standard deviation on fathers' satisfaction with play scores predicted an increase in .462 standard deviation on fathers' impact on parenting scores (i.e., a decrease in impact on parenting).

*Life satisfaction.* In the first block of the MRA for life satisfaction, child age and marital satisfaction were entered in. In the second block, fathers' satisfaction with play was included using a step-wise method. It was found that fathers' satisfaction with play accounted for a significant proportion of unique variance in fathers' life satisfaction scores,  $R^2 = .273$ ,  $F\text{-change} (1, 55) = 9.14$ ,  $p = .004$ . In addition, fathers' satisfaction with play significantly predicted life satisfaction scores,  $\beta = 0.357$ ,  $t(55) = 3.02$ ,  $p = .004$ .

Therefore, an increase in one standard deviation on fathers' satisfaction with play scores predicted an increase in .357 standard deviation on fathers' life satisfaction scores.

It can be concluded that greater satisfaction with play for fathers predicted decreased parenting stress, decreased impact on parenting, and increased life satisfaction for fathers of children with Autism. Thus, satisfaction with play significantly predicted fathers' well-being.

This exploratory question also allowed fathers to describe their current level of satisfaction with play. The following themes were identified in the fathers' ( $N = 43$ ) online survey responses: Child's Limitations for Play, Narrow/Rigid Play (sub-theme of Child's Limitations for Play), Positive Emotions, Quality Time Together, Fathers' Wishes for Play, Fathers' Limitations, Miscellaneous (see Table 11).

*Child's limitations for play.* A number of fathers described several limitations that their children with Autism faced during play, when asked to describe their level of satisfaction. For instance, fathers' responses in this theme included: "I wish we were able to engage in more complex/advanced interactions (Participant #30)", "he loses interest before the activity is done (Participant #8)", "he becomes very angry if play does not go his way (Participant #22)", "I wish that he was more interested in playing with me (Participant #60)", and "I'm always 'stretching' him to engage in different spontaneous interactions (Participant #15)".

*Narrow/rigid play.* A sub-theme of Child's Limitations was identified, in that some fathers indicated that the specific limitation was narrow and rigid play from their children with Autism. For instance, fathers' responses in this theme included: "I wish that he was more interested in a wider variety of activities (Participant #60)", "I often have to

participate in the activities he is interested in (Participant #37)", "I want him to do things he sometimes does not want to do (Participant #54)", "he is focused on his limited favorite activities (Participant #15)", and "sometimes wish he would expand his areas of play (Participant #24)".

*Positive emotions.* Many fathers indicated positive emotions, in describing their level of satisfaction with play with their children with Autism. For instance, fathers' responses in this theme included: "I think of it as a gift from God to have a special child and I enjoy playing with him (Participant #53)", "I love playing with my son and seeing him laugh is the best feeling in the world (Participant #38)", "I love any time we spend together (Participant #24)", "I am happy playing with him (Participant #40)", and "we generally have a good time (Participant #59)".

*Quality time together.* Several fathers indicated that their satisfaction with play with their children with Autism was related to spending some quality time together. For example, fathers' responses in this theme included: "I look forward to my time with him (Participant #44)", "each time is another quality moment (Participant #18)", "he really enjoys our play and it always brings us closer together (Participant #12)", and "I spend more time with him this way (Participant #2)".

*Fathers' wishes for play.* A number of fathers described wishes for play with their children with Autism that were not being met. For instance, fathers' responses in this theme included: "I wish I could play and engage him more (Participant #42)", "I wish he wanted to play more (Participant #56)", "I wish I could help more with play skills that would be transferable to peers (Participant #4)", and "I wish he could do more (Participant #48)".



*Fathers' limitations.* Some fathers' responses indicated that they faced their own limitations for play with their children with Autism. For instance, fathers' responses in this theme included: "sometimes I am short-tempered (Participant #51)", "I am frustrated at times (Participant #22)", "I wish I had more time (Participant #52)", and "I do not give him enough time (Participant #50)".

*Miscellaneous.* The miscellaneous theme included one father's response. This response was not included in any of the previously mentioned themes for this question, and included: "time of year is hard, and long days in IBI [Intensive Behavioural Intervention] (Participant #1)".

#### *Question #5: Relationship Quality*

The fifth exploratory question asked fathers' to rate their current level of relationship quality with their children with Autism. This question was rated on a 5-point Likert scale that ranged from 1 (*Very Poor*) to 5 (*Very Good*). Exploratory analyses with this question allowed for further exploration of the relationship between fathers quantity of physical play and their relationship quality. Moreover, exploratory analyses allowed for further exploration of the relationship between fathers' relationship quality and their well-being.

First, the relationship between fathers' physical play and their relationship quality was analyzed. In the first block of the MRA, child age and marital satisfaction were entered in. In the second block, physical play behaviours (i.e., PPQ), physical play activities (i.e., FPLAQ), and stimulation of risk-taking (i.e., OWQ) were included using a step-wise method. It was found that physical play activities accounted for a significant proportion of unique variance in fathers' relationship quality scores,  $R^2 = .323$ , *F-change*

(1, 54) = 16.61,  $p = .003$ . In addition, physical play activities significantly predicted fathers' relationship quality scores,  $\beta = 0.462$ ,  $t(54) = 4.08$ ,  $p < .000$  (see Table 14). Therefore, an increase in one standard deviation on the FPLAQ predicted an increase in .462 standard deviation on fathers' relationship quality scores. It should be noted that physical play behaviours also significantly predicted fathers' relationship quality scores,  $\beta = 0.406$ ,  $t(54) = 2.98$ ,  $p = .004$ , but no longer significantly predicted the scores after physical play activities were accounted for,  $\beta = 0.146$ ,  $t(54) = 0.91$ , *ns*. Moreover, stimulation of risk-taking scores did not significantly predict fathers' relationship quality scores. It can be concluded that more frequent physical play activities, or physical play behaviours, predicted increased relationship quality for fathers of children with Autism.

Second, the relationship between fathers' relationship quality and their well-being was analyzed. Three independent MRA's were conducted to predict fathers' parenting stress, impact on parenting, and satisfaction with life (see Table 15).

Table 14

*Regression Analyses for Physical Play predicting Relationship Quality*

Variables	Beta Weights
Step 1	
Child Age	-.175
Marital Satisfaction	.269*
Step 2	
Child Age	-.117
Marital Satisfaction	.307*
Physical Play Behaviours (PPQ)	.362*
Physical Play Activities (FPLAQ)	.412***
Stimulation of Risk Taking (OWQ)	.096

*Note.* \* Significant at the .05 level. \*\*\* Significant at the .001 level

Table 15

*Regression Analyses for Relationship Quality predicting Well-Being*

Variables	Beta Weights		
	Parenting Stress	Impact on Parenting	Life Satisfaction
Step 1			
Child Age	-.072	.113	.082
Marital Satisfaction	-.238	.208	.392**
Step 2			
Child Age	-.148	.158	.139
Marital Satisfaction	-.120	.138	.304*
Relationship Quality	-.430***	.307*	.321*

Note. . \* Significant (sig.) at the .05 level. \*\*sig. at the .01 level. \*\*\*sig. at the .001 level.

*Parenting stress.* In the first block of the MRA for parenting stress, child age and marital satisfaction were entered in. In the second block, fathers' relationship quality was included using a step-wise method. It was found that fathers' relationship quality accounted for a significant proportion of unique variance in fathers' parenting stress scores,  $R^2 = .244$ ,  $F\text{-change}(1, 55) = 13.61$ ,  $p = .001$ . In addition, fathers' relationship quality significantly predicted parenting stress scores,  $\beta = -0.460$ ,  $t(55) = -3.69$ ,  $p = .001$ . Therefore, an increase in one standard deviation on fathers' relationship quality scores predicted a decrease in .460 standard deviation on fathers' parenting stress scores.

*Impact on parenting.* In the first block of the MRA for impact on parenting, child age and marital satisfaction were entered in. In the second block, fathers' relationship quality was included using a step-wise method. It was found that fathers' relationship quality accounted for a significant proportion of unique variance in fathers' impact on parenting scores,  $R^2 = .133$ ,  $F\text{-change}(1, 55) = 5.28$ ,  $p = .025$ . In addition, fathers' relationship quality significantly predicted impact on parenting scores,  $\beta = 0.307$ ,  $t(55) = 2.30$ ,  $p = .025$ . Therefore, an increase in one standard deviation on fathers' relationship quality scores predicted an increase in .307 standard deviation on fathers' impact on parenting scores (i.e., a decrease in impact on parenting).

*Life satisfaction.* In the first block of the MRA for life satisfaction, child age and marital satisfaction were entered in. In the second block, fathers' relationship quality was included using a step-wise method. It was found that fathers' relationship quality accounted for a significant proportion of unique variance in fathers' life satisfaction scores,  $R^2 = .247$ ,  $F\text{-change}(1, 55) = 6.91$ ,  $p = .011$ . In addition, fathers' relationship quality significantly predicted life satisfaction scores,  $\beta = 0.327$ ,  $t(55) = 2.63$ ,  $p = .011$ .

Therefore, an increase in one standard deviation on fathers' relationship quality scores predicted an increase in .327 standard deviation on fathers' life satisfaction scores.

It can be concluded that greater relationship quality between fathers and their children with autism predicted decreased parenting stress, decreased impact on parenting, and increased life satisfaction for fathers of children with Autism. Thus, relationship quality significantly predicted fathers' well-being.

This exploratory question also allowed fathers to describe their relationship quality with their children with Autism. The following themes were identified in the fathers' ( $N = 37$ ) online survey transcripts: Mixed and Negative Aspects, General Positive Relationship, Love (sub-theme of General Positive Relationship), Best Friend (sub-theme of General Positive Relationship), Closeness (sub-theme of General Positive Relationship), Affection (sub-theme of General Positive Relationship), Quality Time Together, Fathers' Responsibilities, Mother's Relationship (see Table 11).

*Mixed and negative aspects.* A number of fathers indicated that there are mixed and negative aspects of their relationship quality with their children with Autism. For instance, fathers' responses in this theme included: "he is too absorbed in his own world to have a truly give/take relationship, but what we do have is better than nothing at all (Participant #24)", "it could be better... I am not sure my son ever truly understands what we are saying to him (Participant #9)", "we have our bad days", and "there's a bit of tension between us (Participant #43)".

*General positive relationship.* Many fathers indicated that they had a general positive relationship with their children with Autism, and this theme contained fathers' general statements. For instance, fathers' responses in this theme included: "I find his

positive demeanor inspiring (Participant #22)", "we're happy to see each other (Participant #20)", "we get along very well (Participant #43)", "he is excited when I am around (Participant #53)", and "he doesn't go to sleep unless I am next to him (Participant #42)".

*Love.* Several sub-themes of the General Positive Relationship theme were identified, in terms of the specific characteristic of the positive relationship. In this case, many fathers described loving their children. For example, fathers' responses in this theme included: "I love him, despite his challenges (Participant #48)", "we have a great loving relationship (Participant #11)", "I love him unconditionally, and I can see that he loves me too (non-verbal, so he doesn't tell me; Participant #38)", and "we love each other (Participant #56)".

*Best friend.* Another sub-theme of the General Positive Relationship was identified. Fathers' responses in this theme described their relationship quality with their children with Autism as a best friend relationship, and included: "he sees me as a playmate and a father (Participant #59)", "he is my best friend (Participant #54)", "he's my best buddy (Participant #23)", and "my son is my best friend (Participant #3)".

*Closeness.* Another sub-theme of the General Positive Relationship was identified that described the closeness between fathers and their children with Autism. For example, fathers' responses in this theme included: "we are close, since we spend so much time together (Participant #2)", "we have a very close relationship (Participant #37)", "we're very close (Participants #4, 8)", and "we're tight (Participant #46)".

*Affection.* The last sub-theme of General Positive Relationship described the affection that fathers and their children with Autism showed to each other. For instance,

fathers' responses in this theme included: "we are able to show affection for each other (Participant #44)", "from an affection standpoint, it's excellent (Participant #55)", and "he always greets me with a big smile and hug (Participant #20)".

*Quality time together.* Many fathers described their relationship quality as spending quality time together. For instance, fathers' responses in this theme included: "my son and I have a very close relationship... we always try to find time for play and quality time together (Participant #37)", "I can tell he appreciates the time I spend with him (Participant #22)", "we love spending time together (Participant #15)", "he likes doing stuff with me (Participant #49)", and "we have a lot of fun together (Participant #51)".

*Fathers' responsibilities.* Several fathers indicated the responsibilities they feel they have as a father, in describing their relationship quality with their children with Autism. For example, fathers' responses in this theme included: "I have a responsibility as a father to engage him in activities which he usually has little interest (Participant #15)", "I try to give him different experiences and keep him active (Participant #10)", "I'm often the one who tries to get him to do things he doesn't want to do (Participant #43)", and "he comes to me when he wants to play or when he's hurt or sad (Participant #59)".

*Mother's relationship.* In describing their relationship quality with their children with Autism, a few fathers indicated that their children have a better relationship with their mother. For instance, fathers' responses in this theme included: "he feels more connected to his mom (Participant #43)", and "he has a better relationship with my wife (Participant #33)".



### Post-hoc Analyses

The regression analyses indicated that physical play behaviours (i.e., PPQ) were related to fathers' quality of play and of relationship, and that these in turn were related to all three fathers' benefits. Moreover, physical play behaviours were also related to benefits for fathers (i.e., lower parenting stress). Thus, a post-hoc MRA was conducted to indirectly test the mediation model between physical play behaviours, quality of play and relationship, and parenting stress scores. A post-hoc MRA was conducted to test whether physical play behaviours significantly predicted fathers' stress scores, after accounting for fathers' satisfaction with play and fathers' relationship quality with their children with autism. It should be noted that there were not a sufficient amount of participants to conduct a mediation model, and so, a multiple regression analysis was conducted as an indirect test.

In the first block of the MRA, child age and marital satisfaction were entered in. In the second block, fathers' satisfaction with play and fathers' relationship quality with their children with autism were included in a step-wise method. In the third block, fathers' physical play behaviours were included in a step-wise method. As expected, it was found that fathers' satisfaction with play accounted for a significant proportion of unique variance in fathers' parenting stress scores,  $R^2 = .292$ ,  $F$ -change (1, 54) = 17.92,  $p < .000$ . In addition, fathers' satisfaction with play significantly predicted parenting stress scores,  $\beta = -0.498$ ,  $t(54) = -4.23$ ,  $p < .000$  (see Table 16). It was also found that fathers' relationship quality accounted for a significant proportion of unique variance in fathers' parenting stress scores, after accounting for fathers' satisfaction with play,  $R^2 = .360$ ,  $F$ -change (1, 53) = 5.61,  $p = .022$ .

Table 16

*Regression Analyses for Physical Play Behaviours, Satisfaction with Play, and Relationship Quality predicting Parenting Stress*

Variables	Beta Weights
Step 1	
Child Age	-.074
Marital Satisfaction	-.233
Step 2	
Child Age	-.161
Marital Satisfaction	-.176
Satisfaction with Play	-.473***
Step 3	
Child Age	-.195
Marital Satisfaction	-.107
Satisfaction with Play	-.376**
Relationship Quality	-.299*
Step 4	
Child Age	-.228
Marital Satisfaction	.110
Satisfaction with Play	-.357**
Relationship Quality	-.281*
Physical Play Behaviours (PPQ)	-.079

*Note.* \* Significant (sig.) at the .05 level. \*\*sig. at the .01 level. \*\*\*sig. at the .001 level

In addition, fathers' relationship quality significantly predicted parenting stress scores,  $\beta = -0.302$ ,  $t(53) = -2.37$ ,  $p = .022$ . However, once fathers' satisfaction with play and fathers' relationship quality were accounted for, fathers' physical play behaviours no longer significantly predicted fathers' parenting stress scores,  $\beta = -0.076$ ,  $t(53) = -0.53$ , *ns*. Thus, the post-hoc analysis concluded that though physical play behaviours significantly predicted fathers' parenting stress scores, this was no longer the case after fathers' satisfaction with play and fathers' relationship quality were accounted for.

### **Summary of Results**

Given the depth of results, the significant correlations identified in the present study are summarized below (also see Figure 1). It was found that physical play behaviours significantly predicted fathers' parenting stress, where more frequency of physical play behaviours was related to lower parenting stress scores. Moreover, it was found that physical play behaviours significantly predicted fathers' satisfaction with play and both physical play behaviours and physical play activities significantly predicted fathers' relationship quality. Specifically, more frequency of play was related to more satisfaction with play and higher relationship quality. It was found that fathers' satisfaction with play significantly predicted fathers' parenting stress, impact on parenting, and life satisfaction scores. Specifically, more satisfaction with play was related to lower parenting stress and impact on parenting, and higher life satisfaction. In addition, it was found that fathers' relationship quality significantly predicted fathers' parenting stress, impact on parenting, and life satisfaction scores. Specifically, higher relationship quality was related to lower parenting stress and impact on parenting, and higher life satisfaction. Last, physical play behaviours no longer significantly predicted

fathers' parenting stress scores after accounting for fathers' satisfaction with play and relationship quality.

Figure 1

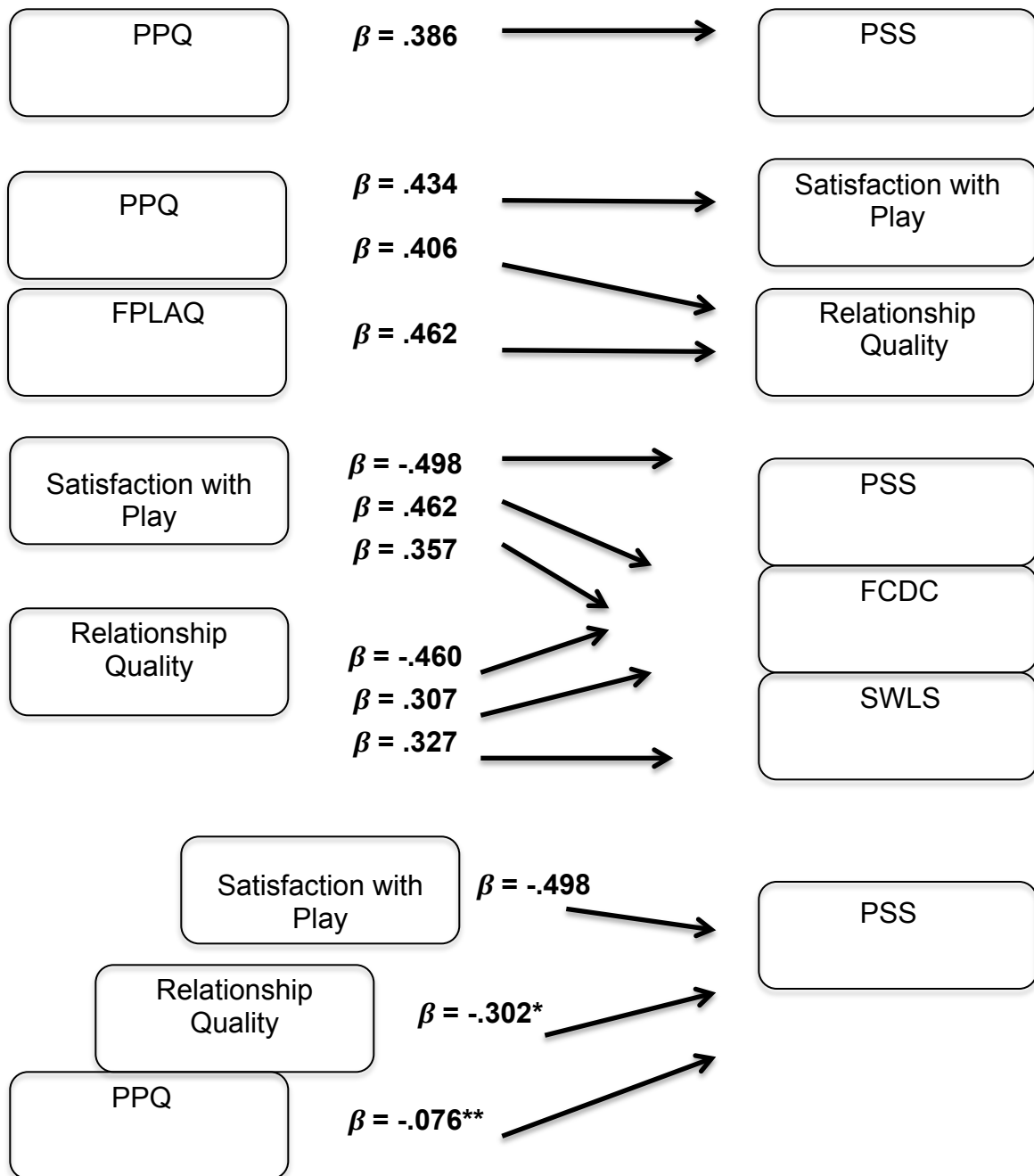


Figure 1. Beta weights for the significant relationships between the predictor variables and the outcome variables, after accounting for Child Age and Marital Satisfaction.

\*After also accounting for Satisfaction with Play. \*\* After also accounting for Satisfaction with Play and Relationship Quality.

## Discussion

The purpose of the present study was to investigate how fathers played physically with their children with Autism, and what the benefits of this play were for fathers.

Fathers' physical play consisted of physical play behaviours, physical play activities, and stimulation of risk taking.

Fathers tended to engage in physical play behaviours (e.g., tickling, piggyback riding) with their children with Autism between 1-2 and 3-4 times per week, whereas they tended to engage in physical play activities (e.g., playing outdoor games, doing art activities) between 1-2 times per week. Fathers most frequent physical play behaviours included playing on the slide, lifting the child, and throwing them in the air. Fathers most frequent physical play activities included watching TV or a movie, and joking with the child. Regarding fathers' stimulation of risk taking (e.g., standing under the child while they climb the monkey bars), fathers encouraged the children to try out physical challenges, most frequently.

Regarding the benefits to fathers from play, Hypothesis 1a predicted that higher levels of physical play behaviours, physical play activities, and stimulation of risk taking would be related to lower parenting stress. Hypothesis 1a was partially supported, as it was found that more frequent physical play behaviours between fathers and their children with Autism were significantly related to lower levels of parenting stress for fathers. Physical play activities and stimulation of risk taking were not related to parenting stress for fathers.

Hypothesis 1b predicted that higher levels of physical play behaviours, physical play activities, and stimulation of risk taking would be related to lower impact on

parenting, and Hypothesis 1c predicted that higher levels of these three variables would be related to higher life satisfaction. Hypothesis 1b and Hypothesis 1c were not supported.

#### *Benefits of Physical Play Behaviours*

Fathers' physical play was measured in various ways, as fathers' physical play with children with Autism has not yet been studied. Fathers' physical play *behaviours* (e.g., tickling, piggyback riding), physical play *activities* (e.g., playing outdoor games, doing art activities), and stimulation of risk taking (e.g., standing under your child while they climb the monkey bars) were all measured. Physical play *behaviours* represented behaviours that fathers physically engage in with their children that require more than one person and involve physical contact. For instance, throwing the child in the air requires some father-child physical contact. These behaviours are playful yet vigorous, and include rough-and-tumble play (Pellegrini & Smith, 1998). Physical play *activities* represented activities that fathers and children undertake together, often involving some other object (e.g., a ball, blocks, or a TV). These activities are playful, but do not have the same physical and vigorous nature of rough-and-tumble play, and could be undertaken either alone or with a playmate. Stimulation of risk taking represented a proxy measure of the father-child activation relationship (Paquette & Bigras, 2010; Paquette & Dumont, 2013b).

Only physical play behaviours, in contrast to physical play activities and stimulation of risk taking, significantly predicted benefits for fathers. This finding is partially consistent with the activation relationship theory, which provided the theoretical rationale for the present study. The activation relationship theory stated that fathers

develop an 'attachment-like' relationship with their children (i.e., the activation relationship) through physical and rough-and-tumble play early on. Fathers who engage in these physical play behaviours, and open their children up to the world (i.e., stimulation of risk taking), build a relationship with their children (Paquette, 2004). The activation relationship posited that fathers' physical play and stimulation of risk taking would be expected to have an influence on their father-child relationship. The present study hypothesized further that this would then be related to fathers' well-being. However, only physical play behaviours (including rough-and-tumble play), and not physical play activities or stimulation of risk taking were related to benefits for fathers, and thus, the results partially supported the activation relationship.

Several examples of fathers' qualitative responses (i.e., from the survey and the interview) will be used to illustrate the quantitative findings here, and throughout, the discussion section. For instance, fathers' qualitative responses highlighted the importance of physical play behaviours for fathers of children with Autism. For instance, when fathers were asked what advice they would give to other fathers, the theme of Be Physically Active was identified. This included quotes such as, "I found that a physical connection is a great way. It also feels very good, it physically feels nice to be close to your son". When fathers were asked what strategies they used to facilitate play, the theme of Physical Interactions was identified. One father stated, "I'll pick him up and spin him around maybe or throw him up in the air or tickle him or just engage him in some kind of physical activity that will open him up". In addition, when fathers were asked how their play with their children with Autism is similar to their play with their typically developing child(ren), a theme of Physical Play was identified. For instance, one father



stated, “we do the same kind of spinning around on my back and shoulders and running around the house”. This theme is especially important, as it helped to demonstrate that fathers and their children with Autism engage in physical play, just as fathers and their typically developing children do.

The multiple regression analyses found that more frequent physical play behaviours predicted lower parenting stress in fathers of children with Autism. Thus, more frequent physical play with their children with Autism was related to more benefits for fathers. That physical play behaviours are related specifically to lower parenting stress is consistent with some of the literature from fathers of typically developing children (Coyl-Shepherd & Hanon, 2013; Torres et al., 2014). Torres et al., found that more father rough-and-tumble play was related to lower father stress, and Coyl-Shepherd and Hanlon found that more father-child outdoor sports and leisure activities were related to lower father stress. Moreover, the results of the present study advanced the literature from fathers of children with developmental disabilities, that found that more father involvement (i.e., attending or coaching the events) in Special Olympics activities was related to lower parenting stress for fathers.

The results of the present study suggested that the frequency of physical play is also related to other aspects for fathers. For instance, more frequent physical play behaviours significantly predicted higher satisfaction with play for fathers. Moreover, more frequent physical play behaviours and physical play activities significantly predicted higher relationship quality for fathers with their children with Autism. In other terms, more frequent physical play was related to higher quality of play and higher quality of father-child relationships.

The qualitative results also suggested that play led to feelings of satisfaction, closeness, affection, and bonding between fathers and their children with Autism. When fathers were asked to describe their satisfaction with play, themes of Positive Emotions and Quality Time Together were identified. One father stated, “he really enjoys our play and it always brings us closer together”. Moreover, when fathers were asked to describe how they felt after playing with their children with Autism, themes of General Positive Feeling, Happiness, Fun, and Satisfaction were identified. For instance, one father stated, “I always enjoy playing with my son, any chance I get. I always feel happy when I’m done playing with him”. A theme of Relationship Building was also identified, where one father stated, “in general, I think when I play with him, I get a pretty good feeling that it was well worth it and a good bonding experience”.

When fathers’ were asked how play affects their father-son relationship, themes of Builds the Relationship, Important and Integral to the Relationship, If we’re not Playing..., Bonding, and Affection were identified. For instance, one father stated, “seeing him laugh and having fun with me, I think, makes him realize that, ‘okay this guy, he’s an alright guy’ ”. Moreover, when fathers were asked to describe their relationship quality with their children with Autism, themes of General Positive Relationship, Affection, Love, Closeness, Best Friend, and Quality Time Together were identified. For instance, one father stated, “my son and I have a very close relationship... we always try to find time for play and quality time together”.

The qualitative responses illustrated that play led to feelings of satisfaction, closeness, affection, and bonding between fathers and their children with Autism. In addition, fathers indicated that playing with their children with Autism was important to

the father-child relationship. This theme was consistent with one found by Donaldson et al. (2011), who interviewed fathers after participating in a father-directed in-home training program for fathers of children with Autism. After participating in the training program that included father-child play sessions, a theme of Having a Close Relationship was identified. These fathers illustrated a similar picture for the importance of play to the father-child relationship. That is, fathers' play is related to positive experiences and satisfaction, and higher father-child relationship quality. This satisfaction with play and father-child relationship quality may be especially important for fathers' benefits.

#### *Quality, not Frequency, of Play*

The results of the present study suggested that it might be this quality of play, and of father-child relationships, that are especially important in predicting fathers' well-being, above and beyond the frequency of play. Specifically, both satisfaction with play and father-child relationship quality significantly predicted higher well-being for fathers (i.e., lower parenting stress and impact on parenting, and higher life satisfaction).

Current findings on the relationship between fathers' satisfaction with play and fathers' well-being are consistent with findings from Agate et al. (2009) and Russell (1987) who found that family leisure satisfaction was the most significant predictor of family quality of life, above and beyond the quantity of leisure activities and other demographic variables. Agate et al. concluded similarly, that it may be the quality of involvement that is more important, and predictive, than the quantity of involvement.

Current findings on the relationship between fathers' relationship quality and fathers' well-being are similar to findings from studies of fathers of children with disabilities. For instance, higher father-child relationship quality was related to less daily

parenting hassles for fathers of children with intellectual disabilities (Gerstein et al., 2009); and fathers' positive perceptions of their family relationships was related to lower parenting stress for fathers of children with developmental disabilities (Woodman, 2014).

These findings add support to the conclusion that the quality of play and the quality of the father-child relationship are related to fathers' well-being. The present study found this to be the case for fathers of children with Autism.

Fathers' qualitative responses in the present study illustrated how the quality of play and of the father-child relationship are related to positive outcomes for fathers. For instance, when fathers were asked how play is related to their father-child relationship, a theme of Fathers' Benefits was identified. This theme included responses describing the benefits that fathers experienced in their relationship quality as a result of playing with their children with Autism. One father stated, "has definitely made me a better player... it's made me more open to what he thinks is fun, he probably made me more fun. A bit more spontaneous too, certainly improved my general aptitude as far as parenting goes", and another stated, "to be able to play with him and have that interaction is very good for my emotional kind of state of mind, that just makes me happy... If I can see some kind of interaction with him, it would always give me a little bit more hope".

The broaden-and-build theory of positive emotions (Frederickson, 2001; 2004) could help to explain how higher quality of play and of relationship is related to higher father well-being. Frederickson stated that positive emotions, including experiences of joy, allowed individuals to broaden their mindsets and could have long-term benefits by broadening their opportunities for personal resources. The joy and satisfaction that fathers experienced by playing with their children with Autism (i.e., higher satisfaction with play

and/or higher relationship quality) may help fathers to increase and maintain psychological resilience, build personal resources, and experience more positive emotions in the future. The-broaden-and-build theory would suggest that if play is an opportunity for fathers to experience joy with their children with Autism, then fathers who do so to a greater extent (i.e., more frequent play) may be more adept in dealing with parenting stress and impact on parenting, and may experience more positive emotions that relate to higher life satisfaction.

The present study also explored the relationship between the frequency of fathers' physical play behaviours and fathers' well-being, after accounting for fathers' satisfaction with play and fathers' relationship quality. Once the quality of play and of relationship were accounted for, higher frequency of physical play behaviours no longer predicted lower parenting stress. The results suggested that the quality of play and of father-child relationships are stronger correlates of fathers' well-being than the frequency of physical play behaviours. That is, it may be the quality, and not the frequency, of play that is especially important for fathers' benefits.

#### *Revisiting the Activation Relationship Theory*

The present study hypothesized that more father-child physical play, and thus more optimal father-child activation relationships, would be related to benefits for fathers. However, only physical play behaviours significantly predicted benefits for fathers, and physical play activities and stimulation of risk taking did not. This was surprising, given the theoretical rationale of the activation relationship theory. There are several potential reasons that stimulation of risk taking (i.e., a proxy measure of the activation relationship) did not predict benefits for fathers.

First, the Openness to the World Questionnaire (Paquette et al., 2009) has only been validated for typically developing children aged 2-5, though the author noted that it should be okay for children aged 4-11. It may be that fathers' stimulation of risk taking is more important to the activation relationship in younger children. Moreover, it may be that fathers' stimulation of risk taking is not sufficient for predicting an activation relationship with their children with Autism, who may already experience difficulties in relationship development as part of their diagnosis. Also, it should be noted that fathers' stimulation of risk taking is a proxy measure for the activation relationship, and that this relationship can only be identified observationally with the Risky Situation task (Paquette et al., 2009). It may also be the case that the development of an activation relationship is related more to benefits for children than to fathers. Longitudinally, more optimal activation relationships between fathers and children were related to less internalizing problems for children (Dumont & Paquette, 2013).

In addition, that stimulation of risk taking did not significantly predict fathers' benefits suggested that the activation relationship theory is still important in understanding the father-child relationship, but that developing this emotional 'attachment-like' relationship with their children with Autism to a greater extent was not directly related to fathers' well-being. Instead, the results of the present study are more in line with the broaden-and-build theory of positive emotions (Frederickson, 2001; 2004) that suggests that the positive emotions fathers experienced during play (i.e., joy, satisfaction, and affection) was related to fathers' well-being. That is, the positive emotions experienced during play may be more related to fathers' well-being than the optimal father-child activation relationship.

However, the activation relationship may play an important role in facilitating and starting physical play between fathers and their children. For instance, more optimally activated toddlers (i.e., average age of 15.8 months) engaged in more frequent rough-and-tumble play with their fathers a year or two later (i.e., average age of 35.1 months; Paquette & Dumont, 2013a). Recall that the present study found that more frequent physical play behaviours, including rough-and-tumble play, was related to higher satisfaction with play and higher father-child relationship quality, which in turn were related with fathers' benefits. Thus, the activation relationship theory may be especially important early on in the father-child relationship, to begin a process of physical play behaviours and, in turn, positive emotions that may relate to fathers' benefits.

### *Implications*

The results of the present study have important implications for parent training, specifically for fathers of children with Autism. Parent training with children with Autism is an important intervention, and has demonstrated effects on children's development (Birkin et al., 2004; Flippin & Crais, 2011). However, fathers' participation is often overlooked in these interventions (see Flippin & Crais, 2011 for a review; Singer et al., 2007). Overlooking fathers' involvement in parent training can have negative effects on the children's social and communication development, and on the family unit as a whole (Flippin & Crais, 2011). Flippin and Crais concluded that children with Autism would benefit from having their fathers being involved in play-based interventions. The results of the present study suggested that including fathers in interventions, especially of a physical play nature, might have benefits for fathers as well. This inclusion of a physical

'play' component to existing parent-training programs has already received some attention in the literature (Elder et al., 2010; Fabiano et al., 2009; Winter 2006).

Elder et al. (2010) developed a father-directed in-home training program for fathers of children with Autism. This training program taught fathers techniques to engage their children during play to facilitate social interactions for their children. After training, fathers displayed more behaviours during play that were expected to facilitate social interactions (i.e., imitating/animating), and their children with Autism displayed more social interaction behaviours (i.e., child initiating). Fathers also provided qualitative illustrations of their benefits from training (Donaldson et al., 2011). Winter (2006) found that fathers of children with Autism wanted recreational activities to be incorporated into the parent-training program, including time for rough-and-tumble play. Though this study only compared two groups of three fathers, Winter found that the fathers in the parent training program with recreational activities and rough-and-tumble play, participated more, cancelled less often, and mastered the skills better than the fathers in the standard parent-training program. Similarly, Fabiano et al. (2009) studied fathers of children with attention-deficit/hyperactivity disorder and found that fathers who participated in behavioural parent-training with an additional 1-on-1 soccer game had higher attendance, more homework compliance, more training completion, and reported more enjoyment in the program than fathers who participated in only the behavioural parent-training program. Thus, the results of the present study are consistent with related literature, and have important implications for the structure and outcomes of parent training interventions for fathers of children with Autism.



The results of the present study also have important implications for understanding fathers' play with their children with Autism. For instance, fathers should be informed that enjoying play with their children with Autism is related to higher well-being for themselves. Fathers shared their experiences of play in the present study, and though some indicated associated limitations and frustrations, many still indicated aspects of enjoyment and satisfaction. It is especially important for fathers to become aware that persevering, and playing with their children with Autism can have benefits for themselves, over and above the benefits for their children. The results of the present study would suggest that it is beneficial for fathers to begin or continue to engage in enjoyable physical play with their children with Autism. As one father stated, "I would say don't underestimate that they do want to play and just keep trying and persevere".

In addition, the results of the present study could have implications for community recreation and sport programs for children with Autism. The results of the present study suggest that these programs for children with Autism (e.g., soccer, swimming, gymnastics) should include some parent-participation, especially father-participation. Fathers may benefit from participating in these activities with their children with Autism, especially if they can be physically engaged with their children (e.g., throwing them in the water).

Another implication of the present study is that fathers had the opportunity to share their voices and their advice to other fathers. When fathers were asked what advice they would give to other fathers, in terms of playing with their children with Autism, themes of Follow the Child's Lead, Be Flexible, Be Physically Active, Be Patient, and Child's Enjoyment emerged. Fathers suggested that these are important aspects of play

for other fathers to be aware of. Interestingly, the theme of Follow the Child's Lead matched one of the techniques used in the father-directed in-home training program developed by Elder et al. (2010). In their training program, fathers are encouraged to follow the child's lead in play and extend from there (i.e., imitating).

Fathers also had the opportunity to share the toys or games that they used to facilitate play (see Table 10). The list of toys or games that fathers used could be shared with other fathers and organizations, as a helpful starting point for facilitating play. Using some of the recommended toys or games may help other fathers to facilitate play with their children with Autism.

### *Strengths*

The present study had the most father participants exclusively focused on fathers' play with their children with Autism found in the research literature. Moreover, the present study used a mixed-methods design to identify both quantitative and qualitative aspects of play. Providing fathers with an opportunity to share their voices and their experiences was valuable, as most of the fathers indicated an interest in the additional phone interview (72%). All participants who completed the phone interview asked the principal researcher to let them know of the study's results. In addition, the principal researcher worked with a Parent Advisor for the present study. Including a Parent Advisor can benefit the researcher, the Parent Advisor, and the consumers of research (Drouillard, 2012). For the present study, the Parent Advisor helped with constructing the online survey, the ethics application, recruitment, interpretation of the results, and suggestions for future research.

### *Limitations*

There are several limitations that must be acknowledged for the present study. First, the present study used a cross-sectional design, and not a longitudinal design. Thus, conclusions can only be made about the relationship between variables, and not the directionality of these. Another limitation is that the sample size of 60 fathers was too small to allow for statistical tests of mediation models. With more participants, the relationship between physical play, quality of play and father-child relationships, and fathers' outcomes may be better understood. Moreover, the present study primarily measured the frequency and type of physical play, as opposed to more detailed aspects of the quality of play. This is a common limitation noted in studies of fathers' play (see Paquette, Coyl-Shepherd & Newland, 2013). In addition, the present study focused exclusively on fathers and sons and did not include mothers or daughters.

### *Future Suggestions*

Given the results and limitations of the present study, there are several suggestions for future research. First, it would be of interest to test the mediation model and the directionality of the relationship between physical play, quality of play, and fathers' outcomes. Identifying the directionality of this relationship has important practical implications for the well-being of fathers of children with Autism. In addition, future studies would benefit from measuring the quality of play. Better understanding the quality of play for fathers of children with Autism may help to identify the relationship between play and fathers' outcomes. Moreover, future studies on fathers' outcomes would benefit from including some measurement of happiness or positive emotions. Studies on fathers of typically developing children have identified happiness and enjoyment as outcomes of

play (Coyl-Shepherd & Hanlon, 2013; Jenkins, 2009). Positive emotions were noted in the qualitative results from the present study, and could be another avenue for play to have a positive effect on fathers of children with Autism.

The Parent Advisor for the present study suggested several other areas of future research for fathers of children with Autism. For instance, he noted that fathers who report higher well-being may also have a better relationship with their spouse. Thus, not only may fathers benefit from physical play in terms of higher well-being, but their marital status and/or marital satisfaction may benefit as well. This is especially important as parents of children with Autism have a higher divorce rate than parents of typically developing children and report lower marital satisfaction (see Karst & Van Hecke, 2012 for a review). In addition, he suggested that persevering and continuing to engage in physical play with their children with Autism could benefit the physical health of both fathers and their children. For instance, playing physically with their children with Autism could result in better cardiovascular health, more muscle growth, and more weight loss for both fathers and their children with Autism. Last, the Parent Advisor suggested that fathers who engage in physical play with their children with Autism and have higher well-being may also feel more confident in their parenting abilities. This confidence may result in higher self-efficacy for parents. Thus, playing physically with their children with Autism may help fathers' other parenting skills.

### *Conclusions*

The present study found that more frequent physical play behaviours were related to lower parenting stress for fathers. The present study also found that more frequent physical play behaviours were related to higher satisfaction with play and higher father-

child relationship quality, which in turn were both related to higher father well-being (i.e., lower parenting stress, lower impact on parenting, and higher life satisfaction).

Qualitative responses illustrated the importance of physical play and that play led to feelings of satisfaction, closeness, affection, and bonding between fathers and their children with Autism. The results and implications of the present study are especially important, as fathers of children with Autism have been little studied in the play literature.

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**Appendix A***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
Physical Play Questionnaire	Mellen, H. S. (2002) Permission obtained: June 2014
Family Play and Leisure Activities Questionnaire	Newland et al., (2013). Permission obtained: April 2014
Openness to the World Questionnaire	Paquette, D., Eugene, M. M., Dubeau, D., & Gagnon, M-N. (2009) Permission obtained: June 2014
Parental Stress Scale	Berry, J. O., & Jones, W. H. (1995). Permission obtained: Public Domain
Fathers of Children with Developmental Challenges Questionnaire	Ly, A. R., & Goldberg, W. A. (2012) Permission obtained: September 2013
Satisfaction with Life Scale	Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985) Permission obtained: Public Domain

## **Appendix B**

### *Demographic Questionnaire*

1. How old are you (in years): \_\_\_\_
2. What is your identified ethnicity: \_\_\_\_
3. How many children do you have: \_\_\_\_
4. What is your marital status: Married, Separated, Divorced, Single
5. What is your current level of marital satisfaction: Very good, Good, Neutral, Poor, Very poor
6. Do you live in the same home as your child: Yes, No
7. What is your current country of residence: \_\_\_\_
8. What is your current yearly income (in USD\$): \_\_\_\_
9. What is your relationship to your child (biological, step-parent, grand-parent): \_\_\_\_
10. How old was your child at the age of their diagnosis of Autism (in years): \_\_\_\_
11. Do you have any physical, or mental, limitations that you think would limit your ability for physical play with your child: Yes, No

Designed by the Principal Researcher for the present study

## Appendix C

### *Qualitative Questions*

1. Are there any other activities/games that you do with your child that were not asked in the survey: Please list \_\_\_\_
2. Between you and your child, who initiates for play more: You, Your Child
  - a. Please describe
3. Between you and your spouse, who initiates for play more: You, Your Spouse
  - a. Please describe
4. How satisfied are you currently with playing with your child: Very Unsatisfied, Unsatisfied, Neutral, Satisfied, Very Satisfied
  - a. Please describe
5. How is your relationship quality between you and your child: Very Poor, Poor, Neutral, Good, Very Good
  - a. Please describe

Designed by the Principal Researcher for the present study

## **Appendix D**

### *Phone Interview Questions*

1. What advice would you give to other fathers of children with Autism, in terms of playing with their children?
2. How are your play activities with your child with Autism similar or different than with your other child(ren)? If so, explain.
3. Do you have any strategies to facilitating play with your child with Autism? Are there any specific toys or anything that help to facilitate play with your child with Autism?
4. Do you have any future aspirations for playing with your child with Autism?
5. Could you describe how you feel after playing with your child with Autism?
6. How does play affect your father-son relationship with your child with Autism?

Designed by the Principal Researcher for the present study



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