

**An Exploratory Study of the Characteristics Associated with Father-Child Rough-and-Tumble Play
Quality**

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B. Psychology (Honours, Class 1)

This thesis is submitted in partial fulfilment of the requirements for the degree of Master of Clinical
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Declarations

Statement of Originality

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to a copy of my thesis, when deposited in the University Library, being made available my thesis being made available worldwide when deposited in the University's Digital Repository**, subject to the provisions of the Copyright Act 1968.

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Statement of Authorship

I hereby certify that the research presented in this thesis has been completed in collaboration with Dr Linda Campbell, Dr Jennifer St George and Dr Emily Freeman, and student researchers Michael Spark, Holly Ride, Marissa Black and Katie Rolf. I participated in designing the current study, recruiting participants, and collecting data, and was wholly responsible for the data preparation and analyses referred to herein. I was the sole writer of this thesis with appropriate supervision from Dr Linda Campbell and Dr Jennifer St George.

Statement of Manuscript Style

The manuscript section of this submission has been written in accordance with publication instructions for The Journal of Child and Family Studies (see appendix A). All else has been written in accordance with the Publication Manual of the American Psychological Association – Sixth Edition (2010).

Signed:

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Date: 11th December 2018

The conduct of this report was approved by the Human Research Ethics Committee (Newcastle).

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Abstract

Parent-child interactions are critical for a child's overall wellbeing and growth, however there are distinct differences in the types of interactions that mothers and fathers engage in. For example, fathers more commonly utilize physical play, such as Rough-and-Tumble Play (RTP), to interact and bond with their child. Father-child RTP is thought to contribute to a range of child outcomes, including social, emotional cognitive and behaviour development. Literature suggests that the quality of the interaction mediates the effect of RTP interactions on child developmental outcomes. However, little is known about the influence of father and child characteristics on the quality of RTP. Therefore, this study explored the association of both father and child characteristics to the quality of RTP interactions. The study included 64 families of fathers, mothers and their child (aged 18-24 months). Fathers and mothers completed questionnaires concerning child and father characteristics including child social-emotional development. Child developmental attainment was assessed using the Bayley-III scales. In addition, fathers and their child completed a video-recorded play interaction, where fathers were instructed to play RTP as they would at home. Results demonstrated that the quality of RTP was associated with the frequency of RTP, child age and child social-emotional development. The results provide further evidence of the positive link between father-child RTP and child developmental outcomes. This study highlights the importance of furthering our understanding of the impact of father-child interactions.

Key Words: rough-and-tumble play, quality of play, child development, father play, father-child interaction

An Exploratory Study of the Characteristics Associated with Father-Child Rough-and-Tumble Play Quality

Interactions between parents and children are characterised by complex patterns of behaviours, feelings, and expectations that are engaged in by both the parent and the child (Anthony, Anthony, Glanville, Naiman, Waanders, & Shaffer, , 2005). Kerr and colleagues (2004) reported that when parents engage in positive interactions with their children (distinguished by warm and caring behaviours), children are less likely to display disruptive or externalising behaviours. In addition, parents who demonstrate emotional support (e.g., empathy) and cohesiveness (e.g., matching body language) during parent-child interactions have children with stronger social skills and capacity (Haven et al., 2014). The way parents interact with their children, depending on context and needs, is often categorised as social (e.g., smiling), functional (e.g., feeding), or physical (e.g., affection, playing) in nature (John, Halliburton, & Humphrey, 2013). Although each of these types of interactions are critical for the child's overall wellbeing and growth, physical interactions, particularly play, are more likely to foster prosocial behaviours, such as cooperation and emotional self-regulation, in children than functional interactions (Pellis, Pellis, & Bell, 2010; Ramchandani, Domoney, Sethna, Psychogiou, Vlachos, & Murray, 2013). Whilst both mothers and fathers play with their children, there can be differences in the way they interact and play with their children. Increasingly, evidence supports the beneficial impact of father-child physical play, including rough-and-tumble play (RTP), on children's behavioural, cognitive and social development (St George, Fletcher, & Palazzi, 2017). It is now understood that positive outcomes are not simply related to how frequently fathers and children engage in RTP but rather the quality of those interactions, though little is known about the parent and child characteristics that contribute to the quality of RTP (Fletcher, St George, & Freeman, 2013; Shannon, Tamis-LeMonda, London, & Cabrera, 2002; St George, Fletcher, & Palazzi, 2017).

Physical play can be vigorous and may involve bursts of high energy with frequent body contact (Engelisch, & Zimmermann et al., 2002; Grossman, Grossmann, Fremmer-Bombik, Kindler, Scheuerer 2002; St George, Fletcher, & Palazzi, 2017). Throwing and catching, dancing, and swinging paired with exhilarating emotions such as surprise, humour and fright are common in this type of play (Grossman et al., 2002; Hazen, McFarland, Jacobvitz, & Boyd-Soisson, 2010). Although both mothers and fathers engage in physical play with their child (Ramchandani et al., 2013), research suggests that fathers do it more

frequently (Dickson, Walker, & Fogel, 1997; Freedson & Evenson, 1991). Yarrow and colleagues (1984) reported that fathers spend about 44% of their time engaging in physical play compared to 18% for mothers. Fathers' physical play is also described as more stimulating, vigorous and arousing for the child, with mothers' physical play described as calmer focussing more on pretend play and language (Meuwissen & Carlson, 2015; Paquette, Carbonneau, Dubeau, Bigras, & Tremblay, 2003; Tamis-Lemonda, 2004). Both biological (e.g., testosterone levels) and environmental factors (e.g., cultural norms) are likely to account for differences in intensity and frequency of physical play. More specifically, Kuo and colleagues (2018) proposed that higher levels of testosterone as found in fathers, promotes physical play. Additionally, cultural norms can modulate the intensity and frequency of physical play. For example, mothers are more often perceived as a source of security and comfort, providing more of the child's immediate care needs (e.g., feeding, bathing), whereas fathers may be more likely to be considered to be 'playmates' (Lamb & Lewis, 2012).

Recently there has been an increased interest in the prevalence and characteristics of body-contact physical play such as non-aggressive wrestling, grappling, kicking and tumbling, known as rough-and-tumble play (RTP), particularly in the context of fathers and their children (Pellegrini & Smith, 1998; St George, Fletcher, & Palazzi, 2017; St George & Freeman, 2017). Whilst RTP can be confused with genuine aggression, these interactions arise from different motivational systems. RTP is associated with a desire to bond and affiliate with others, whereas aggression is associated with a motivational system to survive (Jones, 1972; Panksepp, 1993; Paquette, 1994; Pellis & Pellis, 2007; Scott & Panksepp, 2003). RTP can be observed in children as young as 18 months of age, peaking during toddlerhood (i.e., preschool years), before declining back to low levels when the child is about 10 years of age (Tremblay, 2008). It has been estimated that RTP accounts for approximately 8% of total parent-child interactions when the child is aged between 3–4 years of age (Pellegrini & Smith, 1998) suggesting that RTP has a significant role in childhood growth and development.

Father-child RTP interactions consist of, and are defined by several domains, including: the physical nature of the activity (e.g., wrestling); competition (e.g., letting the child win often but lose sometimes); dominance and dominance swapping (e.g., being in control, but also periodically swapping roles so that the child dominates the play); playfulness; and positive emotion (e.g., child expresses emotions such as

laughter; Fletcher, St George, & Freeman, 2013). The extent to which a father and child demonstrate these domains during RTP interactions, defines the ‘quality’ of RTP (Fletcher, St George, & Freeman, 2013). The quality of RTP has been linked to child outcomes. For instance, Paquette (2004) reported that children whose fathers engaged in lower quality RTP, with less variability of characteristics like dominance in play, were more likely to experience adverse developmental outcomes. Conversely, higher quality RTP has been linked with children’s emotional and social development, such as self-regulation, co-operation, motivation to accomplish a task and sensitivity to others; behavioural development such as increased locomotor movement, reduced risk-taking and fewer externalising behaviours; and cognitive development such as increased cognitive flexibility, language skills, and attentional capacity (Bjorklund & Brown, 1998; Nakagawa & Sukigara, 2014; Pellegrini, 2002; Pellegrini & Smith, 1998; Pellis & Pellis, 2007; Shannon et al., 2002).

Due to its implications, it is important to delineate the characteristics that may contribute to greater quality RTP (Flanders, Simard, Paquette, Parent, Vitaro, Pihl, & Séguin, 2009; Roggman, Boyce, Cook, & Cook, 2002). Father frequency of RTP is one characteristic that has been associated with RTP quality. Paquette and colleagues (2003) found that frequency of RTP was related to some aspects of RTP quality (i.e. child motivation to engage in play). Further, Flanders and colleagues (2009) reported that the frequency of RTP was moderated by quality of father-child RTP. Specifically, fathers who were less likely to engage in regular RTP and/or physical contact with their child (Flanders et al., 2009) demonstrated reduced quality RTP characteristics (i.e. less dominance) in play.

Research has also suggested that father characteristics, including paternal age, employment, income and education, influence the quality of father-child interactions, including play interactions (Berger & McLanahan, 2015; Carlson & Magnuson, 2011; McBride, Schoope-Sullivan, & Ho., 2005). In particular, studies have found that fathers who are older, higher educated, who spend less time at work, have less intense occupational demands, and have higher incomes are more likely to engage in better quality interactions with their child including playing, reading, or going on outings with their children (Cooney, Pedersen, Indelicato & Oalkovitz, 1993; Paquette et al., 2003; Yeung, Sandberg, Davis-Kean, & Hofferth, 2001). On the other hand, stress can have a detrimental impact on fathers’ parenting; stress fosters harsher parenting styles and negative perceptions about interactions, and reduced attachment with the child

(Deater-Deckard, 1998; McBride, Schoope & Rane, 2002; Swain, Dayton, Kim, Tolman, & Volling, 2014). Darke and Goldberg (1994) reported that, in a study of both medically compromised and healthy infants aged 12-months, stressed fathers interacted less with their child, and had less responsive and engaged parenting styles. Whilst there is some evidence to suggest that the quality of father-child play can mediate the effects of father stress, whereby quality play and interactions can have a ‘healing’ effect for fathers (Roy & Dyson, 2010), overall, relatively little is known about the relationship between stress and father-child RTP. This is in spite of the literature suggesting that increased parental stress can impact the quality of parent-child interactions, and child development more broadly (Darling & Steinberg, 1993; Huang, Costeines, Kaufman, & Ayala, 2014; Thompson, 2014).

It is also important to consider the child factors that can influence the type of RTP that a father engages in. For instance, father-daughter RTP play behaviours more often mimic behaviours related to caring, protecting, and rescuing, and involve more language, compared to father-son RTP, which involves greater levels of fighting and play strength competition, with these interactions more commonly referencing current media (e.g., television, movies, and video games; Erden & Alpaslan, 2017; Jarvis, 2006; Harbin, 2016; Paley, 2014; Paquette, 2015; Pellegrini Roseth, Mliner, Bohn, Van Ryzin, Vance, & Tarullo, 2007). Further, father-son RTP interactions have been found to include greater levels of activity, intensity and competition compared to father-daughter RTP (Fry, 2005). Mascaro and colleagues (2017) proposed that observed differences in how fathers play with their sons and daughters are related to functional brain differences in how fathers process their child’s emotional cues. Child age can also impact the type of RTP fathers engage in. With more mature motor (i.e., running, jumping), social-emotional and cognitive skills, children are able to engage in more and complex and rigorous RTP (Fletcher, St George, & Freeman, 2013; Kochanska, Murray, & Harlan, 2000; Rothbart, Ellis, Rosario Rueda, & Posner, 2003). Despite children developing skills important for RTP (i.e., climbing, throwing and sharing) well before 48 months of age, few studies have investigated the quality of RTP in toddlers (Rothbart et al., 2003).

Given that fathers are spending more time at home, it is important to develop our understanding about factors that promote high quality RTP play interactions. It has been shown that father characteristics such as socio-economic status, level of stress and parenting style; and child characteristics, such as gender and age, may affect the quality of father-child play, however little is known of the interrelationship of

father and child characteristics and RTP in toddlers. Therefore, the aim of this study is to explore father and child characteristics that may be associated with the quality of father-child rough-and-tumble play in children aged between 18-24 months. Based on the literature in older children, it is expected that fathers who engage more frequently in RTP, who are older, with higher education and income will have higher quality of RTP. Further, it is expected that paternal stress will be associated with poorer RTP quality. Finally, we expect that RTP quality will be higher for father-child dyads where the child is older, male and developmentally more mature in the domains of cognition, language, motor and social-emotional skills. .

Method

Participants

The study included 64 families (father, mother and child). Families were eligible to participate if the child was aged between 18 and 24 months old, as this period corresponds with a time when father-child RTP is observable in play interactions (Pellegrini & Smith, 1998). Further, the child was required to share a common home with both biological parents so as to reduce the heterogeneity of the sample in terms of possible confounding factors (Reijntjes, Kamphuis, Prinzie, & Telch, 2010). Exclusion criteria included known child developmental delay, or an inability of the father or child to engage in physical activities such as running and jumping. These exclusions were chosen as literature reports that both developmental delays, and inability to engage in physical activity confounds the quality of RTP (Bhutta, Cleves, Casey, Cradock, & Anand, 2002). Informed consent to participate was obtained from both parents as per Human Ethics approval from The University of Newcastle (No: H-2010-1300; see Appendix D).

Father-child dyads were excluded from the analysis if they had discontinued the study ($N=2$) or if they had participated in the study but their 'rough-and-tumble' play segment could not be coded (i.e., if the child or father refused to engage in RTP; $N=4$). Father-child dyads were also excluded if they did not fully complete one of the questionnaires and the missing data was beyond the limit for correction ($N=1$). The final sample for analysis consisted of 64 children (29 males and 35 females) between the age of 18 and 24 months ($M= 20.05$, $SD= 3.19$), and their biological fathers. Over three quarters of children were first-born (76.6%), with most identifying as Caucasian or Australian (52%).

Procedure

A convenience sample of father-child dyads were recruited via posters and flyers that were distributed via local child care centres, play groups, and online parent support forums (see Appendix F). Potential participants were screened for their eligibility via a telephone call. Of those who were eligible and willing to participate in the study, an email containing a study information sheet, consent form and a unique identification code were sent to both the father and the mother. The identification code provided the participants with access to a series of online questionnaires that were completed by either: the father only, the mother only, or both parents. The questionnaires included Demographic Information (completed by both parents), the Bayley Social-Emotional Scale (completed by the primary care giver), the Parent-Stress Index – Short Form (completed by father only) and the Parent Interaction Scale (completed by both parents).

The study also required the child to participate in two on-site sessions: a developmental session and a play session. The sessions took place at the University of Newcastle and were arranged in an order that suited the family's schedules. To reduce the effect of extraneous variables such as developmental maturation, the appointments were scheduled within 2-weeks of each other (Shaffer & Kipp, 2013).

Developmental session. The child was accompanied to the developmental session by either their father or mother. During the developmental session, the Bayley Scales of Infant and Toddler Development 3rd edition (Bayley, 2006) were administered to the child by a trained researcher. The Bayley took approximately two hours to complete and was administered in the following order: Cognitive scale, Motor items, and Language scale. Following test administration, the researcher calculated the child's assessment scores across each scale to determine their overall developmental quotient.

Play session. The play session was attended by the father and child, the mother's attendance was not required. During the play session, fathers were instructed to engage in play with their child as they would at home across four seven-minute play paradigms. The play paradigms included: two-bag play, risky play, physical play (i.e., rough-and-tumble play), and free-play. The play paradigms were counterbalanced to control for order effects (Campbell & Stanley, 2015). For the purpose of this study, only the physical play (i.e., rough-and-tumble) paradigm was analysed. In the physical play session, fathers were asked to "do whatever they normally would do when playing rough-and-tumble play at home with their child".

Measures

Demographic characteristics. Demographic information was collected from both parents, and included father's age, mother's age, marital status, postcode, and family income (see Appendix A). Additionally, information pertaining to child characteristics (i.e., age, gender, ethnicity, birth order) was also gathered.

Rough-and-tumble play quality. The father-child rough-and-tumble play quality (RTP-Q) was assessed using the RTP-Q scale, an observational measure (Fletcher, St George, & Freeman, 2013). The scale, which consists of 16 items, assesses whether father-child verbal and non-verbal interactions comprise of constructs characteristic of RTP. Specifically, the items assess the interaction's level of warmth, control, dominance, sensitivity, physical engagement and playfulness on a five-point Likert scale ranging from 'poor' to 'excellent'. The maximum score that could be achieved for RTP quality was 80. The measure has demonstrated convergent validity between RTP quality and fathers' report of their positive parenting involvement ($r = 0.41$, $p = 0.04$), and has high internal consistency (Cronbach's $\alpha = 0.95$; Fletcher, St George, & Freeman, 2013).

Rough-and-tumble play frequency. Father-child RTP frequency (RTP-F) was assessed using the Parent Involvement Scale (PIS). The PIS is a 13-item self-report questionnaire that was completed by both the mother and father. It uses a four-point Likert scale which ranged from 'Not at All' to 'Everyday' to assess how often each parent engages in activities with their child. One question, 'How often do you play rough-and-tumble with your child each week?' was used to calculate RTP-F.

Father stress. Parent stress was assessed using the Parenting Stress Index Third Edition – Short Form (PSI-SF; Abidin, 1990). The PSI-SF is a 36-item self-report questionnaire that was completed by the father only. It used a five-point Likert Scale ranging from 'Strongly Agree' to 'Strongly Disagree'. Items within the PSI-SF were combined to form three subscales: Parental Distress, Difficult Child and Dysfunctional Child-Parent Interactions. The Parental Distress (PD) scale assessed the parents' perceptions of their own behaviour in the context of parenting demands (e.g., parenting competence). The Difficult Child (DC) scale measured the parent's view of the child's temperament, demandingness and compliance. The Dysfunctional Child-Parent Interactions (P-CDI) scale assessed the extent to which the parent felt satisfied with their child, and their interactions with them. An assessment of Overall Parenting Stress (OPS)

was ascertained by combining the scores from the PD, DC and P-CDI scales. Finally, a fourth subscale, Defensive Responding (DR) assessed parent response bias. The PSI-SF is considered to have robust psychometric properties, with previous studies reported good internal consistency ($\alpha = .85$) and strong content and construct validity (Abidin 1990).

Child development. Child developmental skills were assessed using the Bayley Scales of Infant Development, 3rd edition (Bayley, 2006). The assessment is designed for children between the ages of 1 and 42 months and measures cognitive, language, and motor skill development. The Cognitive scale is comprised largely of nonverbal activities. The language scale is composed of two subtests: Receptive Communication, and Expressive Communication subtests. The motor scale is composed of Fine Motor and Gross Motor subtests. Additionally, the child's primary carer also completed a self-report measure (280 items) to assess the child's Social-Emotional abilities. The primary caregiver was defined as the parent who provided the greatest hours of care and had the largest number of interactions with the child. The Social-Emotional scale largely assessed the child's acquisition of social and emotional milestones, including the capacity to understand and employ a range of emotional experiences and expressions (Weiss, Oakland, & Aylward, 2010). The Bayley is considered to be one of the most recognised assessments of infant development (Connolly, 2012). It is reported to have strong psychometric properties, including good test-retest reliability ($r = .67$; Bayley, 2006) and predictive validity ($r = .83$; Bode, D'Eugenio, Mettelman, & Gross, 2014).

Design and Analysis

Coding of RTP quality. The quality of father-child rough-and-tumble play interactions was assessed using the 'Rough and Tumble Play – Quality' scale (Fletcher, St George, & Freeman, 2013). Two independent assessors (JG and SW) coded the quality of the play observations. Prior to completing RTP quality coding, regular meetings and training were conducted until both coders reach a high level of agreement and were competent in play coding. One researcher (JSG) coded all of the recorded play sessions, with 30% of recordings being randomly selected for coding by a second researcher (SW) to establish interrater reliability. For the RTP scores that were scored by two coders, the average of the ratings were calculated and used in the analysis. There was a high reliability between coders (ICC= 0.96) and a high reliability for the scale ($\alpha = 0.96$).

Analysis. The current study utilised a correlational design. The variables of interest were father characteristics (i.e., paternal age, employment, income and education), father stress (PSI-F), maternal and paternal rated RTP frequency, child characteristics (i.e., child age, gender), child development scores and RTP-Q. Descriptive statistics were calculated. Correlational analyses and multiple linear regressions were completed to assess the relationships between RTP-Q and father and child variables. A criterion for statistical significance of $p \leq 0.05$ was used. Analyses were undertaken using IBM Statistical Package for the Social Sciences (SPSS) Version 24.0 (IBM Corporation., 2016).

Results

Descriptive Statistics

Demographic information revealed that fathers were aged between 24 and 49 years old ($M = 34.16$, $SD = 4.92$) and mostly married (81%; Table 1). A high proportion of fathers were employed (94%), working an average of 36 hours per week ($SD = 9.89$), with more than half earning an annual income over AUD \$100,000. Fathers were generally well educated, with 58% of fathers reporting that they had completed tertiary education and an additional 19% indicating that they had completed TAFE qualifications. With respect to caregiver responsibilities, father reported that they mostly had a smaller but substantial role (59%). Only 3% of fathers reported that they were the primary carer for the toddler, the remainder reported that care was shared equally (31%). Toddlers mean age was 20.05 months ($SD = 3.19$), and most attended day care (65%).

[insert table 1]

Most fathers reported that they engaged in high frequencies of RTP with their child, with 43% of fathers reporting that they engaged in RTP ‘everyday’ with their child (Table 4). Of note, only 34% of mothers reported that fathers played RTP ‘everyday’. Despite variation between the fathers’ and mothers’ reports about RTP frequencies, the difference in their reports was not found to be statistically significant ($\chi^2 = 10.19$, $p = .11$). Generally, father stress levels were reported to be within a clinically typical range (67%). With respect to child development outcomes, there was a normal distribution of scores across each developmental domain with most children falling within the ‘average’ range. To determine whether there

were any differences in child gender across the measures, independent samples t-test were completed.

There were no significant differences between gender on any measure ($p > .05$).

[insert table 4]

Correlational Analyses

Correlational analyses were completed to assess the relationship between RTP quality and father characteristics, including age, education, employment, income, RTP frequency, father stress, father behaviour; and child characteristics, including age, gender) and development (Tables 5).

Father characteristics. There were no significant correlations between RTP quality and father age ($r = .02$, $p = .99$), father level of education ($r = -.20$, $p = .12$), income ($r = .01$, $p = .94$) and fathers' weekly work hours ($r = -.19$, $p = .12$).

The analysis found that the relationship between RTP quality and RTP frequency differed depending on who reported frequency. Whilst no significant correlation was found between father reported father-child RTP frequency and RTP quality ($r = .17$, $p = .17$), a moderate and significant relationship was found between mother reported father-child RTP frequency and RTP quality ($r = .28$, $p = .02$).

No significant correlations were identified between RTP quality and fathers' overall parenting stress ($r = .11$, $p = .37$).

Child characteristics. There was a significant moderate positive correlation between RTP quality and child age ($r = .30$, $p = 0.01$, two tailed), whereby as age increased so too did RTP quality. There was no relationship between RTP quality and the remaining child demographic characteristics (i.e., gender, birth order and attendance at day care), $p < .05$.

With respect to child developmental characteristics, there was a significant positive correlation between RTP quality and child social-emotional development ($r = .28$, $p = .02$), indicating that when children were more socially-emotionally mature RTP quality was higher. There was no relationship between RTP quality and the remaining child development characteristics (i.e., cognition, motor skills and language), $p < .05$.

[insert table 3]

Multiple Linear Regression

A multiple linear regression analysis was completed to assess whether father and child characteristics predicted the quality of RTP. The multiple linear regression model included the independent variables that were previously identified as being significantly correlated with RTP quality (i.e., mothers' report of father RTP-F, child age and child social-emotional development.). The results of the multiple linear regression indicated that the three predictors explained 25% of the variance in RTP quality ($R^2 = .255$, $F(3,65) = 6.84$, $p = .46$). It was found that father RTP-F, as reported by mothers, significantly predicted the quality of RTP quality ($\beta = .30$, $p < .01$), as did child age ($\beta = .31$, $p < .01$) and child social-emotional development ($\beta = .26$, $p < .05$).

[insert table 4]

Discussion

Previous studies suggest that father characteristics such as level of education and age, more frequent RTP, stress, gender and age of the child have an impact on quality of RTP in the preschool years. The current work extends this work by exploring these factors in a cohort of toddlers. We demonstrated that frequency of RTP as well as the age of the child and their social-emotional development were significantly associated with quality of RTP in father-toddler dyads. However, contrary to expectations, no relationships between the quality of RTP and father education, father income, father stress, child gender, and child cognitive, motor and language development were identified.

The finding that the frequency of father-child RTP was associated with quality was consistent with previous studies of father-child RTP in older children, with father-child dyads who engage in more RTP having higher quality interactions (Cielinski, Vaughn, Seifer, & Contreras, 1995; Flanders, Leo, Paquette, Pihl, & Séguin, 2009). Whilst we were not able to look at factors that might influence this relationship, research suggests that paternal personality, temperament and parenting style might moderate the association between RTP frequency and RTP quality (Kerns & Barth, 1995; Marsiglio, Day, & Lamb., 2000; Stright & Bales, 2003). Therefore, future research might investigate the effect of father personality and temperament more specifically, on the quality of RTP.

Although the hypothesis regarding the relationship between RTP frequency and RTP quality was met, it was not predicted that there would be a discrepancy in how mothers and fathers rated father-child

RTP frequency. Whilst this finding was unexpected, it does make sense in the context of known limitations of using self-report measures to assess parent-child interactions (Cabrera, Fitzgerald, Bradley, & Roggman, 2014; Wical & Doherty, 2005). Specifically, it is widely recognised that parents will either underreport or overreport the time they spend completing an activity with their child (Hook & Chalasani, 2008). One study reported that mothers and fathers consistently underreported or overreported their time spent completing an activity with their child by 25 – 50% (Marini & Shelton, 1993). One explanation for fathers overreporting the frequency of RTP in the current study might be that as RTP, and physical play more generally, is a father's primary and most common type of interaction with their child, this may skew their perception on the frequency of the interaction. Specifically, they may be more likely to overestimate the amount of time that they engage in the RTP because it is more common for them to be doing this activity, than not. Issues of recall may have also confounded the father's reports (Furr, 2017). Therefore, future studies would benefit from collecting information from a range of informants (e.g., fathers and mother), as well as employ real-time recording measures to foster a more balanced and objective measurement of father reports of RTP frequency (Hook & Chalasani, 2008; Wical & Doherty, 2005).

Contrary to expectations, father characteristics such as age, education and employment were not found to be significantly related to RTP quality. These findings are not consistent with broader literature on the effect of father characteristics on play quality, and more specifically RTP play (Grossman, Pollack, & Golding, 1988; Pleck, 2010; Yeung et al., 2001). The studies investigating the relationship between RTP quality and father characteristics are few, therefore it is possible that there is no association between these variables. However, it is more likely that this study's homogenous sample better accounts for our findings. Specifically, there was reduced variability in the families who participated in this study with mostly middle-class, well-educated and high-income earning participants. Singh and Masuka (2014) suggests that reduced variability in a sample will confound investigations into variables such as father characteristics due to reduced power to detect effects. These findings suggest that further research should be completed into the effect of father characteristics on RTP quality in toddlers including a more socio-economic and culturally diverse sample of families (Sandelowski, 1995; Singh & Masuka, 2014).

The current study did not find a significant relationship between father stress and the quality of RTP. This finding was inconsistent with the broader literature on parent-child interactions that suggests that

parents who experience higher levels of stress are less engaged and less responsive with their child (Deater-Deckard, 2017). The findings were also inconsistent with the limited number of studies that have investigated the role of father stress on father-child interactions, including physical interactions such as RTP (Cabrera et al., 2014; Darke & Goldberg, 1994). One explanation for these inconsistent findings might be that there was not enough variation or severity of stress amongst the sample of fathers (Singh & Masuka, 2014). Of the fathers who participated in the study, most were found to have total stress levels within a 'clinically normal' range, meaning that if there is an effect between father stress and quality of play, the variability within the current sample was not great enough to detect a relationship. It is also important to consider that clinical variability in father stress scores may have been a result of response bias, whereby fathers were motivated to manage their perception as a father and underreport their distress (Krumpal, 2013). Given that there is limited research into the role of father stress on father-child interactions, including RTP, future research should aim to develop our knowledge and understanding of father stress in relation to child interaction and development.

Analysis revealed that there was a significant relationship between child age and RTP quality whereby the quality of RTP interactions was greater when children were older. This finding was both expected, and consistent with the existing literature which suggests that older children engage in higher quality physical play, including RTP. As a child matures, they develop greater effortful control and motor skills increasing their ability to engage in more vigorous and intensive play, and in terms of how RTP is scored, this will inherently contribute to and facilitate greater quality play (Payne & Isaacs, 2017).

Consistent with earlier research (Paquette et al., 2003; Shannon, Tamis-LeMonda, London, & Cabrera, 2002), the current study found that children who had higher levels of social-emotional maturity had higher quality RTP interactions. Often, literature describes the relationship between RTP and child developmental outcomes in unidirectional or causal terms, whereby, one leads to the other. However, it could be argued that the effect of parent interaction on child development is transactional, rather than unidirectional (Cabrera, Shannon, & Tamis-LeMonda, 2007; McBride, Schoppe, & Rane, 2002).

Considering the relationship in terms of a transaction model might help to further explain the results of this study. Specifically, it could be posited that children who are more socially emotionally mature may experience higher quality RTP with their fathers, because the features which determine the quality of

rough-and-tumble play, such as turn taking and winning and losing are behaviours that are more developed in children with greater social-emotional skills. Specifically, these children may be able to elicit more responsive behaviours from fathers and provide fathers with clearer feedback during play (Freeman, Newland & Coyl, 2010; Dumont & Paquette, 2013), which in turn would promote greater quality RTP between the father and child (Ginsburg, 2007).

Although the current study found that child social-emotional development was significant in predicting the quality of RTP, neither motor skills, cognitive capacity nor language ability were associated with RTP quality. It is possible that the discrepancy in the relationship between social-emotional development and the other child developmental outcomes on RTP quality is attributed to the assessment method, with the cognitive, language and motor variables assessed objectively by a researcher, compared to parent ratings of social-emotional development (Stone, Bachrach, Jobe, Kurtzman, & Cain, 1999). Whilst using a combination of subjective and objective assessment was a strength of this research, it is important to consider the implications of using subjective assessments (Stone et al., 1999). For example, it is possible that parents overreported or underreported on child behaviours and this is what accounts for variable effects of child developmental outcomes on RTP quality. Future studies might employ measures that can collectively assess both objective and subjective perspectives for each measure to reduce the effect of assessment method. Another possibility for the discrepancy in the relationship between child developmental outcomes on RTP quality could be that child developmental domains (i.e. cognition, motor, language, social-emotional) do not equally contribute to the construct of play quality. Specifically, parent-child play is largely influenced by social and emotional characteristics such as the attachment relationship, warmth, and emotional attunement (Booth & Jernberg, 2009). Some aspects of play quality are based upon other developmental domains, such as motor skills (i.e. the physical nature of the play). Though overall, the quality of play is often defined by the fathers ability to demonstrate warmth, playfulness, positive emotion, an awareness of the need to let the child win and lose sometimes and dominance swapping (i.e. social-emotional characteristics; Paquette, 2004; Fletcher, St George, & Freeman, 2013), and this can have a synergetic effect which can promote the social and emotional development of a child. This might therefore explain why higher quality RTP was related with higher scores of social-emotional abilities, but not necessarily higher motor skills.

The current study did not find a relationship between child gender and RTP quality. In contrast to our initial hypothesis, the findings suggest that the quality of RTP was similar between father-son and father-daughter dyads. This result is inconsistent with literature that reports that there is difference in how fathers engage in physical play with their sons and daughters (Lindsey, Mize, & Pettit, 1997; Manlove & Vernon-Feagans, 2002; McBride, Schoppe, & Rane, 2002). It is possible that child age may have confounded the relationship between child gender and quality of play. Specifically, some research suggests that the differences in parent-child play based upon child gender is not salient until children enter the school years (Roopnarine & Davidson, 2015). This might suggest that gender differences in father-child RTP play were not found because the play-based gender differences were not detectable due to the significantly younger age of this study's cohort. In addition to child age, it is also possible that the study environment and instructions confounded the type and quality of play that fathers engaged in with their child. The unfamiliar setting and the video recording may have affected participant behaviours, for instance individuals are more likely to engage in behaviours and actions that they perceive will be 'desirable' in laboratory settings (Gardner, 2000; McCambridge, Witton, & Elbourne, 2014). Known as the Hawthorne effect, it is possible that the type and quality of father-son and father-daughter play 'changed' or 'differed' from normal because fathers were mindful that they were being observed (McCambridge, Witton, & Elbourne, 2014). Further, instructions to engage in physical play may have led to fathers engaging in specific behaviours that they otherwise would not have participated in (Kwon, Bingham, Lewsader, Jeon, & Elicker, 2013). In the future, studies might attempt to investigate RTP quality by observing these play interactions in a more naturalistic setting (Gardner, 2000).

Implications

This exploratory study contributes to a growing body of literature that will help researchers and clinicians better understand father-child play interactions. The current study informs us that in a non-clinical sample there is a relationship between the frequency of RTP, child age and social-emotional development and quality of rough-and-tumble play. The study also shows us that RTP quality differs amongst fathers and children, and that in the future, we might look to engage fathers and support the use of physical play, such as RTP, as a means of fostering greater child developmental outcomes. For example, literature has suggested that fathers are more likely to initiate nurturing behaviours if they believe that such

behaviours will make a significant difference to the child (Conger, Conger, & Martin, 2010). Therefore, these findings could be employed to educate fathers on the importance of RTP for child development, and the characteristics which are likely going to increase the quality of such play interactions.

This study may also have broader clinical implications for child mental health and parenting settings. Specifically, these findings and others like them highlight the importance of involving fathers, just as much as mothers when engaging with and supporting children. Further, given the existing evidence of the positive impact of physical play, including RTP, on child development (i.e. social-emotional development) and parent-child relationships, and the inclination of fathers to engage in this type of play, this study contributes to the growing body of literature which supports greater inclusivity of fathers when addressing issues pertaining to child and family wellbeing.

Limitations and Future Directions

Whilst the current study provides evidence of an association between father and child characteristics, and the quality of RTP, it is important to consider these findings within the context of the study's limitations. Foremost, it is possible that the measure that was employed in the study to assess the quality of RTP was not the most appropriate tool to use. Specifically, the RTP-Q measure was validated with a population of children who were aged between 42 to 56 months (Fletcher, St George, & Freeman, 2013). Given that our population of children were aged between 18 to 24 months, it is possible that there is a significant developmental difference between these groups, as also indicated by the age effect. It is plausible that the nature of the RTP that was engaged in by the older cohort of children in Fletcher and colleagues (2013) study differs to the type of RTP that was engaged in by our younger cohort of children. This idea is supported by Tannock (2008) who reported that due to less developed motor skills and ability, younger children engage in RTP that is less sophisticated and defined than older children who have the capacity to participate in more complex forms of RTP. This suggests that the RTP-Q measure may not have the sensitivity to assess the quality of play within a younger population. Specifically, the measure may not have been able to capture subtle but important nuances that are precursors to the more mature behaviour observed in father RTP with older children, Future studies should validate the measure for assessing RTP quality in this age group or adapt the current measure to assess age-appropriate RTP displays and behaviours.

Although this study found an association between child social-emotional development and father-child RTP quality, these findings should be interpreted with caution due to the way in which the outcome was assessed. Specifically, the study required the primary caregiver (i.e. either the mother or the father) to complete the social-emotional development questionnaire. It is possible that there was a difference in the way that mothers as primary caregivers may rate child social-emotional development, compared to fathers who were primary caregivers (Gardener, 2000). Future studies might designate either one parent (i.e. either mother or father) as the participant who completes the questionnaire, or have both parents complete a measure of social-emotional development and use the mean score.

It is also important to consider the effect of participant-bias in the study. This study was quite time intensive, whereby father-child dyads were required to attend two on-site sessions in addition to completing a range of questionnaires. With limited attrition in the study, it could be argued that the sample were highly motivated and willing to invest their time and effort into the research. If so, it is possible that those who participated in the study were individuals with limited psychological distress, including father stress, and generally high-quality child-parent interactions, and in turn, this may have led to a positive skew in the results (Privitera, 2015). In the future, additional recruitment strategies and methods should be employed to increase the generalisability of the findings.

Future studies are encouraged to explore the impact of father personality, parenting and attachment style; as well as child temperament, sensory profile, and executive functioning in relation to RTP quality, as research has suggested that these variables are related to play interactions more generally (Abidin, 1992; Roggman et al., 2002). Further research might also utilise more complex statistical analysis and modelling to determine whether several variables moderate or mediate RTP quality. For example, statistical exploration of the transactional relationship between parent-child on child outcomes over time may be helpful in developing theoretical understandings regarding how the parent and the child adapt to developmental changes, and the developmental progression in the complexity of the play.

Conclusion

Fathers are spending more time at home with their children (Dotti, Sani, & Treas, 2016), yet relatively little is known about what influence the quality of play with their children. As a response to changes in family dynamics and societal perceptions regarding fathers within the home, it is important to

investigate the influence of father-child interactions on child development. Research indicates that the one of the most common ways that fathers engage with their child is through physical play interactions, such as RTP (Paquette, 2004). Physical play interactions are critical for a child's wellbeing and development and have been associated with fostering a child's social, emotional, behavioural, cognitive and motor development (Flanders et al., 2010; Ramchandi et al., 2013). Therefore, this study sought to examine the characteristics of fathers and toddlers that contributed to the quality of RTP. This study suggests that the quality of RTP is related to how frequently fathers engage in RTP, and the age and social-emotional maturity of the child. It also shows that RTP quality differs amongst fathers, and that in the future, we might look to engage fathers and support the use of father-child physical play, such as RTP, as a means of fostering greater child developmental outcomes.

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Table 1

Demographic characteristics of fathers (N=64)

Participant characteristics	Father		
	n (%)	Minimum	Max
Age in years (mean (SD))	34.2 (4.93)	24	49
Employment Status ^b			
Employed	60 (93.8)	-	-
Looking for work	0	-	-
Not employed	2 (3.1)	-	-
Mean hours of paid work per week (mean (SD)) ^c	36.39 (9.89)	0	50
Marital Status ^a			
Married	52 (81.3)	-	-
Defacto	12 (18.8)	-	-
Divorced	0	-	-
Annual Income ^c			
\$0 - \$25,000	1 (1.6)	-	-
\$25,001 - \$50,000	5 (7.8)	-	-
\$50,001 - \$75,000	5 (7.8)	-	-
\$75,001 - \$100,000	20 (31.3)	-	-
\$100,001 - \$125,000	7 (10.69)	-	-
\$125,001 +	25 (39.1)	-	-
Educational attainment ^c			
Year 10	1 (1.6)	-	-
Year 12	4 (6.3)	-	-
Trade Certificate	9 (14.1)	-	-
TAFE	12 (18.8)	-	-
University	37 (57.8)	-	-
Responsibility for care of child ^{a,c}			
Primary carer	3 (4.7)	-	-
Smaller but still substantial role	38 (59.4)	-	-
Care shared equally	20 (31.3)	-	-
Minimal	2 (3.1)	-	-

^a Not assessed in mothers, ^b 2 missing participants (father), ^c 1 participant missing (father)

Table 2

Demographic characteristics of mothers (N=64)

Participant characteristics	Mother		
	n (%)	Minimum	Max
Age in years (mean (SD))	32.72 (4.47)	23	41
Employment Status			
Employed	42 (65.6)	-	-
Looking for work	2 (3.1)	-	-
Not employed	20 (31.3)	-	-
Mean hours of paid work per week (mean (SD))	15.18 (13.32)	0	45
Annual Income ^c			
\$0 - \$25,000	1 (1.6)	-	-
\$25,001 - \$50,000	6 (9.4)	-	-
\$50,001 - \$75,000	3 (4.7)	-	-
\$75,001 - \$100,000	21 (32.8)	-	-
\$100,001 - \$125,000	10 (15.6)	-	-
\$125,001 +	23 (35.9)	-	-
Educational attainment			
Year 10	-	-	-
Year 12	5 (7.8)	-	-
Trade Certificate	2 (3.1)	-	-
TAFE	13 (20.3)	-	-
University	44 (68.8)	-	-

Table 3

Demographic characteristics of children (N=64)

Participant characteristics	Child
	n (%)
Gender	
Male	29 (45.3)
Female	35 (54.7)
Age in months (mean (SD))	20.05 (3.19)
Ethnicity	
Caucasian/Australian	33 (51.6)
Indigenous Australia	1 (1.6)
Other Ethnicity	6 (9.3)
No Answer	24 (37.5)
Birth order of Child	
First born	49 (76.6)
Second born	11 (17.2)
Third born or later	4 (6.3)
Attends Daycare ^a 1 missing	
Yes	21 (32.8)
No	42 (65.6)

^a 1 missing participant (child)

Table 4

Descriptive statistics for RTPQ, RTP-F, father stress and child development (N=64)

Participant characteristics	Mean	Minimum	Maximum
Rough-and-tumble play quality			
RTP-Q (SD)	56.23 (12.05)	32.00	80.00
Rough-and-tumble play frequency father report (n (%))			
1 – 3 times a week	8 (12.5)	-	-
4 – 6 times a week	28 (43.8)	-	-
Everyday	28 (43.8)	-	-
Rough-and-tumble play frequency mother report (n (%))			
None	2 (3.1)	-	-
1 – 3 times a week	17 (26.6)	-	-
4 – 6 times a week	23 (35.9)	-	-
Everyday	22 (34.4)	-	-
Parent Stress Index			
Parental Distress Scale (mean (SD))	2.31 (7.25)	13.00	44.00
Difficult Child Scale (mean (SD))	26.37 (5.31)	17.00	42.00
Child Dysfunctional Scale (mean (SD))	20.40 (4.34)	14.00	31.00
Defensive Responding Scale (mean (SD))	15.71 (4.62)	7.00	30.00
Total Stress Scale (mean (SD))	73.09 (13.79)	46.00	101.00
Bayley developmental scales of infant development composite scores			
Cognitive Scale (mean (SD))	112.96 (14.27)	77.00	145.00
Total Language Scale (mean (SD))	115.64 (13.44)	77.00	150.00
Total Motor Scale (mean (SD))	109.94 (11.19)	79.00	133.00
Social-Emotional Scale (mean (SD))	107.11 (15.55)	75.00	145.00

Table 5

Pearson correlations between RTP-Q scores and father characteristics and child development

Demographics	RTP-Q	
	<i>r</i>	p
Father		
Age	.02	.99
Level of Education	-.20	.12
Employment Status	.092	.48
Hours of Work Each Week	-.19	.12
Income	.01	.94
Child Care Responsibility	-.16	.21
RTP-F		
RTP-F father report	.171	.18
RTP-F mother report	.278*	.02
Parent Stress Index		
Parental Distress	.236	.06
Difficult Child	.020	.87
Parent-Child Dysfunction	-.056	.66
Overall Parenting Stress	.147	.25
Defensive Responding	.114	.37
Child		
Gender	.09	.49
Age	.30*	.01
Birth Order	.07	.55
Attendance at Day Care	.12	.35
Bayley Developmental Scales		
Cognitive	-.014	.91
Motor	.000	.99
Language	-.001	.99
Social-Emotional Behaviour	.282*	.02

Note. RTP-Q = Rough-and-tumble Play Quality, RTP-F = Rough-and-tumble Play Frequency* $p < .05$. ** $p < .01$.

Table 6

Multiple linear regression model predicting RTP quality using RTP-F, child age, child social-emotional development as independent variables

	B	SE(B)	β	p
Constant	8.11	11.00	-	.460
RTP-F	4.26	1.56	.306	.008**
Child Age	1.18	.423	.313	.007**
Child Social-Emotional Development	2.64	1.11	.265	.021**
R ²	.255			
F	6.84			
df	3			

* $p < .05$. ** $p < .01$.

Appendices

Appendix A

Demographic Questionnaire

1. What was your age last birthday
2. Are you of Aboriginal or Torres Strait Island origin?
 - ☐ Yes
 - ☐ No
3. Your current marital status ...
 - ☐ Married
 - ☐ Divorced
 - ☐ DeFacto
4. Your highest level of education completed ...
 - ☐ Primary
 - ☐ Secondary to Year 10
 - ☐ Secondary to Year 12
 - ☐ Tertiary (Uni or Institutes)
 - ☐ Never attended school
5. Your current employment status ...
 - ☐ Employed, including self-employed
 - ☐ Unemployed – actively looking for a job
 - ☐ Not in labour force (e.g., stay-at-home parent; volunteer; student; retired; not looking for a job) please state: _____
6. Your current family income before deductions
 - ☐ \$0 - \$25,000
 - ☐ \$25,001 - \$50,000
 - ☐ \$50,001 - \$110,000
 - ☐ \$110,001 and over
7. How many paid working hours do you undertake each week? _____ hours per week
8. What is the gender of the child who is participating in this research?
 - ☐ Male
 - ☐ Female
9. What is the birth order of this child (e.g., first born, second born, etc.)
 - ☐ First born
 - ☐ Second
 - ☐ Other, please state _____
10. What is the birthdate of this child? ____/____/____
11. Are you willing to be contacted again about further research with parents and children?
 - ☐ Yes
 - ☐ No

Appendix B

Parent Interaction Scale Questionnaire

Thinking about the child involved in this study...

In a typical week, how often do **you** do these activities with your child? AND

In a typical week, how often does **your partner** do these activities with your child?

			Not at all	1-3 times a week	4-6 times a week	Every day
1	Get your child ready for bed or put him/her to bed	Me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		My partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Play physically active games with balls or other objects	Me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		My partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Give your child a bath	Me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		My partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Play 'rough-and-tumble'	Me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		My partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Eat a meal with your child	Me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		My partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Laugh, joke or tease with your child	Me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		My partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Read to your child	Me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		My partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Take your child to the park/for a walk/in the stroller	Me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		My partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Hug and cuddle your child	Me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		My partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Play with any sort of toys (blocks, cars, dolls, etc)	Me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		My partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Tell stories to your child	Me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		My partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Share screen-time	Me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		My partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Play tickles, monsters, surprise, or chasey	Me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		My partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix C

Guidelines for Manuscript



Journal of Child and Family Studies

General

In general, the journal follows the recommendations of the 2010 Publication Manual of the American Psychological Association (Sixth Edition), and it is suggested that contributors refer to this publication. The research described in the manuscripts should be consistent with generally accepted standards of ethical practice. The anonymity of subjects and participants must be protected and identifying information omitted from the manuscript.

Manuscript Submission

- The Journal uses Editorial Manager™ as its submission and peer review tracking system. All authors are required to register as a new user with Editorial Manager the first time they login in to the system. Straightforward login, registration procedures and step-by-step instructions for submitting manuscripts can be found on the website. Authors can use the Editorial Manager to track the review of their manuscripts in real time.
- All authors should submit their manuscripts online. Manuscript submissions to the Journal should be prepared electronically and submitted in a standard word processing format. Microsoft Word® is preferred. Electronic submission substantially reduces the editorial processing and reviewing times, and shortens overall publication times. Please connect directly to the site: <http://jcfs.edmgr.com> and upload all of your manuscript files following the instructions given on the screen.

Suggested Reviewers

- Authors of research and review papers, excluding editorial and book review submissions, are allowed to provide the names and contact information for, maximum, 4 to 6 possible reviewers of their paper. When uploading a paper to the Editorial Manager site, authors must provide complete contact information for each recommended reviewer, along with a specific reason for your suggestion in the comments box for each person. The journal will consider reviewers recommended by the authors only if the reviewers' institutional email is provided. A minimum of two suggested reviewers should be from a university or research institute in the United States. You may not suggest the Editor or Associate Editors of the journal as potential reviewers. Although there is no guarantee that the editorial office will use your suggested reviewers, your help is appreciated and may speed up the selection of appropriate reviewers.
- Authors should note that it is inappropriate to list as preferred reviewers researchers from the same institution as any of the authors, collaborators and co-authors from the past five years as well as anyone whose relationship with one of the authors may present a conflict of interest. The journal will not tolerate this practice and reserves the right to reject submissions on this basis.

Publication Policies

- The Journal considers manuscripts for publication with the understanding that they represent original material and have not been published, submitted or accepted elsewhere, either in whole or in any substantial part. Each manuscript should report sufficient new data that makes a significant contribution to its field of research; thus, the submission of small amounts of data from a larger study or research project for divided publications would be inappropriate. A statement transferring copyright from the authors (or their employers, if they hold the copyright) to Springer Science+Business Media, Inc. will be required before the manuscript can be accepted for publication. Such a written transfer of copyright, which previously was assumed to be implicit in the act of submitting a manuscript, is

necessary under the U.S. Copyright Law in order for the publisher to carry through the dissemination of research results and reviews as widely and effectively as possible.

- Authors can expect a decision usually within 8 to 10 weeks. Reviewers comments are sent with the decision. Accepted papers are subject to editorial revisions and copyediting. However, the contents of the paper remain the responsibility of the author.

Double-Blind Peer Review

- All submissions are subject to double-blind peer review. In general, experimental/research studies are judged in terms of the following criteria: originality, contribution to the existing research literature, methodological soundness, and readability.
- When you are ready to submit a manuscript to JCFS, please be sure to upload these 2 separate files to the Editorial Manager site to ensure timely processing and review of your paper:

Manuscript Style

- All manuscripts should be formatted to print out double-spaced at standard 8" x 11" paper dimensions, using a 10 pt. font size and a default typeface (recommended fonts are Times, Times New Roman, Calibri and Arial). **Set all margins at one inch, and do not justify the right margin. Double-space the entire manuscript, including title page, abstract, list of references, tables, and figure captions.** After the title page, number pages consecutively throughout including the reference pages, tables, and figure legends. **The average article length is approximately 30 manuscript pages.** For manuscripts exceeding the standard 30 pages, authors should contact the Editor in Chief, Nirbhay N. Singh directly at nirbsingh52@aol.com.
- The Journal encourages the publication of research that is virtually jargon-free and easy to read. Thus, a personalized manuscript, written in active tense, is preferred. For example, "This study examined . . ." could be stated as, "We examined . . ." The Journal encourages a conversational rather than an impersonal tone in the manuscripts. Hypotheses should be written as a part of the last paragraph of the Introduction and not in bullet form. All reference to the study being reported should be consolidated in the last (or, if necessary, the last and penultimate) paragraph of the Introduction and not scattered throughout the introductory section.

Title Page

- A title page is to be provided and should include: (1) the title (maximum of 15 words); (2) full names of the authors (without degree), with a bullet between the names of the authors; (3) brief running head; and, at the bottom of the title page, (4) the corresponding author's initials and last name (without degree), affiliation, mailing address, and e-mail address. The initials and last name of all authors should be listed as well. All authors from the same institution should be listed together, with a bullet separating the names. For all, but the corresponding author, list the affiliation, city and state only.

Abstract

- The abstract should be between 200 and 250 words. It should be concise and complete in itself without reference to the body of the paper. In addition to a general statement about the field of research as the first sentence, abstracts of experimental/research papers should contain a brief summary of the paper's purpose, method (design of the study, main outcome measures, and age range of subjects), results (major findings), and clinical significance. Abstracts of review papers should include a general statement about research area being reviewed as the first sentence, it should contain a brief summary of the review's purpose, method (data sources, study selection process), results (methods of data synthesis and key findings), and conclusions (summary statement of what is known, including potential applications and research needs). Do not use sub-headings and do not cite data or references in the abstract.
- Key Words - A list of 5 key words is to be provided directly below the abstract. Key words should express the precise content of the manuscript, as they are used for indexing purposes.

Text

- Text should begin on the second numbered page. Authors are advised to spell out all abbreviations (other than units of measure) the first time they are used. Do not use footnotes to the text. When using direct quotations from another publication, cite the page number for the quotation in the text, immediately after the quotation. When reporting statistically significant results, include the statistical test used, the value of the test statistic, degrees of freedom, and p values. In the discussion include an evaluation of implications (clinical, policy, training or otherwise) of the study when appropriate. Also, discuss limitations in study design or execution that may limit interpretation of the data and generalizability of the findings. Do not use any sub-headings in the Introduction or Discussion sections.

Footnotes

- No footnotes are to be used
- References Cited Within the Text
- Cite references in alphabetical order within the text.

References

- Consult the Publication Manual of the American Psychological Association, 6th Edition (Chapter 7) for formatting references. The style and punctuation of the references should conform to strict APA style – illustrated by the following examples:

Tables

- Tables follow the Reference section. Create tables using the table creation and editing feature of your word processing software (e.g., Word) instead of spreadsheet programs. Tables that are a single column are actually lists and should be included in the text as such. Number tables consecutively using Arabic numerals in order of appearance in the text. Cite each table in the text and note approximately where it should be placed. Type each table on a separate page with the title and legend included. Double-space the table and any footnotes to it. Set each separate entry in a single table cell. Do not use underlining. Properly align numbers, both horizontally and vertically. Use brief headings for columns. If abbreviations are necessary, define them in a key at the bottom of the table. Keep footnotes to a minimum; if necessary, use superscript letters to denote them.

Figures

- Figures follow the tables. Figures must be submitted in electronic form. Figures and illustrations (photographs, drawings, diagrams, and charts) are to be numbered in one consecutive series of Arabic numerals.

Appendix D
Human Ethics Approval

HUMAN RESEARCH ETHICS COMMITTEE



Notification of Expedited Approval

To Chief Investigator or Project Supervisor:	Doctor Jennifer St George
Cc Co-investigators / Research Students:	Miss Miranda Cashin Doctor Emily Freeman Miss Holly Rice Mr Michael Spark Marissa Black Doctor Linda Campbell Associate Professor Richard Fletcher Miss Shahna Mailey Miss Katie Rolfe Ms Gina Lemke Professor Shelly Lane Miss Laura Grennall Taylor Hadlow
Re Protocol:	Father-child physical play and pre-school children's self regulation: Fathers physical play project.
Date:	24-Apr-2017
Reference No:	H-2010-1300

Thank you for your **Variation** submission to the Human Research Ethics Committee (HREC) seeking approval in relation to a variation to the above protocol.

Variation to add Ms Taylor Hadlow as a Student Researcher.

Your submission was considered under **Administrative** review by the Ethics Administrator.

I am pleased to advise that the decision on your submission is **Approved** effective **24-Apr-2017**.

The full Committee will be asked to ratify this decision at its next scheduled meeting. A formal *Certificate of Approval* will be available upon request.

Associate Professor Helen Warren-Forward
Chair, Human Research Ethics Committee

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Appendix E

Consent Form Fathers

Dr Jennifer St George
 Family Action Centre
 The University of Newcastle
 Callaghan NSW 2308
 Ph: (02) 4921 6690
 jennifer.stgeorge@newcastle.edu.au



Consent Form for Fathers

Father-Child Play Project

Dr Jennifer St George, Dr Linda Campbell, Mr Michael Spark, and Miss Holly Rice

- I agree for myself and my child to participate in the above research project and give my consent freely.
- I understand that the project will be conducted as described in the Information Statement, a copy of which I have retained.
- I understand that we can withdraw from the project at any time and do not have to give any reason for withdrawing.
- I understand that my personal information will remain confidential to the researchers.
- I have had the opportunity to have questions answered to my satisfaction.

I consent to:

- | | |
|--|----------|
| • Playing a set of activities with my child, and for this to be videotaped | Yes / No |
| • My child being developmentally assessed | Yes / No |
| • Completing a set of questionnaires | Yes / No |

In addition, I consent to:

- | | |
|--|----------|
| • Recordings of these activities being used in presentations related to this research project | Yes / No |
| • Recordings of these activities being used for educational purposes | Yes / No |
| • To be contacted about further studies investigating my child's progress or follow-up studies | Yes / No |
| • For the information from the current study to be used in future studies by the research team | Yes / No |
| • To be contacted about future studies | Yes / No |
| • I would like to receive a copy of the research findings. | Yes / No |

Name: _____

Best contact details (e.g., mobile): _____

Additional contact details (e.g., email): _____

Signature: _____ Date: _____

Consent Form Mothers

Dr Jennifer St George
 Family Action Centre
 The University of Newcastle
 Callaghan NSW 2308
 Ph: (02) 4921 6690
 jennifer.stgeorge@newcastle.edu.au



Consent Form for Mothers

Father-Child Play Project

Dr Jennifer St George, Dr Linda Campbell, Mr Michael Spark, and Miss Holly Rice

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- I understand that the project will be conducted as described in the Information Statement, a copy of which I have retained.
- I understand that we can withdraw from the project at any time and do not have to give any reason for withdrawing.
- I understand that my personal information will remain confidential to the researchers.
- I have had the opportunity to have questions answered to my satisfaction.

I consent to:

- | | |
|--|----------|
| • My child playing a set of activities with their father and for this to be videotaped | Yes / No |
| • My child being developmentally assessed | Yes / No |
| • Completing a set of questionnaires | Yes / No |

In addition, I consent to:

- | | |
|--|----------|
| • Recordings of these activities being used in presentations related to this research project | Yes / No |
| • Recordings of these activities being used for educational purposes | Yes / No |
| • To be contacted about further studies investigating my child's progress or follow-up studies | Yes / No |
| • For the information from the current study to be used in future studies by the research team | Yes / No |
| • To be contacted about future studies | Yes / No |
| • I would like to receive a copy of the research findings. | Yes / No |

Name: _____

Best contact details (e.g., mobile): _____

Additional contact details (e.g., email): _____

Signature: _____ Date: _____

Appendix F

Flyer for Recruitment

THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

Research

PARENTS WE NEED YOUR HELP!

We are seeking two-parent families with a child aged 18 - 24 months!

The Fathers' Play Project
is an exciting new research project that explores
how dads' play helps children develop.

What would we do to participate?

1. Mum and Dad complete questionnaires online.
2. Dad take part in a dad-child play session
3. Mum or Dad bring child for a (free) developmental assessment.

For more information or to participate, please contact:

Jennifer StGeorge - 4921 6690

Dr Jennifer St George | Family Action Centre| University of
Newcastle | Callaghan NSW 2308 |Ph: 4921 6690
jennifer.stgeorge@newcastle.edu.au

Approval No. H-

Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone (02) 49216333, email Human-Ethics@newcastle.edu.au.

Appendix G

Participant Information Statement

Dr Jennifer StGeorge
Family Action Centre
The University of Newcastle
Callaghan NSW 2308
Ph: (02) 4921 6690

jennifer.stgeorge@newcastle.edu.au



Thanks for your interest!

At the University of Newcastle we are trying to find out more about how mums and dads interact with their children. We believe being a parent is an important role in any person's life. Some experiences may be similar for both parents; however, certain experiences may be different for dads.

We're asking for about 2 hours of your time. Unfortunately we cannot pay you to be a part of this study, however, we understand your time is precious and as a token of our appreciation all participants on completion of the study will be offered to enter a draw to win a \$150 Toys R Us or Bunnings gift card. This study has been approved by the Human Research Ethics Committee at the University of Newcastle.

Please find attached the 'information statement'. Should you wish to take part please read the following information carefully then sign and return the attached consent form in the reply paid envelope provided. Should you have any questions regarding the study please feel free to contact me.

Thanks for considering this research. We're confident that with your help we can make a positive difference for families in the future.

Jennifer St George

Dr Jennifer St George
Family Action Centre
The University of Newcastle
Callaghan NSW 2308
Ph: (02) 4921 6690
jennifer.stgeorge@newcastle.edu.au



Information Statement

Father-Child Play Project

We are developing an exciting new research project that explores how fathers' play with children contributes to child development and what things can affect these connections. Play with fathers may provide a particularly rich and safe environment for children to develop essential social, emotional and communication skills.

Who can participate?

Mothers and fathers who have a child aged 18 - 24 months. As this project involves physical play, it is not suitable for fathers or children with a physical disability or medical condition that is likely to limit their ability to participate.

What will happen?

If your family agrees to participate, you will be asked to:

- Complete online some questionnaires related to your experience of parenting (both mother and father)
- Complete online some questionnaires related to your current mood (father only)
- Allow us to carry out a developmental assessment of your child at the Uni clinic
- Allow us to videotape father and child during a single play session at the Uni clinic

Both in-clinic sessions can be arranged for a time that suits your family. At the first visit, we will ask your child to do a number of activities to see if your child's thinking, language, and moving skills are similar to children his or her own age. This will run for around 1.5 hours. Either parent can bring your child in for their developmental assessment.

The second visit is a father-child play session. It will run for less than an hour. During this session we will be videotaping father and child playing together. Only father and child need to attend this session.

The questionnaires and video will be added to the information given by all the other families helping us with this project. All information you give us will remain confidential to the research team. With your consent, we may also use snippets from the videos when we present the results from our study at conferences and in educational publications. We will not include names in these short clips and you do not have to consent to our using your videos in our presentations in order to participate in the study.

What choice do I have?

Participation in this research is entirely your choice. Only people who give their informed consent will be included in the project. If you decide not to take part in the research project, you will not be disadvantaged in any way. There are no costs associated with taking part in this research project. You may withdraw from the project at any time without giving a reason, and have the option of withdrawing any information you have given us at any time.

What are the benefits?

We cannot promise you any benefit from participating in this research, but you will help us learn more about fathers and families, which can lead to improving services for families and children. Additionally, you will enter the draw to win a gift voucher valued at \$150 and receive the report of the developmental assessment, normally worth about \$200.

Are there any risks?

Participation in this study should involve no physical harm for you or your child. Emotional discomfort or other risks will not extend beyond those encountered in everyday living.

Should you have any concerns or feel you need to discuss your family circumstances with a professional please contact your GP or any of the following services who can provide professional advice to parents.

MensLine
1300 789 978
www.mensline.org.au

Parentline
1300 301 300
www.parentline.com.au

How will my information be protected?

Any information you give us will remain confidential to the research team at all times. All your information will be de-identified and stored securely for a minimum of 5 years at the University of Newcastle and only accessed by the research team. You will have the opportunity to review, edit, or erase the video recording to which you have contributed. No names or identifying information of you or your children will be used in reporting of information.

How will the information collected be used?

The information will be used by the researchers to better understand Dads' role in children's development. The results of the research will be reported at conferences and in scientific publications. You will not be identified in any reports arising from the study. If you would like a summary of the results from this project, please contact Jennifer St George any time after 1st November 2016.

What do I need to do to participate?

Please read this Information Statement and be sure you understand its contents before you consent to participate. If there is anything you do not understand, or if you have questions, please contact the researchers.

If you would like to participate, or require further information, please contact Jennifer St George on 4921 6690, or via email at jennifer.stgeorge@newcastle.edu.au.

Dr Jennifer St George, Chief Investigator

Family Action Centre, Faculty of Health & Medicine

University of Newcastle , NSW 2308

Phone: 4921 6690

Jennifer.stgeorge@newcastle.edu.au

Dr Linda Campbell, Chief Investigator

Faculty of Science & Technology

University of Newcastle, NSW 2308

Phone: 4349 4490

Linda.e.Campbell@newcastle.edu.au

Complaints about this research

This project has been approved by the University's Human Research Ethics Committee, Approval No. H-. Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone (02) 49216333, email Human-Ethics@newcastle.edu.au.