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MOTHERS' AND FATHERS' ATTACHMENT RELATIONSHIPS WITH
CHILDREN WHO HAVE DISABILITIES

by

Sheila Lopez

A thesis submitted in partial fulfillment
of the requirements for the degree

of

EDUCATIONAL SPECIALIST

in

Psychology

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2013

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ABSTRACT

Mothers' and Fathers' Attachment Relationships With Children Who
Have Disabilities

by

Sheila Lopez, Educational Specialist

Utah State University, 2013

Major Professor: Gretchen Gimpel Peacock, Ph.D.
Department: Psychology

Research has found that attachment relationships between parents and children are formed independent of each other and have different outcomes for the child. Very little research regarding parent-child attachment relationships has been done with children who have a disability. This study aimed to learn more about whether differences exist in attachment relationships between mothers and fathers and whether or not the child has a disability. Results indicate that fathers of children with a disability appear to have less secure attachments with their children compared to fathers of typically developing children as well as mothers of children with and without disabilities. It is unclear as to why this may be; however, it is hypothesized that factors such as understanding the child's needs and being able to engage in highly stimulating play (e.g., throwing child in the air, etc.) may contribute to this finding. Further research is needed to better understand what factors contribute to the development of a secure attachment between

the father-child dyad when the child has a disability and why fathers may be experiencing greater difficulty than mothers of children with a disability as well as fathers of typically developing children.

(69 pages)

PUBLIC ABSTRACT

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Research has found that attachment relationships between parents and children are formed independent of each other and have different outcomes for the child. Very little research regarding parent-child attachment relationships has been done with children who have a disability. This study aimed to learn more about whether differences exist in attachment relationships between mothers and fathers and whether or not the child has a disability. Results suggest that fathers of children with a disability seems to struggle more in forming a secure attachment with their children. It is hypothesized that factors such as understanding the child's needs and being able to engage with the child may contribute to this finding. Further research is needed to better understand what factors contribute to the development of a secure attachment between father and child when the child has a disability and why fathers may be experiencing greater difficulty.

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Sheila Lopez

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CHAPTER I

PROBLEM STATEMENT

Attachment has been most commonly defined as children's inborn need for a sense of security between themselves and their primary caregiver, where they feel safe exploring and learning about the environment (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1969/1982). Researchers have identified four different kinds of attachment styles—secure, resistant, avoidant, and disorganized/disoriented (Ainsworth et al., 1978; Bowlby, 1969/1982; Main & Solomon, 1990). These styles reflect parent-child interactions and different patterns of behavior between the parent and child. Resistant, avoidant and disorganized/disoriented attachment styles are all forms of insecure attachment. The idea behind attachment theory is that the type of attachment relationship that exists between parent and child will affect the child's development and overall functioning throughout life (Madigan, Moran, Schuengel, Pederson, & Otten, 2007).

The development of attachment theory has primarily focused on the mother-child relationship. Ainsworth's caregiving hypothesis states that an infant's attachment is largely dependent on the kind of attention he/she receives (Ainsworth et al., 1978). In looking at the development of attachment it has been found that mother's sensitivity, which is a mother's ability to be responsive and nurturing to a child's needs, predicts the security of attachment with her child (Grossmann et al., 2002; Posada, Kaloustian, Richmond, & Moreno, 2007; von der Lippe, Eilertsen, Hartmann, & Killèn, 2010). Maternal sensitivity appears to have an impact on a child's feelings of security and cognitive competence (Posada et al., 2007; von der Lippe et al., 2010). In addition to

maternal sensitivity, the following characteristics and behaviors of the mother have been found to be associated with the development of a secure attachment: (a) the ability to remain positive and avoid feeling resentment towards her child even when the child may become angry or unresponsive, (b) the ability to engage in interactive play with her child, (c) the ability to be aware of her child and be able to regulate her own needs to respond to the needs of her child, (d) the ability to be supportive and encourage the child to explore and develop autonomy, (e) the ability to provide stimulation for the child by arousing and engaging the child, (f) responsiveness to the child's needs such as responding to a crying child, and (g) accessibility to the child both physically and mentally by attending to the child's signals and communication (Ainsworth et al., 1978). It has also been found that emotion-laden discourse (i.e., emotionally open conversation) between mother and child contributes to the development of a secure attachment (Liable & Thompson, 2000). The idea is that as the mother is available and responsive to the needs of her child, she is helping establish a sense of security within the child which contributes to the development of a secure attachment (Bowlby, 1969/1982).

There are a number of positive outcomes for children that have been associated with a secure attachment relationship with their mothers. For example, secure attachment increases a child's autonomy and initiative (von der Lippe et al., 2010). In addition, it has been found that children who are securely attached develop more positive social-emotional competence, cognitive functioning and physical and mental health (de Minzi, 2010; Ranson & Urichuck, 2008).

Researchers have also found negative implications for children who have insecure

attachment relations with their mother. For example, having a disorganized attachment at the age of one year was associated with externalizing behavior problems at 2 years of age (Madigan et al., 2007). Researchers have also found that insecure attachment in infancy was related to increased instrumental aggression and less self-control when playing with other children at 36 months of age (McElwain, Cox, Burchinal, & Macfie, 2003). In addition, having a less secure attachment relationship with mother is a predictor of low self-competence and feelings of loneliness in children (de Minzi, 2010).

While researchers have focused primarily on the mother-child relationship in terms of attachment, the importance of the father-child relationship has become increasingly more apparent over the years. Despite the push to study father-child attachment, there is still a large gap in the research looking at fathers compared to mothers. Lack of research in this area is largely because attachment theory originally placed fathers as secondary attachment figures and little has been done to identify the role of a secondary attachment figure (Hazen, McFarland, Jacobvitz, & Boyd-Soisson, 2010). It is possible that fathers were originally placed as secondary attachment figures as a result of fathers more typically being the parent who worked outside the home. In recent years, however, researchers have begun to take a closer look at attachment relationships between father and child.

Researchers have found that fathers and mothers form attachment relationships independent of each other. Therefore, fathers and mothers generally emphasize different aspects of the parent-child relationship that is important in the development of the attachment relationship, which also results in different child outcomes (George,

Cummings, & Davies, 2010; Goodsell & Meldrum, 2010; Grossman et al., 2002; Hazen et al., 2010). A child's attachment with his/her father is indicative of the father's parenting and is not influenced by mother's parenting, and vice versa (Freeman, Newland, & Coyle, 2010; George et al., 2010). The development of a secure attachment between mother and child is believed to be a result of maternal sensitivity while the development of attachment between father and child is less clear (de Minzi, 2010; George et al., 2010). With that said, it appears that sensitivity is associated with secure attachment for both mothers and fathers. However, it looks slightly different for fathers than it does for mothers (Grossman et al., 2002). Some research has found that paternal sensitivity accompanied with high stimulation that borders fear and fun contributes to a secure father-child attachment (Grossman et al., 2002; Hazen et al., 2010). This kind of interaction appears to be associated with a child's development of emotional regulation and an ability to stay focused. In contrast, a father who engages in highly stimulating behavior but lacks sensitivity has been found to be associated with self-regulation problems in the child (Hazen et al., 2010.) In addition, it appears that the more a father is involved in the child's life the greater the likelihood of developing and sustaining a secure attachment (Brown, McBride, Shin, & Bost, 2007; Freeman et al., 2010).

Past research suggests that a father's responsiveness, particularly in times of distress, contributes to a secure attachment relationship specifically in preschool aged children. In addition, children whose fathers display low responsiveness, particularly during times of distress experience avoidance in their attachment relationship with their father (George et al., 2010). de Minzi (2010) found that while parental availability is

important in developing attachment for both mother and father it appears that father's lack of availability is more predictive of feelings of depression in children than mother availability.

Despite the gap in research that exists in father-child attachment, there is even less research on parental attachment with children who have disabilities. While research over the years has indicated that the style of attachment between parent and child is a result of the parental behaviors and actions, some research has also found that child temperament or the existence of a disability in the child may also influence the development of attachment (Howe, 2006). Secure attachment is generally predicted by the parent's ability to read, interpret and understand children's mental states (Meins, 1999). With children who have disabilities, the ability to communicate effectively and recognize a child's state may be more difficult resulting in greater challenges in achieving parental sensitivity (Howe, 2006). This may add to the parent's difficulty in effectively developing a positive attachment with his/her child.

While research has found that children with disabilities are more likely to be classified as insecurely attached (Clements & Barnett, 2002), some research has indicated that whether or not a child with a disability has an insecure attachment has more to do with the parents' psychological well-being, than the child (Howe, 2006). Disability alone is unlikely to be the sole factor that contributes to the development of an insecure attachment (Howe, 2006).

Parents of children who have a developmental disability have reported greater levels of stress than parents of typically developing children due to the unique challenges

of having a child with a developmental disability (Abbeduto et al., 2004; Baker, Blacher, Crnic, & Edelbrock, 2002; Higgins, Bailey, & Pearce, 2005; Howe, 2006; Perry, 2005). For example, mothers of children with Autism reported higher levels of stress than mothers of typically developing children. In turn, these mothers reported that they experienced less closeness with their child. Despite the association that was found between mother's reports of stress and less closeness to their children, mothers of children who have Autism did not differ in their reports of closeness with their children compared to mothers of typically developing children who have severe behavior problems. The less closeness mothers reported experiencing appears to be associated with the child's higher level of problematic behavior rather than the autism itself (Hoffman, Sweeney, Hodge, Lopez-Wagner, & Looney, 2009). Although it has been reported that the severity of a child's disability leads to greater parental stress some research has found that the severity of a child's disability is not associated with less closeness or an insecure attachment with parents. It is possible that parents are able to adapt to the needs of their child and develop the level of closeness necessary for mothers to effectively respond to their children (Hoffman et al., 2009; Howe, 2006).

There is much research within the attachment field that has identified the importance of the attachment relationship for the overall development and functionality of a child. However, the majority of this research has been within the mother-child relationship and with typically developing children. Additional research is needed regarding the father-child relationship, and specifically when the child has a developmental delay in order to provide greater understanding about what these

relationships look like. In order to better understand the construct of parent-child attachment it is important that research examine attachment relationships across mother and father as well as the existence of a disability in the child. Once more is understood about these relationships then programs can begin to be developed to help mothers and fathers develop secure attachment relationships with their children who have a developmental delay. The purpose of this study is to examine the parent-child attachment relationship in a sample of children with developmental delays as well as a sample without developmental delays as addressed by the following research question: *Are there differences in attachment security between mothers and fathers with children with and without a developmental delay?*

CHAPTER II

REVIEW OF LITERATURE

Attachment theory postulates that caregiving and attachment relationships set in motion the child's ability to develop a model for him/herself that carries on throughout life and there is much research supporting this notion (Easterbrooks & Adeles, 2000). Therefore, understanding more about how attachment relationships form and what they mean for the child is important. As a result, this review of literature (a) identifies the different types of attachment relationships, (b) examines how attachment forms with mothers, (c) examines how attachment forms with fathers, (d) identifies the child outcomes associated with various forms of attachment relationships with mothers, (e) identifies the child outcomes associated with various forms of attachment relationships with fathers, and (f) and outlines contributing factors to attachment when a child has a disability.

Types of Attachment

The attachment relationship between parent and child has been examined for many years. Researchers have been interested in what attachment is and how it impacts both parent and child. Attachment has been most commonly defined as children's inborn need for a sense of security between themselves and their primary caregiver, where they feel safe exploring and learning about the environment (Ainsworth et al., 1978; Bowlby, 1969/1982). Researchers have identified four different attachment styles—secure, resistant, avoidant and disorganized/disoriented (Ainsworth et al., 1978; Bowlby, 1969/

1982; Main & Solomon, 1990). Initially, Ainsworth identified secure, resistant and avoidant attachment styles and Main and Solomon later identified disorganized/disoriented attachment style. Secure, resistant and avoidant attachment styles are all based on a history of dyadic interaction between child and caregiver and are believed to reflect the infant's expectation of the caregiver's response to attachment related needs and cues (Ainsworth et al., 1978; Bowlby, 1969/1982; Madigan et al., 2007). Children who are securely attached have developed a bond with their caregiver that provides a sense of safety and comfort from which the children can grow and develop. Resistant attachment style is when the child is resistant or ambivalent towards the caregiver. At times the child wants to cling to the caregiver while other times the child wants no contact or interaction with the caregiver. Avoidant attachment is identified when the child avoids contact with the caregiver or shows no preference for the caregiver over others (Ainsworth et al., 1978). Main and Solomon (1990) later identified disorganized/disoriented attachment style as an attachment style that develops when the attachment figure provides a safe base for the child and is also a source of fear for the child. It is believed that this results in a child who both approaches and flees from the caregiver preventing the child from using the attachment figure as a source of comfort when distressed. Disorganized/disoriented attachment is often a result of inconsistent behavior from the caregiver. These four attachment styles have been further studied over the years to better understand what attachment is and its implications. While attachment theory has made a distinction between resistant and avoidant insecure attachment styles most researchers only look at the differences between secure and insecure attachment styles

rather than breaking up insecure into resistant and avoidant categories.

Attachment Formation

Mothers' Attachment Formation

Ainsworth and colleagues (1978) identified a number of factors that are associated with a secure attachment. They were as follows: (a) positive maternal attitude, which is the ability for a mother to remain positive and keep from feeling resentment towards her child even when the child may become angry or unresponsive, (b) synchrony which is the mother's ability to engage in the same activities and interact with her child, (c) mutuality, which is the mother's ability to be aware of her child and be able to regulate her own needs to respond to the needs of her child, (d) mother's ability to be supportive and encourage the child to explore and develop autonomy, (e) mother's ability to provide stimulation for the child by arousing and engaging the child, (f) mother's responsiveness to her child's needs such as responding to a crying child, and (g) mother's accessibility to the child both physically and mentally by attending to the child's signals and communication. Since Ainsworth and colleagues' original work, researchers have continued to find a number of factors that contribute to the development of a secure attachment between caregiver and child. In examining the mother-child relationship it has been found that maternal sensitivity has an impact on the child's feelings of security and cognitive competence (Posada et al., 2007; von der Lippe et al., 2010). Using naturalistic observations in both a park setting and at home when the child was four years old, Posada and colleagues conducted two different studies to examine maternal and child behaviors

associated with a secure attachment. The first study had 50 mother-child dyads and the second study had 40 mother-child dyads. Maternal behavior was described using the Maternal Behavior for Preschoolers Q-Set (MBPQS; Posada, Moreno, & Richmond, 1998) and child behavior was described using the Attachment Q-Set (AQS; Waters, 1995). These researchers found that the following maternal behaviors were significantly associated with mother-child security: (a) contributions to harmonious interactions ($r = .45, p < .01$), (b) secure base support ($r = .47, p < .01$), (c) supervision/monitoring ($r = .40, p < .05$), and (d) and limit setting ($r = .49, p < .01$). In addition, correlational analyses were done to examine the relationship between maternal sensitivity and child security. It was found that maternal sensitivity at the park was statistically significantly associated with security at the park ($r = .39, p < .01$) as well as at home ($r = .35, p < .01$) In addition, maternal sensitivity at home was statistically significantly related to child security at home ($r = .27, p < .05$) These researchers concluded that the more mothers were sensitive to their children's signals and communications both on the playground and at home, the more the children used their mothers as a secure base to go to, and from which to explore. They also indicated that the overall quality of concurrent maternal caregiving behavior was significantly related to preschoolers' attachment security in these naturalistic settings. In another study that was done longitudinally including 40 mother-child dyads, maternal sensitivity was assessed through naturalistic observations at the home using the Care Index (Crittenden, 2001) when the child was 6 to 7 months old. Additionally, child attachment was assessed at one year using Ainsworth's Strange Situation Procedure (Ainsworth et al., 1987). Lastly, child cognition and maternal tutoring, as measured by

the Running Horses Game Test (Hartmann & Haavind, 1981), maternal attachment, as measured by the Adult Attachment Interview (George, Kaplan & Main, 1996), and maternal verbal ability, as measured by the vocabulary subtest of the Wechsler Adult Intelligence Test (Wechsler, 1981), were all assessed when the child was six or seven years old (von der Lippe et al., 2010). In this study, the researchers found that maternal sensitivity was associated with secure attachment ($r = .40, p < .01$). In another study, researchers collected data from 42 four year old children and their mothers across home and laboratory settings. The mother-child dyads that had been identified as securely attached as assessed by the Attachment Q-Set, Version 3 (Waters & Deane, 1985), had more frequent references to feelings and moral evaluatives when discussing the child's past behavior than those dyads who had been defined as having an insecure attachment ($R^2 = .41, p < .01$). Based on this finding the researchers concluded that emotion-laden discourse, which is identified as interactions between mother and child being emotionally open, contributed to the development of a secure attachment relationship (Laible & Thompson, 2000). In a longitudinal study using 49 families going from children's birth to age 16, the researchers looked at the relationships between variables across time as well as at birth, 1 year, 18 months, 2 years, 6 years, 10 years, and 16 years old. Measures used included the Strange Situation Procedure (Ainsworth et al., 1987) and Adult Attachment Interview (George, Kaplan & Main, 1985). The following were found to be significantly related (a) maternal sensitivity at 1 year and quality of attachment at one year ($r = .34, p < .05$), (b) maternal sensitivity at 1 year and mothers' attachment representation ($r = .31, p < .05$), and (c) maternal quality of attachment at 1 year and mothers' attachment

representation ($r = .46, p < .01$). In addition, infant-mother attachment security was significantly related to children's security scores at age 6 ($r = .49, p < .01$) and at age 10 ($r = .37, p < .05$). These findings suggest that infant-mother quality of attachment is a predictor of children's attachment representation at ages six and ten (Grossmann et al., 2002).

Fathers' Attachment Formation

In recent years, researchers have come to recognize that fathers play a unique role in the development of a child. As a result examining the father-child attachment relationship is a field of research that has been growing. In a study with 860 middle-aged children from five elementary schools in Buenos Aires, Argentina children's perceptions of security in parent-child relationships was measured using the Kerns' Security Scale (Kerns, Klepac, & Cole, 1996; Argentine adaptation by Richaud de Minzi, Sacchi, & Moreno, 2001). In this, study de Minzi (2010) found the following significant correlations between mother and father attachment dimensions: (a) mother reliance and mother availability ($r = .63, p < .01$), (b) mother reliance and father reliance ($r = .43, p < .01$), (c) mother reliance and father availability ($r = .30, p < .01$), (d) mother availability and father reliance ($r = .44, p < .01$), (e) mother availability and father availability ($r = .41, p < .01$), and (f) father reliance and father availability ($r = .72, p < .01$). These findings indicate that while mother's reliance and availability is related to father's reliance and availability and vice versa, the correlations are stronger within mothers alone and fathers alone (de Minzi, 2010). It is acknowledged that this study was completed in Argentina, which may result in cultural differences when examining father-child

attachment relationships in the United States; however, it still provides useful information, in conjunction with similar research, in noting that the father-child attachment relationship forms independent of the mother and fathers can provide an alternative attachment figure to mothers (de Minzi, 2010; George et al., 2010; Goodsell & Meldrum, 2010). In addition, it has been found that fathers and mothers generally emphasize different aspects of the parent-child relationship in developing the attachment relationship, which also results in different child outcomes (George et al., 2010; Goodsell & Meldrum, 2010; Grossman et al., 2002; Hazen et al., 2010).

As researchers have looked at the father-child relationship, several factors have been found to be associated with the formation of a secure attachment between father and child. In a longitudinal study with 125 families, spanning from birth to age seven or eight a variety of measures were used at various time points including the Adult Attachment Interview (George et al., 1985, 1996) and the Strange Situation Procedure (Ainsworth et al., 1978). It was found that fathers scored higher on highly stimulating behaviors (e.g., throwing child in air) than mothers, $t_{(118)} = 3.28, p < .001$; however, fathers did not differ from mothers on sensitivity (Hazen et al., 2010). It was also found that fathers who had been identified as having a secure attachment were more likely to engage in highly stimulating behaviors while displaying sensitivity ($n = 21$) than fathers who had been identified as having an insecure attachment ($n = 7$). In a qualitative design using oral history interviews involving four soon-to-be mothers who identified as having close, secure relationships with their fathers but not their mothers in childhood, Goodsell and Meldrum (2010) found that the attachment relationship forms from mutual response

between both the father and the child. In another study, with 236 families using the Main and Cassidy (1988) Strange Situation Procedure, adapted to be appropriate for children in kindergarten (George et al., 2010) it was found that a father's responsiveness, particularly in times of distress, contributes to a secure attachment relationship in preschool aged children, $\chi^2(2) = 10.12, p < .01$. Other researchers (Brown et al., 2007) with a sample size of 46 child-father dyads using The Interaction/Accessibility Time Diary interview protocol (McBride & Mills, 1993), an adaptation of the Parental Responsibility Scale (McBride & Mills, 1993), observation coding scales adapted from Egeland and Sroufe (1983) and Sroufe, Jacobvitz, Mangelsdorf, DeAngelo, and Ward (1985), and the Attachment Behavior Q-Set (AQS; Waters, 1987; Waters, Vaughn, Posada, & Kondo-Ikemura, 1995) examined whether the links between father involvement and father-child attachment security were moderated by qualitative aspects of parenting. This study found a significant interaction between father involvement and positive affect in predicting father-child attachment security ($\beta = .40; F = 5.96, p < .05$). This indicated that low attachment security was associated with father involvement when fathers showed low levels of positive affect. A significant interaction was also found between father involvement and task orientation in predicting father-child attachment security ($\beta = .35; F = 4.07, p = .05$). This suggests that father involvement was associated with low attachment security when fathers showed low levels of task orientation. It appears that the more a father is involved in the child's life coupled with positive parenting behaviors, the greater the likelihood of developing and sustaining a secure attachment between father and child (Brown et al., 2007; Freeman et al., 2010). Additionally, in a meta-analysis it

was indicated that mothers' support of the fathers' parenting is more predictive of the father-child attachment relationship than fathers' support of mothers' parenting, even when controlling for fathers' sensitivity (Freeman et al., 2010).

Child Outcomes

Child Outcomes Related to Attachment With Mothers

Researchers have identified numerous positive outcomes that are related to the development of a secure attachment style between mother and child. There is some research suggesting that a secure attachment relationship in infancy or the toddler years promotes earlier self-recognition, self-knowledge and agency or the emergence of the behavioral self through behavioral adaptation (Easterbrooks & Abeles, 2000). In a longitudinal study, it was found that children who developed a secure attachment in infancy were more likely to have a "mutual-balanced affective negotiation style" with their mothers at age seven and a half (Gini, Oppenheim, & Sagi-Schwartz, 2007). In another longitudinal study, cited earlier, it was found that child secure attachment is significantly related to child executive functioning ($r = .43, p < .01$; von der Lippe et al., 2010) and that mothers as a secure base increased child autonomy and initiative. These researchers argue that a mother's attachment toward her child has indirect effects on child attachment with his/her mother and child executive functioning. In addition, Easterbrooks and Adeles (2000) conducted a study by interviewing 85 (39 female, 46 male) 8-year-old children to gain a greater understanding about the relationship between attachment style and the development of the self. The researchers found that children who displayed

greater emotional security during the Separation Anxiety Test (Hansburg, 1972; Kaplan, 1985; Klagsbrun & Bowlby, 1976) displayed the greatest ease of access to self-evaluations during the interview. These children also demonstrated greater coping strategies such as seeking out social support when separated from their mothers. It was found that children's representation of themselves was linked to the attachment relationship with their mother, $F_{(3, 77)} = 5.80, p < .001$. In their study, Laible and Thompson (2000), with a sample size of 42 (22 male, 20 female) 4-year-old children, examined relations between parent-child discourse, attachment security, shared positive affect and early conscience development by examining references to feelings and moral evaluatives, which included moral statements stated in the form of an evaluative such as "good boy" or "that was a nice thing to do." They measured these variables using the Attachment Q-Set Version 3.0 (AQS; Waters & Deane, 1985) and semistructured observations. They found significant correlations among attachment security and (a) maternal references to feelings/evaluatives factor ($r = .44, p < .01$), (b) child references to feelings/evaluatives factor ($r = .36, p < .05$), (c) engagement factor ($r = .45, p < .01$), (d) guilt after wrongdoing ($r = .34, p < .05$), (e) internalized self-conduct ($r = .40, p < .05$), and (f) concern over good feelings with parent after wrongdoing ($r = .32, p < .05$). These researchers concluded that children who had developed a secure attachment with their mothers were less likely to transgress even when the mother was not around. Researchers postulate that this finding suggests that securely attached children exhibit high levels of behavioral self-restraint (Laible & Thompson, 2000). In general, research has found that a secure attachment between mother and child leads to more positive outcomes for the

child than an insecure attachment style.

When discussing insecure attachment, Bowlby (1969/1982) proposed that dysfunctional patterns of caregiving would likely increase the risk of a child developing problem behaviors. Over the years, researchers have looked more closely at this hypothesis and have identified a number of negative outcomes associated with the development of an insecure attachment style. Gini and colleagues (2007) found that children who developed an insecure-ambivalent attachment style in infancy were more likely to have “non-mutual or unbalanced affective negotiation styles” with their mothers at age seven and a half. These children were likely to have feelings of disengagement towards their mothers or feel that their mother was “overwhelming” or “intrusive.” Researchers have indicated that children who have an insecure attachment style with their mother have greater difficulty in academic performance, executive functioning skills, self-recognition, autonomy, and self-regulation than children who have a secure attachment style (Easterbrooks & Adeles, 2000; von der Lippe et al., 2010). In a study conducted in Argentina with 860 8-year-old children, de Minzi (2010) looked at the relationship between mother and father attachment and children’s self-competence, depression and loneliness. The global prediction for depression from mother and father attachment was found to be significant, $F_{(4, 578)} = 247.27, p = .000$. The overall attachment model explained 63% of the variance in children’s depression, with mother dimensions explaining only 3% of that variance. Father attachment dimensions were stronger predictors of children’s feelings of depression than mother attachment dimensions. The global prediction for loneliness was also found to be significant, $F_{(4, 605)}$

= 34.36, $p = .000$. The overall attachment model explained 19% of the variance in children's loneliness with the mother dimensions accounting for 18% of that variance. Mother attachment dimensions were stronger predictors of children's feelings of loneliness than father attachment dimensions. The global prediction for scholastic self-competence was also found to be significant, $F_{(4, 643)} = 27.86, p < .000$. The overall attachment model explained 15% of the variance in children's scholastic self-competence with mother attachment dimensions explaining 12% of that variance. Mother attachment dimensions, specifically mother availability were stronger predictors of children's scholastic self-competence than father attachment dimensions. In addition, the global prediction for social self-competence was found to be significant, $F_{(4, 637)} = 18.54 p < .000$. The overall attachment model explained 10% of the variance in children's social self-competence with mother attachment dimensions explaining all of the variance. Mother attachment dimensions, specifically mother availability were stronger predictors of children's social self-competence than father attachment dimensions. These findings suggest that having a poor attachment relationship with mother is a greater predictor of low self-competence and feelings of loneliness in children. In addition, it has been found that children who have an insecure or less secure attachment relationship exhibit more internalizing and externalizing behavioral problems than children who are securely attached (Easterbrooks & Adeles, 2000; Laible & Thompson, 2000).

In an attempt to better understand disorganized attachment Madigan and colleagues (2007) conducted a longitudinal study following children from 6 months of age to 24 months. Using a variety of measures including the Adult Attachment Interview

(AAI; George et al., 1996) and the Strange Situation Procedure (SSP; Ainsworth et al., 1978) they found that having a disorganized attachment style at age 6 months and/or 12 months was associated with externalizing behavior problems at 2 years of age ($p = .05$). They found that disorganized attachment relationships was associated with (a) unresolved attachment representations ($r = .30, p < .05$), (b) disrupted maternal behavior ($r = .52, p < .01$), and (c) externalizing behavior problems ($r = .39, p < .01$). In addition to being associated with disorganized attachment relationships, externalizing behavior problems was associated with (a) unresolved attachment representations ($r = .34, p < .01$) and (b) disrupted maternal behavior ($r = .30, p < .01$). Disrupted maternal behavior was also associated with unresolved attachment representations ($r = .28, p < .05$). It was concluded that the development of a disorganized attachment style between mother and child may contribute to the development of externalizing behavior problems. In another study Gini and colleagues (2007) found that, similar to children with the insecure-ambivalent attachment, children who were classified as having a disorganized attachment style in infancy were more likely to have a negotiation style that consisted of the child feeling that his/her mother was “overwhelming” or “intrusive” resulting in “non-mutual” or “unbalanced” negotiations with mothers at 7.5 years of age.

Child Outcomes Related to Attachment With Fathers

Just as a secure attachment between mother and child leads to positive outcomes for the child so does a secure attachment between father and child. Some researchers suggest that it is possible that fathers who stay sensitive while keeping their child highly

stimulated through play are providing the appropriate scaffolding for their child's ability to self-regulate emotions, cope with overstimulation and maintain focus (Hazen et al., 2010). In addition, researchers have argued that fathers who are responsive to their children have children with better emotional functioning than fathers who are not responsive to their children (George et al., 2010). These researchers also suggest that children are more socially competent when their fathers display warmth and sensitivity as opposed to those fathers who do not display these characteristics. As described earlier, de Minzi (2010) found that father attachment dimensions, specifically father availability were stronger predictors of children's depression than mother attachment dimensions. Based upon this finding it was concluded that father availability and children's reliance on the father are more predictive of feelings of depression in children than mother availability and children's reliance on the mother. In addition, as discussed earlier, Grossmann and colleagues (2002) ran correlations between measures of child-father attachment, play relationships and fathers' attachment representation. The following were found to be significantly related (a) fathers' composite caregiving index at first year and fathers' play sensitivity at 24 months ($r = .32, p < .05$), (b) fathers' composite caregiving index at first year and fathers' play sensitivity at 6 years ($r = .30, p < .05$), (c) fathers' composite caregiving index at first year and fathers' attachment representation ($r = .43, p < .01$), (d) infant-father strange situation procedure quality of attachment at 18 months and fathers' attachment representation ($r = .35, p < .05$), (e) fathers' play sensitivity at 24 months and father's play sensitivity at 6 years ($r = .63, p < .001$), (f) fathers' play sensitivity at 24 months and fathers' attachment representation ($r = .37, p < .05$), and (7)

fathers' play sensitivity at 6 years and fathers' attachment representation ($r = .46, p < .01$). Infant-father attachment security was also significantly related to children's security score at 6 years old ($r = .30, p < .05$). In addition, fathers' play sensitivity was significantly related to children's security rating at 10 years old ($r = .31, p < .05$). These findings indicate that fathers' sensitivity in father-child play during the toddler years is a strong predictor of children's attachment representation at ages 6 and 10 (Grossmann et al., 2002). It has also been found that fathers may have more impact in supporting a child's confidence in exploration both in the social and physical environment than mothers do. Children of fathers who are supportive of their children's exploration and gently challenging were more likely to have positive social and emotional adjustment as well as the ability to overcome fear and anxiety provoking situations from kindergarten up to young adulthood (Freeman et al., 2010; Grossmann et al., 2002).

Researchers have also found important factors that may contribute to the development of an insecure or less secure attachment style between father and child. In a longitudinal study, spanning from the child's birth to age 7 or 8, Hazen and colleagues (2010) found that fathers insensitivity and highly stimulating behavior together, rather than highly stimulating behavior alone, may predict children's later difficulties with self-regulation. Child emotional underregulation and child attention problems were highest for children whose fathers engaged in highly stimulating behavior and were insensitive. In a cross-sectional study, it was found that children are more likely to have an insecure attachment with a father who is less responsive to their needs than they are with a mother who is less responsive to their needs (George et al., 2010). It appears that parental

responsiveness may be more important in the development of a secure father-child attachment than mother-child attachment. It has also been found that when children are more reliant on their parents but report that their parents are less available and supportive, this may lead to an insecure attachment style that leaves the child with a fear of being alone (de Minzi, 2010). Research has found that when fathers engaged in less desirable parenting techniques coupled with high involvement children were more likely to develop an insecure or less secure attachment relationship than children of fathers who engaged in more desirable parenting techniques (Brown et al., 2007).

Children with Disabilities

Based upon prior research (Ainsworth et al., 1978; Bowlby, 1969/1982; de Minzi, 2010; George et al., 2010; Grossmann et al., 2002; Hazen et al., 2010; Posada et al., 2007; von der Lippe et al., 2010), it is known that parental sensitivity is a key contributor to the development of a secure attachment. However, through a meta-analysis (Howe, 2006) it has been found that parents' abilities to remain sensitive and responsive to their children is largely dependent on the parents' abilities to recognize, understand and interpret their child's behavior, body language, facial expressions and speech. It was also found that the ability for parents to accurately do this can be inhibited by the child's disability making the formation of a secure attachment relationship more difficult and often more stressful for the parents (Howe, 2006). While these challenges exist for many parents in being able to form secure attachment relationships with their child who has a disability, research has also found that parents are still able to display sensitivity to their

child through displaying emotional openness, particularly emotional availability to their child (Howe, 2006).

In addition, research has identified external factors that often contribute to the stress that parents experience associated with having a child with a disability, which can impact the ability to form a secure attachment relationship. Such factors include extra financial burdens, lack of social support and the added demands as a caregiver. In addition, children who feel that their needs are not recognized, are ignored or not understood become distressed. This distress often impacts a child's attachment behavior which can lead to more stress and frustration for the parents. It is this stress that often impacts a caregiver's state of mind and ability to form a secure attachment with their child. As a result, it has been argued that it is the interaction between children with disabilities and the caregiver's state of mind with respect to attachment that is associated with insecure attachment relationships more so than the disability itself (Hoffman et al., 2009; Howe, 2006).

Researchers conducted a study examining mothers stress and its impact on attachment security between children with and without Autism (Hoffman et al., 2009). This study contained 104 mothers who have children with Autism and 342 community mothers and children who do not have Autism. The children ranged in age from 3-16 years old and the mothers ranged in age from 18-63 years old. Hoffman and colleagues (2009) found that mothers of children with Autism reported higher levels of stress on both the child domain, $t(420) = 20.87, p < .001$, and the parent domain, $t(420) = 5.62, p < .001$, on the Parenting Stress Index (PSI) than mothers of typically developing children.

In addition, mothers' reports of higher levels of stress related to the child's difficult behavior were found to be associated with lower levels of closeness with their children for both the community ($r = .60, p < .001$) and the Autism ($r = .60, p < .001$) groups. This indicates that for mothers in both groups, the more stressful and problematic they reported their child's behavior, the less closeness they reported feeling. Within the Autism group, it was found that children's Autism Index (AI) scores were significantly correlated with mothers' Attachment Subscale scores ($r = .21, p < .05$) indicating that the severity of the child's Autism was related to mothers' reports of less closeness on the Attachment subscale. However, separate regression analyses found that when examining the relationship between AI scores and Child Domain scores on Attachment scores the Child Domain scores had a significant impact on the variance $R^2 = .21, F(1, 102) = 38.67, p < .001$; whereas, AI scores did not. These findings suggest that it was the child's higher levels of problematic behavior, indicated by the child domain scores, and not the level of their Autism per se that was the primary factor contributing to mothers' reports of less closeness to their children (Hoffman et al., 2009).

Another study was conducted to examine how child congenital anomalies such as cleft palate, cleft lip, cerebral palsy, and epilepsy might affect parenting and attachment (Clements & Barnett, 2002). The sample consisted of 72 children between 12-36 months old with neurological and nonneurological birth defects and their mothers. Within the sample 33 participants had nonneurological birth defects and 39 participants had a neurologically based birth defect. The following measures were used within this study: (a) Strange Situation Procedure (Ainsworth et al., 1978), (b) attachment Q-sort (Waters &

Deane, 1985), (c) the Bayley Scales of Infant Development (Bayley, 1993), and (d) a 15-minute parent-child play situation. It was found that parenting quality significantly predicted attachment security, $F(3,66) = 2.99, p < .05$. This finding suggests that children with secure attachment relationships received significantly higher quality parenting than did children with avoidant attachment relationships. In addition, significant differences were found for attachment and appearance impact rating, which indicates the severity of the child's visible anomalies (e.g., facial features and posture) relative to same age peers $F(1, 70) = 4.37, p < .05$. This finding indicates that children classified as securely attached had significantly higher visible anomalies than children classified as insecurely attached. In addition, children with a neurological birth defect were more likely to have scored lower on attachment security ($r = .26, p < .05$). Having a neurological condition appears to challenge parents, undermining sensitivity, and thereby, increasing the chances that children with neurological conditions will be insecurely attached (Clements & Barnett, 2002; Howe, 2006). In addition, Clements and Barnett found that the Functional Severity Index, which indicates the average discrepancy between chronological and developmental age on the mental and motor scales of the Bayley Scales of Infant Development, was significantly correlated with the Q-sort security criterion ($r = .48, p < .01$). This indicates that children with impairments were more likely to score lower on attachment security. These findings indicate that children with more severe appearance impact ratings and children with non-neurological diagnoses were more likely to be securely attached (Clements & Barnett, 2002)

A preliminary study conducted by Lopez and Rich (2011) containing a sample

size of 52 (27 mothers and 25 fathers) examined parental attachment with children who have disabilities using a checklist form of the Attachment Q-Set (Roggman, Cook, & Akers, 2004) in an attempt to gain a greater understanding about the differences between mother and father attachment relationships with children who have a disability. It was found that fathers reported being more securely attached to their children than mothers did $t(50) = -3.04, p < .01$. One possible explanation would suggest that mothers may experience more of the stress and strain associated with caring for a child with a disability. It is likely that the levels of stress experienced by mothers may impede the ability to form a secure attachment (Lopez & Rich, 2011).

Research has found that the increased severity of a child's disability does not actually predict increased risk of insecurity and in fact, there are some indications that attachment security actually increases for children with more severe disabilities (Clements & Barnett, 2002; Howe, 2006). It is possible that when a child's disability is more apparent and is likely to affect many aspects of the child's functioning and communication that parental recognition, understanding and acceptance increase (Howe, 2006). While research has begun to examine the attachment relationships between parents and children with disabilities more needs to be done in this area. In addition, more research needs to examine differences between mothers and fathers in attachment security with children who have a disability. Research on attachment with children of typical development has found that differences do exist; therefore, research with children who have a disability needs to expand and explore the differences between mothers and fathers attachment relationships.

CHAPTER III

METHODS

Participants

A sample size of 109 was obtained with a total of 52 parents (27 females, 25 males) of children with disabilities and 57 parents (30 females, 27 males) of children without disabilities. Parent participants ranged in age from 19-51 with a mean age of 30.33 ($SD = 5.93$). Age of parent participants in the disability sample ranged from 23-51 with a mean age of 32.60 ($SD = 6.07$). Parental age in the typical sample ranged from 19-43 with a mean age of 28.26 ($SD = 5.03$). Age of the child in months ranged from 18-36 with a mean age of 27.23 months ($SD = 5.96$). Mean age of the child within the disability sample was 25.31 months ($SD = 3.90$) and in the typical sample was 28.99 ($SD = 6.94$). Total number of children living in the participants' homes ranged from 1-6 with a mean of 2.39 ($SD = 1.21$) children. Participants also reported a total number of children with disabilities ranging from 0-3 with a mean of .58 ($SD = .72$) children with a disability. Within the disability sample 37% of children were receiving one service provided by the early intervention program, 23% were receiving two services, 25% were receiving three services, 8% were receiving four services, 6% were receiving five services and 2% were receiving six services. No individual child within the sample was receiving more than six services through the early intervention program. Table 1 contains all other participant demographic information.

Table 1

Participant Demographics

Characteristic	Total sample		Disability sample		Typical sample	
	<i>N</i>	%	<i>n</i>	%	<i>n</i>	%
Parent gender						
Male	52	47.7	25	48.1	27	47.4
Female	57	52.3	27	51.9	30	52.6
Child gender						
Male	69	63.3	35	67.3	34	59.6
Female	40	36.7	17	32.7	23	40.4
Parent status						
Biological mother	55	50.5	25	48.1	30	52.6
Nonbiological mother	3	2.8	3	5.8	0	0.0
Biological father	47	43.1	22	42.3	25	43.9
Nonbiological father	4	3.7	2	3.8	2	3.5
Race						
Asian	3	2.8	1	1.9	2	3.5
Pacific Islander	1	.9	1	1.9	0	0.0
Caucasian	102	93.6	47	90.4	55	96.5
Hispanic/Latino	1	.9	1	1.9	0	0.0
Other race	2	1.8	2	3.8	0	0.0
Annual household income						
Less than \$15,000	14	12.8	4	7.7	10	17.5
\$15,000-30,000	37	33.9	14	26.9	23	40.4
\$30,000-45,000	18	16.5	10	19.2	8	14.0
\$45,000-60,000	17	15.6	9	17.3	8	14.0
\$60,000-75,000	5	4.6	2	3.8	3	5.3
\$75,000-90,000	5	4.6	4	7.7	1	1.8
More than \$90,000	12	11.0	9	17.3	3	5.3
Education level						
High school graduate	10	9.2	6	11.5	4	7.0
Some college/associate's degree	54	49.5	13	25.0	41	71.9
College graduate/bachelor's degree	28	25.7	23	44.2	5	8.8
Graduate/professional degree	17	15.6	10	19.2	7	12.3
Religion						
Catholic	1	.9	1	1.9	0	0.0
Protestant	2	1.8	1	1.9	0	0.0
LDS	101	92.7	47	90.4	54	94.7
Atheistic/agnostic	1	.9	0	0.0	1	1.8
Other religion	4	3.7	3	5.7	1	1.8

(table continues)

Characteristic	Total sample		Disability sample		Typical sample	
	<i>N</i>	%	<i>n</i>	%	<i>n</i>	%
Early intervention services received						
Speech language			46	88.5		
Occupational therapy			24	46.2		
Physical therapy			13	25.0		
Psychological/ behavioral			10	19.2		
USDB/vision			0	0.0		
Nutrition			3	5.8		
Nursing			0	0.0		
Social work			4	7.7		
Assistive technology			2	3.8		

Measures

All parents completed the measures described below. Due to the lack of paper-pencil attachment measures with strong psychometric properties, parents were asked to complete two measures of attachment in an attempt to get a better understanding of their attachment relationship with their child. Mothers and fathers were asked to complete these measures individually based on their own experiences with one of their children between the ages of 1½ to 3 years. In order to account for the possibility of some parents having more than one child in the targeted age range half of parents were asked to complete the forms on their oldest child and half of parents were asked to complete the forms on their youngest child. This was done in order to prevent parents from having to make that decision themselves and any potential bias.

Demographic Form

There was a separate demographic form for the disability sample and the typical sample (see the Appendix). Both forms provided basic information about the participants

including age, gender, ethnicity, race, income, and years of college. For the disability sample, there were additional items about the type of services being provided by the early intervention program. In addition, for the typical sample, there were additional items asking whether or not the child had a disability or had ever received any kind of psychological services including behavioral services.

Attachment Q-Set Checklist (AQS-C)

The AQS-C (Roggman et al., 2002) is a revised form of the Attachment Q-Set, Version 3 (AQS; Waters, 1987). This measure is used to assess parent-child attachment relationships. The AQS-C is a simpler version of the AQS that does not require the large number of hours spent during observations or training the parents that is required with the AQS. The AQS-C contains 90 items describing child behavior on which the parent rates whether or not that behavior describes their child on the following 3-point Likert Scale: 0 (*not like your child*), 1 (*neither like nor unlike your child*), 2 (*like your child*). Example items include: *Child laughs and smiles easily with a lot of different people*, *Child tries to get your attention when you sit with or are affectionate to other family members*, and *Child doesn't usually ask you for help*. Roggman and colleagues (2002) conducted three separate studies to determine equivalence, stability and reliability of the AQS-C compared to the AQS. The correlation coefficient between the AQS-C and the AQS across different samples ranged from .53 to .69. In addition, the internal consistency ranged from on different samples from .67 to .90.

The total score for the AQS-C is obtained via calculating a correlation using expert scores that were derived from the opinions of eight experts in the attachment field

with each of the participants' responses. Correlation scores range from -1 to +1. A correlation score of +1 represents the most secure score possible and a score of 0.3 is the approximate cutoff for security and insecurity (Roggman et al., 2004).

Parenting Relationship Questionnaire, Preschool (PRQ-P)

The PRQ-P (Kamphaus & Reynolds, 2006) is a measure of a parent's perspective on his/her relationship with his/her child as assessed by the following dimensions: (a) attachment, (b) discipline practices, (c) involvement, (d) parenting confidence, and (e) relational frustration. This measure is designed for parents of children between ages 2-5. The PRQ-P contains 43 items across the five scales in which the parent rates the level at which that behavior describes their child on a 4-point Likert Scale ranging from 0 (*Never*) to 3 (*Always*). Example items for each scale include: (a) attachment; *My child enjoys spending time with me* and *When my child is upset, I can calm him or her*, (b) discipline practices; *It is important for a child to follow family rules* and *I punish my child if he or she talks back to an adult*, (c) involvement; *I teach my child how to play new games* and *My child and I plan things to do together*, (d) parenting confidence; *It is easy for me to make decisions about what my child should do* and *I remain calm when dealing with my child's misbehavior*, and (e) relational frustration; *My child is hard for me to handle* and *I lose my patience with my child*. The internal consistency for the various scales ranges from .76 to .86. The test-retest reliability across the scales ranges from .75 to .89. The intercorrelation coefficients across the various scales ranges from -.01 to .67. The relational frustration scale is negatively correlated with attachment, involvement, and

parenting confidence indicating that higher levels of parental frustration are associated with more problematic parent-child relationships. In addition, correlations with the Parent-Child Relationship Inventory (PCRI; Gerard, 1994) and the PRQ-P scales range from $-.54$ to $.57$. The correlations with the child domain of the Parenting Stress Index, Third Edition (PSI; Abidin, 1995) and the PRQ-P scales range from $-.35$ to $.44$. The correlations with the parent domain of the PSI ranged from $-.44$ to $.53$. Correlations between the composite scores of the PSI and the PRQ-P ranged from $-.37$ to $.47$. Correlations were also run with the Behavior Assessment System for Children, Second Edition (BASC-2) with results ranging from $-.26$ to $.51$. Across these correlations the negative correlation values are associated with opposite interpretations of low and high scores (e.g., parents who experience lower levels of frustration and higher levels of attachment reported having higher levels of support, involvement, communication and parenting satisfaction).

Scoring of the PRQ-P was done through the computer based scoring program. The scoring system produced *t* scores for each of the scales assessed on the PRQ-P (i.e., attachment, discipline practices, involvement, parenting confidence and relational frustration). For each scale higher scores indicate less concern except for relational frustration where lower scores indicate less concern. Table 2 identifies the *t* score ranges for each scale.

Procedures

Approximately 450 families/900 participants (450 mothers and 450 fathers) were

Table 2

PRQ-P Scaled Score Classification

Scale	10-30	31-40	41-59	60-69	70+
Attachment	Lower extreme	Significantly below average	Average	Significantly above average	Upper extreme
Discipline practices					
Involvement					
Parenting confidence					
Relational frustration					

approached for participation. Approximately 250 families (125 mothers and 125 fathers) were approached from an early intervention program for the disability sample and approximately 200 families (100 mothers and 100 fathers) were approached for the sample of typically developing children. For each group, two-parent homes of children between the ages of 1½ to 3 years were targeted. One hundred twenty participants were identified; however, 11 were thrown out due to incomplete data (missing one or more survey) leaving a total sample of 109.

Mothers and fathers of children with disabilities were recruited from an early intervention program. Parents completed forms independent of each other for one child between the ages of 1½ to 3 years. Children in this early intervention program qualify for and receive services under Part C of the Individuals with Disabilities Education Improvement Act. The primary researcher trained the early intervention program staff regarding the pertinent information about the study and then during home visits the staff explained the study to the parents. If the parents did not want to participate in the study then the early intervention staff member returned the packets to the primary researcher. If

the parents decided to participate then they were provided with a letter of information, the AQS-C, PRQ-P, demographic form and a stamped return envelope. Forms contained unique code numbers (one code number per mother/father dyad) but parents were asked to provide no identifying information on the forms. Each parent was provided with an individual packet in a sealed envelope containing these items. Upon completion, participants mailed the surveys in the provided envelope back to the primary researcher. In addition, permission was obtained to do a one-time follow-up 1 month after initial contact if completed surveys had not been received. The follow-up was done to determine whether or not the participant was still interested in participating and still had the necessary documents to complete participation. While code numbers were linked to names to allow for follow-up, as soon as the one reminder letter was sent the list of names and code numbers was destroyed. Only two participants required a follow-up. Mothers and fathers were asked to complete the forms independently.

Mothers and fathers of typically developing children were recruited through undergraduate psychology classes at Utah State University during the spring semesters in 2012 and 2013. Recruitment was also attempted through daycares and preschools in Logan, Utah, as well as daycares on the Hawaiian Island of Maui; however, no participants were obtained from any of these organizations. The primary researcher contacted professors to receive permission to make an announcement in class describing the study. Packets in a sealed envelope containing the letter of information, demographic form, AQS-C, PRQ-P and a stamped return envelope were left in classes for those who chose to participate. Surveys were returned through the professors to the primary

researcher through the psychology department at Utah State University upon completion. Mothers and fathers were asked to complete the forms independently. For the typical sample, no follow-up was completed and no names were obtained for any purposes. Some participants put identifying information on the PRQ-P form but that information was immediately blocked out with a sharpie marker.

For participants in both the disability and typical samples who had two children within the target age range half of these participants were told to fill out the measures based upon their oldest child and the other half of participants were told to fill out the measures based upon their youngest child. Directions were provided at the top of the demographic form indicating to the participant as to which child the measures should be filled out about.

CHAPTER IV

RESULTS

Preliminary Analyses

Internal consistency was calculated for each scale to determine the reliability of each scale. They ranged from .88-.96. Table 3 contains all scales.

Correlations were also run between all scales to determine the relationship between each scale used. The AQS-C total was significantly correlated with all of the PRQ-P scales with the exception of the PRQ-P discipline practices scale. Table 4 shows all correlation data. These data indicate that a more secure attachment is associated with increased parental involvement, increased parenting confidence and decreased relational frustration. The intercorrelation coefficients across the PRQ-P scales range from -.45 to .54.

Correlations were also run between all scales across parent gender to determine if the relationship between each scale was different across gender. Table 5 contains all

Table 3

Cronbach's Alpha for Scales Across Total Sample

Scale	Cronbach's alpha
AQS-C total	.96
PRQ-P attachment	.94
PRQ-P discipline practices	.90
PRQ-P involvement	.93
PRQ-P parenting confidence	.89
PRQ-P relational frustration	.88

Table 4

Correlations Between AQS-C and PRQ-P Scales for Total Sample

Scale	1		2		3		4		5		6	
	<i>r</i>	<i>p</i> value										
1. AQS-C total	1											
2. PRQ-P attachment	.42	.000	1									
3. PRQ-P discipline practices	.05	.60	.13	.20	1							
4. PRQ-P involvement	.35	.000	.54	.000	.13	.17	1					
5. PRQ-P parenting confidence	.48	.000	.51	.000	.22	.02	.41	.000	1			
6. PRQ-P relational frustration	-.43	.000	-.35	.000	.18	.07	-.23	.02	-.45	.000	1	

N = 109.

Table 5

Correlations Between AQS-C and PRQ-P Scales for Fathers

Scale	1		2		3		4		5		6	
	<i>r</i>	<i>p</i> value										
1. AQS-C total	1											
2. PRQ-P attachment	.36	.009	1									
3. PRQ-P discipline practices	.12	.39	.42	.002	1							
4. PRQ-P involvement	.38	.006	.44	.001	.17	.24	1					
5. PRQ-P parenting confidence	.43	.002	.59	.000	.33	.019	.36	.009	1			
6. PRQ-P relational frustration	-.41	.003	-.28	.047	.18	.29	-.10	.49	-.51	.000	1	

N = 52.

correlations for males and Table 6 contains all correlations for females. These data indicate that a more secure attachment is associated with increased parental involvement, increased parenting confidence and decreased relational frustration for both mothers and fathers. In addition, it is noted that these correlations indicate that a more secure attachment is associated with greater consistency in discipline practices for fathers but not mothers on the PRQ-P attachment measure.

Research Question

To address the research question regarding whether there are differences in attachment security between mothers and fathers with children with and without a developmental delay, six two-way between subjects analyses of variance were run with the gender of parent and disability status of the child as the independent variables and

Table 6

Correlations Between AQS-C and PRQ-P Scales for Mothers

Scale	1		2		3		4		5		6	
	<i>r</i>	<i>p</i> value										
1. AQS-C total	1											
2. PRQ-P attachment	.46	.000	1									
3. PRQ-P discipline practices	-.008	.95	-.13	.33	1							
4. PRQ-P involvement	.32	.014	.66	.000	.10	.46	1					
5. PRQ-P parenting confidence	.53	.000	.48	.000	.14	.32	.48	.000	1			
6. PRQ-P relational frustration	-.46	.000	-.43	.001	.18	.17	-.38	.004	-.41	.002	1	

N = 52.

scores on the measures (i.e., AQS-C total score, the PRQ-P attachment scale, PRQ-P discipline practices, PRQ-p involvement, PRQ-P parenting confidence, and PRQ-P relational frustration) as the dependent variables. The only significant interaction found was on the PRQ-P Involvement Scale. This interaction indicated that mothers reported similar involvement with their children regardless of disability status of the child; however, fathers of typically developing children reported higher levels of involvement with their children than fathers of children with a disability. See Table 7 for mean and standard deviations on all measures and Table 8 for two-way analysis of variance data.

While significant interactions were not found for any other scales, there were significant main effects for child disability status for the AQS-C Total, the PRQ-P attachment scale, the PRQ-P discipline practices scale, and the PRQ-P parenting confidence scale. For each of these main effects parents of typically developing children reported higher scores than parents of children with disabilities indicating that parents of typically developing children feel more securely attached, are more consistent in addressing child misbehavior, and feel more confident in making parenting decisions than parents of children who have a disability. It is noted that the mean PRQ-P scales all fell within the average range across both groups (average t score = 41-59). Refer to Table 9 for means and standard deviations by child disability status and Table 10 for means and standard deviations by gender of parent.

Cohen's d effect sizes were also calculated to further examine mean differences for disability status (see Table 11). For fathers there were medium or large effect sizes for all scales except the PRQ-P Relational Frustration scale with fathers of typically

Table 7

Descriptive Statistics for Gender Based on Disability Status

Scale	Typical						Disability					
	Male (<i>n</i> = 27)			Female (<i>n</i> = 30)			Male (<i>n</i> = 25)			Female (<i>n</i> = 27)		
	<i>M</i>	<i>SD</i>	Range	<i>M</i>	<i>SD</i>	Range	<i>M</i>	<i>SD</i>	Range	<i>M</i>	<i>SD</i>	Range
AQS-C total	.33	.21	-.08 – .74	.33	.22	-.06 – .74	.15	.23	-.32 – .54	.25	.28	-.24 – .64
PRQ-P attachment	52.67	8.74	40 – 68	53.57	8.91	42 – 68	45.84	8.80	25 – 61	50.00	10.63	25 – 66
PRQ-P discipline practices	50.85	10.01	37 – 67	49.17	8.23	31 – 67	45.16	10.60	25 – 61	44.63	10.91	24 – 65
PRQ-P involvement	55.37	11.64	40 – 75	51.87	9.94	37 – 70	46.12	10.11	30 – 70	51.67	10.47	35 – 70
PRQ-P parenting confidence	49.37	7.05	29 – 63	47.70	10.24	27 – 67	43.6	8.93	23 – 60	44.19	10.14	17 – 64
PRQ-P relational frustration	53.41	10.30	31 – 74	54.87	10.71	27 – 73	55.16	9.85	37 – 71	55.18	11.06	34 – 83

Table 8

Two-Way ANOVA Across Scales

Scale	Source	<i>df</i>	<i>F</i>	<i>p</i> value
AQS-C total	Gender	1,107	1.20	.28
	Child disability	1,107	8.75	.004
	Interaction	1,107	1.38	.24
PRQ-P attachment scale	Gender	1,107	2.01	.16
	Child disability	1,107	8.47	.004
	Interaction	1,107	.83	.36
PRQ-P discipline practices scale	Gender	1,107	.34	.56
	Child disability	1,107	7.19	.008
	Interaction	1,107	9.05	.76
PRQ-P involvement scale	Gender	1,107	.25	.62
	Child disability	1,107	5.44	.02
	Interaction	1,107	4.99	.03
PRQ-P parenting confidence scale	Gender	1,107	.11	.74
	Child disability	1,107	6.78	.01
	Interaction	1,107	.38	.54
PRQ-P relational frustration	Gender	1,107	3.13	.08
	Child disability	1,107	.05	.82
	Interaction	1,107	.04	.84

Table 9

Descriptive Statistics for Total Disability Status

Scale	Typical (<i>n</i> = 57)			Disability (<i>n</i> = 52)		
	<i>M</i>	<i>SD</i>	Range	<i>M</i>	<i>SD</i>	Range
AQS-C total	.33	.21	-.08 – .74	.20	.26	-.32 - .64
PRQ-P attachment	53.14	8.76	40 – 68	48.00	9.92	25 – 66
PRQ-P discipline practices	49.96	9.08	31 – 67	44.88	10.67	24 – 65
PRQ-P involvement	53.53	10.83	37 – 75	49.00	10.58	30 – 70
PRQ-P parenting confidence	48.49	8.82	27 – 67	43.94	9.49	17 – 64
PRQ-P relational frustration	54.18	10.16	27 – 74	55.50	10.40	34 - 83

Table 10

Descriptive Statistics for Total Gender

Scale	Male (<i>n</i> = 52)			Female (<i>n</i> = 57)		
	<i>M</i>	<i>SD</i>	Range	<i>M</i>	<i>SD</i>	Range
AQS-C total	.25	.24	-.32 - .74	.29	.25	-.24 - .74
PRQ-P attachment	49.38	9.34	25 – 68	51.88	9.84	25 – 68
PRQ-P discipline practices	48.12	10.60	25 – 67	47.02	9.78	24 – 67
PRQ-P involvement	50.92	11.79	30 – 75	51.77	10.10	35 – 70
PRQ-P parenting confidence	46.63	8.43	23 – 63	46.04	10.24	17 – 67
PRQ-P relational frustration	54.25	10.02	31 – 74	55.32	10.51	27 – 83

Table 11

Mean Difference Effect Sizes for Disability Status

Scale	Total	Male	Female
AQS-C total	.56	.84	.33
PRQ-P attachment	.56	.80	.37
PRQ-P discipline practices	.52	.56	.48
PRQ-P involvement	.43	.86	.02
PRQ-P parenting confidence	.50	.72	.35
PRQ-P relational frustration	-.13	-.18	-.03

developing children reporting higher means than fathers of children with a disability.

This indicated that fathers of typically developing children feel more securely attached, are more consistent in addressing child misbehavior, are more involved in joint activities and feel more confident in making parenting decisions with their children than fathers of children with a disability. In addition, effect sizes for mothers were all small except for PRQ-P Involvement and PRQ-P Relational Frustration which were both non-meaningful.

These effect sizes indicated that child disability status seems to have less impact on

mother-child interactions than father-child interactions.

Exploratory Analysis

This study also conducted an exploratory analysis to examine whether or not child gender had an impact on outcomes (see Table 12). This was done by conducting six two-way between subjects analyses of variance with the gender of child and child disability status as the independent variables and scores on the measures (i.e., AQS-C total score, the PRQ-P attachment scale, PRQ-P discipline practices, PRQ-P involvement, PRQ-P parenting confidence, and PRQ-P relational frustration) as the dependent variables (see Table 13). The only significant interaction was on the AQS-C. This indicated that there was not much difference in parents' reports of attachment security to their female children across disability status; however, parents of male children who did not have a disability reported being more securely attached than parents of male children with a disability. There were also significant main effects found for both child gender and disability status across the PRQ-P scales for attachment, discipline practices and relational frustration. In addition, a significant main effect for child disability status was found for the PRQ-P parenting confidence. These indicated that parents of female children feel more securely attached and experience less relational frustration than parents of male children while parents of male children are more consistent in addressing child misbehavior than parents of female children. Additionally, these indicated that parents of typically developing children feel more confident in making parenting decisions than parents of children who have a disability.

Table 12

Descriptive Statistics for Child Gender Based on Disability Status

Scale	Typical						Disability					
	Male (n = 34)			Female (n = 23)			Male (n = 35)			Female (n = 17)		
	M	SD	Range	M	SD	Range	M	SD	Range	M	SD	Range
AQS-C total	.34	.17	-.004 – .74	.33	.27	-.08 – .74	.13	.26	-.32 – .57	.35	.19	-.02 – .64
PRQ-P attachment	51.94	7.6	40 – 68	54.91	10.17	40 – 68	46.63	9.11	25 – 64	50.82	11.17	25 – 66
PRQ-P discipline practices	51.24	9.04	31 – 67	48.09	8.99	37 – 67	46.31	10.45	25 – 65	41.94	10.78	24 – 63
PRQ-P involvement	54.56	10.22	37 – 75	52.00	11.73	37 – 75	47.86	9.75	30 – 70	51.35	12.08	35 – 70
PRQ-P parenting confidence	48.82	7.44	33 – 67	48.00	10.71	27 – 67	42.91	10.04	17 – 64	46.06	8.11	29 – 61
PRQ-P relational frustration	54.79	10.37	27 – 74	53.26	10.01	34 – 73	57.40	10.26	37 – 83	51.59	9.82	34 – 68

Table 13

Two-Way ANOVA Across Scales

Scale	Source	<i>df</i>	<i>F</i>	<i>p</i> value
AQS-C total	Child gender	1,107	5.24	.02
	Child disability	1,107	4.19	.04
	Interaction	1,107	6.26	.01
PRQ-P attachment scale	Child gender	1,107	3.74	.06
	Child disability	1,107	6.44	.01
	Interaction	1,107	.109	.74
PRQ-P discipline practices scale	Child gender	1,107	3.69	.06
	Child disability	1,107	7.98	.006
	Interaction	1,107	.098	.76
PRQ-P involvement scale	Child gender	1,107	.048	.83
	Child disability	1,107	2.94	.09
	Interaction	1,107	1.99	.16
PRQ-P parenting confidence scale	Child gender	1,107	.40	.53
	Child disability	1,107	4.57	.03
	Interaction	1,107	1.17	.28
PRQ-P relational frustration	Child gender	1,107	3.25	.07
	Child disability	1,107	.052	.82
	Interaction	1,107	1.10	.30

CHAPTER V

DISCUSSION

This study aimed to provide greater insight into whether or not the existence of a disability in a child is related to differences in perceived attachment security among parents and if differences exist across mothers and fathers when a child has a disability. This was assessed through the use of the PRQ-P (Kamphaus & Reynolds, 2006) and AQSC (Roggman et al., 2002) self-report measures. This study used two self-report measures to assess attachment relationships instead of one measure due to the lack of strong, well-established self-report measures in assessing attachment. It is argued that the use of two measures may increase the likelihood of truly assessing attachment relationships.

A variety of areas of parenting were assessed in addition to attachment relationships using the PRQ-P including discipline practices, involvement, parenting confidence and relational frustration. While effect sizes among mothers' reports across disability status were small or nonmeaningful there were notable differences among fathers' across disability status in all areas assessed except relational frustration. Results indicated that overall, fathers of typically developing children felt more securely attached, were more consistent in addressing child misbehavior, were more involved in joint activities and felt more confident in making parenting decisions with their children than fathers of children with a disability. Results suggest that the existence of a disability in a child has a greater impact on fathers' parenting and ability to form a secure attachment than it does for mothers. This study supports the previous body of research

indicating differences in how attachment relationships are formed with children between mothers and fathers given that fathers of children with a disability experienced greater difficulty in forming a secure attachment with their child than mothers of a child with a disability (George et al., 2010; Goodsell & Meldrum, 2010; Grossman et al., 2002; Hazen et al., 2010).

Previous research has found that key factors in the development of a secure attachment within the father-child dyad include paternal sensitivity, availability during times of distress, involvement and highly stimulating play (Brown et al., 2007; Freeman et al., 2010; Grossman et al., 2002; Hazen et al., McFarland et al., 2010). Results from this study suggest that these key components are potentially more difficult to achieve for fathers of children who have a disability compared to fathers of typically developing children.

Additionally, previous research has found that some of the key factors in the development of a secure attachment within the mother-child dyad include maternal sensitivity, remaining positive and not feeling resentful, engagement in similar activities, responsiveness to a child's needs and involvement (Grossmann et al., 2002; Posada et al., 2007; von der Lippe et al., 2010). This study suggests that whether or not a child has a disability potentially has little impact on a mother's ability to engage in these key factors and develop a secure attachment with their child.

It is unclear as to why child disability status appears to impact fathers more than mothers; however, it is hypothesized that it may be easier for mothers to readjust their framework in forming a secure attachment with their child than it is for fathers when the

child has a disability. Perhaps given that one key component of the development of a secure attachment within the father-child dyad is the ability to engage in highly stimulating play (e.g., throwing the child up in the air, spinning the around, etc.) fathers of children with a disability may find it more difficulty to engage in such activities given that physical play may be more difficult for some children to participate in. It is also hypothesized that fathers may be unsure of how to form a secure attachment to their child when they are unable to engage in highly stimulating play given their child's disability. This study found that fathers of children with a disability reported lower levels of involvement across all other groups assessed. Items assessed in this area include, *My child and I play games together* and *I teach my child how to play new games*. It appears that it may be more difficult for fathers to find ways of remaining involved with their child when the child has a disability than it is for mothers or fathers of typically developing children. Previous research has also found that the formation of a securely attached relationship has a lot to do with a parents' ability to understand their child's needs and a child's ability to communicate (Howe, 2006; Meins, 1999). It was noted in this study that the majority of children with a developmental delay were receiving speech and language services. Therefore, perhaps it is more difficult for fathers to understand and interpret the needs of their child depending on the child's level of communication skills than for mothers making it more difficult for fathers to be responsive to their child's needs (Goodsell & Meldrum, 2010). Given the limited research on father-child attachment relationships it is likely that additional factors not mentioned may have an impact on the results of this study but are areas of research that have not yet been

explored.

This study has a few limitations including the homogeneity of the participants. The majority of the sample size (93.6%) was Caucasian and had some level of college education (90.8%). In addition, the entirety of the sample came from one geographic area. Therefore, these results while informative cannot be directly applied outside of these demographics. The participants also self-selected to be in the study and therefore, may not be an accurate portrayal of typical families in the area. Another limitation of this study is that all data were obtained from self-report measures meaning that all data are based solely on participants' perceptions of how they portrayed themselves through the self-report measures. Additionally, this study did not examine parent-specific factors (e.g., parents own disability status, parents psychological well-being, etc.) that may have an impact on attachment formations. This study also did not ask specifics in regards to the severity of the disability of the child; therefore, it is unknown as to what types of child disabilities impacted the results.

Despite the limitations of the study there are still significant implications, especially for the early intervention program where the disability sample was acquired. The results of this study suggest that forming attachment relationships with children who have a disability is more difficult for fathers than mothers. It is hypothesized that it may be more difficult for fathers to understand the needs of their child or be able to engage in more active play. Perhaps fathers' of children with a disability find it more difficult to interact with their child because of the limitations of the child and have difficulty finding alternative ways or modifications to the kind of highly stimulating play they engage in to

develop a secure attachment with their child.

It may be beneficial for early intervention programs to develop programs and interventions for fathers to find alternative ways to develop a secure attachment with their child. Such programs could include classes specifically for fathers of children with a disability in which fathers can learn from an instructor as well as from each other in alternative ways to interact with their child, how to better understand their child's needs and develop a secure attachment. In addition, in home service may be a beneficial intervention in helping fathers feel more comfortable and confident in interacting with their child to help foster the development of a secure attachment.

Further research will be needed to examine if outcomes are the same among various race and education levels as well examining potential cultural differences in parenting and the formation of a secure attachment. In addition, further research must be done to examine what factors impact fathers' difficulty in forming securely attached relations with their children who have a disability as well as the impact on children. Future research on the factors related to the development of a secure attachment between the father-child dyad when the child has a disability is also needed to better understand what is contributing to the attachment relationship between father and child. Another area of future research would be to examine parent-specific factors (e.g., parent psychological well-being, etc.) that might be related to the parent-child attachment relationship.

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APPENDIX

Demographic Form—Clinical Sample

Please complete the following on your child who is between the ages of 1 ½-3 and currently receiving services through the Up to 3 Program. If you have more than one child in this age range and receiving services, please complete on your oldest [youngest] child.

1) Your age: _____

2) Child's age: _____

3) Total Number of children: _____

4) Total Number of children with disabilities: _____

4) Your gender

Male

Female

5) Child's gender

Male

Female

6) Relationship to your child

Biological Mother

Non-Biological Mother

Biological Father

Non-Biological Father

7) Race/Ethnicity (*Check all that apply*)

Asian

Pacific Islander

African American

Caucasian

Hispanic/Latino

Native American

Other _____

8) Annual Household Income

Less than \$15,000

\$15,000 – 30,000

\$30,000 – 45,000

\$45,000 – 60,000

\$60,000 – 75,000

- \$75,000 – 90,000
- More than \$90,000

9) Education

- Less than high school graduate College graduate / Bachelor's degree
- High school graduate Graduate or Professional degree
- Some college / Associate's degree

10) Current Marital Status

- Married
- Divorced
- Widowed
- Never Married
- Other _____

11) Religion (*Check one you most identify with*)

- Catholic
- Protestant
- LDS
- Muslim
- Jewish
- Eastern (e.g., Buddhist)
- Atheistic/Agnostic
- Other

12) Type of services child is receiving from Up to 3 (*check all that apply*)

- Family Training
- Speech and Language Therapy
- Occupational Therapy
- Physical Therapy
- Behavioral/Psychological Services
- USDB, Vision & Hearing
- Nutrition Services
- Service Coordination
- Nursing Services
- Social Work Services
- Assistive Technology Services

Demographic Form—Normative Sample

Please complete the following on your child who is between the ages of 1 ½-3. If you have more than one child in this age range please complete on your oldest [youngest] child.

1) Your age: _____

2) Child's age: _____

3) Total Number of children: _____

4) Total Number of children with disabilities: _____

5) Your gender

Male

Female

6) Child's gender

Male

Female

7) Relationship to your child

Biological Mother

Non-Biological Mother

Biological Father

Non-Biological Father

8) Race/Ethnicity (*Check all that apply*)

Asian

Pacific Islander

African American

Caucasian

Hispanic/Latino

Native American

Other _____

9) Annual Household Income

Less than \$15,000

\$15,000 - 30,000

\$30,000 - 45,000

\$45,000 - 60,000

- \$60,000 – 75,000
- \$75,000 – 90,000
- More than \$90,000

10) Education

- Less than high school graduate College graduate/ Bachelor's Degree
- High school graduate Graduate or Professional degree
- Some college/ Associate's Degree

11) Current Marital Status

- Married
- Divorced
- Widowed
- Never Married
- Other _____

12) Religion (*Check one you most identify with*)

- Catholic
- Protestant
- LDS
- Muslim
- Jewish
- Eastern (e.g., Buddhist)
- Atheistic/Agnostic
- Other

13) Does your child have a disability or has you child ever received services for a disability? (*From a doctor, early intervention program, etc.*)

- Yes
- No

14) Has your child ever received counseling, therapy, or behavioral services?

- Yes
- No