

**Maximising abilities of individuals with intellectual disabilities: importance of parental
self-efficacy**

Jordan McCann

BA (Hons) Psychology

Abstract:

A parent's level of self-efficacy effects how they as parent behave and interact with their child. This is essential, especially for parents of child with ASD, as a much higher level of investment is required to help a child with ASD realize their potential. Previous research has highlighted the importance of self-efficacy in parents in a child's education and social development. This study used a sample of 42 parents (males n= 16; females n= 26) of children with ASD to examine how demographic factors (*i.e age, gender and hours psent working per week*) can affect their self-efficacy. Majority of the sample used was provided by Autism Ireland. Correlation between IVs and DVs (parental efficacy & perceived self-efficacy) were observed using various statistical methods. Results show there to be a correlational relationship between the age of the parent and the levels of perceived self-efficacy (PSE). Results are supported by previous research that also examined age as a predictor for levels of self-efficacy.

Literature Review

Autism (ASD) is a neurodevelopmental disorder, generally characterized by two characteristics; (a) deficits in communication and social skills across a variation of different contexts and (b) and is restricted by repetitive patterns of behaviours (American Psychiatric Association, 2013). Research suggests that the prevalence of people who have ASD is steadily increasing. The Autism and Developmental Disabilities Monitoring Network (2014) show there to be a drastic increase from 1960 to present day; 1 in 2000 children in the 1960s in contrast to 1 in 68 in 2010 making it the fastest growing development disorder. The Autism and Developmental Disabilities Monitoring Network (2014) also report there being higher prevalence amongst males and suggesting it to be as high as 1 in 42 boys. A significant subset with autism (ASD) also has intellectual disability, previously known in the DSM as mental retardation. The DSM-5 (Diagnostic Manual of Mental Disorders) provided a revised diagnosis of intellectual disabilities (intellectual development disorder), making changes from the DSM-4. This change is aimed to encourage a more comprehensive assessment of a patient. Most notable is the manual's move away from the multi-axial approach to identifying the disorder. This approach is designed to allow for a comprehensive diagnosis of a disorder, by looking at the "complete picture" of a disorder, by looking at an entire scope of factors that affect mental health and not just acute symptoms of the disorder. In the DSM-4, intellectual disabilities were on Axis II, to ensure clinicians were able to identify associated impairments alongside other mental disorders. In the DSM-5, all mental disorders will be considered on a single axis, meaning they will have equal weight. Intellectual disability is defined as an impairment of general mental abilities which affect one's adaptive functioning in three separate domains. (a) Conceptual domain; includes skills such as language, reading, writing, math, knowledge and memory. (b) Social domain; this includes social judgement, interpersonal skills, communication skills and other similar capacities. (c) Practical domain; the domain centers on self-management (personal care, money management, organization in school and work tasks etc.) (American Psychiatric Association, 2013). Over recent decades, there

has been an increased amount of attention aimed at the identification and response to individuals who suffer from mental health disorders (Lindsey, 1997; Tonge, 1999; Dykens, 2000). Cognitive and adaptive limitations appear prior to the age of 18 (Luckasson et al., 2002, 2003). These limitations may affect functioning in every aspect of an individual's ability, particularly however in their ability to control emotion, deal with stress and cope with problems they may experience throughout life (Morin et al., 2010). Severity of these limitations varies from individual to individual, meaning that the population of people with intellectual disabilities is that of a multifarious and highly complex nature (Morin et al., 2010; American Psychiatric Association, 2013). Research has identified numerous causes of intellectual disabilities (genetic conditions, problems during pregnancy, problems during birth and problems with health) (Center for Parent Information and Resources, 2011). Intellectual disability is the most common form of developmental disability in today's society. It is estimated that in the United States alone, 6.5 million individuals have an intellectual disability or 1.5-2.5% of the general population (The American Association on Intellectual & Developmental Disabilities, 2011).

Due to the characteristics of the disorder, people who are diagnosed as having ASD require additional care. Due to the rapid growth in prevalence and studies which suggesting there to be substantial gains from interventions which are implemented at a young age, research has shifted its emphasis on early intervention (McGee, Daly, & Jacobs, 1994; Dawson et al., 2009). Research has also shown that infants can be reliably diagnosed with autism at 2 years of age (Lord, 1995). With increased awareness of ASD and its ever increasing prevalence amongst the population, educational establishments are met with higher expectations on the level of schooling that is provided for individuals with ASD (Newacheck, Hung, Hochstein, & Halfon, 2002; Mandell & Palmer, 2005; McKenney, 2015). However, the inclusion of students with autism into the schooling system has been an area of grave controversy for many years (Repp, 1996; Stainback et al., 1995). A study, which examined data on inclusion relative to each disability showed that there is an increased trend in individuals with ASD being served in inclusive settings; data suggested that from the years 1990-

1991, 5% of students who had ASD were included compared to 24% of students with ASD who were included from 2003-2004 (Office of Special Education Programs, 2004). Education of individuals on the autism spectrum should begin as early as possible and should remain consistently available to the individual as they mature through adolescence and adulthood; these programs should have goals in social responsiveness, cognitive ability and verbal and non-verbal communication specific to the needs of each individual (Handleman et al., 2005). Although there is no specific treatment as emerged for individuals with ASD with regards to education, several various methods have shown high levels of efficiency in research settings are now commonly perceived as adequate practice for early intervention/educational environments (Stahmer & Aarons, 2009). Particularly applied behavioural analytic (ABA) programs which have shown consistent, positive results/outcomes (Anderson, Avery, DiPietro, Edward & Christian, 1987; Harris, Handleman, Gordon, Kristoff & Fuentes, 1991; Sallows & Graupner, 2005; Howard, Sparkman, Cohen, Green, & Stanislaw, 2005). Applied behavioural analysis is a method used commonly in helping to educate individuals with autism. It is a process of identifying and modifying behaviours to produce positive outcomes in an individual's cognitive and social capabilities (Harris et al., 1991). It is approximated that over 50% of individuals with autism who receive such treatment show significant improvements in their cognitive capability and social responsiveness and are often placed in regulatory educational classrooms with little or no assistance (Weiss et al., 2006). Other studies suggest that individuals who received 1:1 attention whilst participating in an applied behavioural analysis program often achieved a normal level of educational and intellectual functioning (Perry, Cohen, & DeCarlo, 1995). Whereas other studies suggest that less substantial improvements can be documented in individuals who participate in less intensive programs (Birnbrauer & Leach, 1993); vast majority of such studies involved kindergarten and preschool aged children (Hillman, 2006). Following a review of literature regarding the outcome of receiving behavioural therapy, research suggests that individuals with autism in schools who received such therapy for a minimum of 1 year showed significant improvements, via standardised

testing (Kabot et al., 2003) in their cognitive, language and social skills as well as adaptive functioning (Smith, 1999, 2000). Further research supported these findings; modest, positive changes were documented in groups that received intensive behavioural therapy compared to a control group of students who received less intensive behavioural therapy or parental based treatment delivery who showed less significant improvements (Sallows & Graupner, 2005; Howard et al., 2005; Weisz, Sandler, Durlak & Anton, 2005). Review of literature indicates that past research involving ASD has focused on the treatment of core features of ASD; joint attention, play skills, communication and imitation (Green et al., 2010; Carter et al., 2011; Aldred, Green & Adams, 2004).

Recent research has identified parental training for families with children who have ASD as a possible intervention model (Lesack et al., 2014). Firstly, parental training has shown to be highly effective in the treatment of typically able children who display disruptive behaviours (Kazdin & Rotella, 2005; Reyno & McGrath, 2006). Secondly, the individual has a limited window of time which he or she receives behavioural therapy as well as a range of other professional services such as school (Kogan et al., 2008). Finally research indicates that interventions have shown to be more effective with the presence of a family member and not just solely a therapist/teacher (Buschbacher, Fox, & Clarke, 2004); studies also show that parental direction during these interventions also promotes generalisation to the home environment, which effectively maximises the amount of intervention a child receives (Girolametto & Tannock, 1994). Studies suggest that parents who are adequately trained to identify disruptive or problematic behaviours in their children, who have ASD, increase the chances of reducing problem behaviours and increasing the child's compliance which could be beneficial in the child's education (Lesack et al., 2014). Supporting research for parental training as a useful intervention method for disruptive behaviours in individuals with ASD are predominantly produced from single subject study designs and a miniscule number of clinical trials (Bearss, Johnson, Handen, Smith, & Scahill, 2013; Tonge, Brereton, Kiomall, Mackinnon, & Rinehart, 2012; Whittingham, Sofronoff, Sheffield, & Sanders, 2009). Drawbacks of such studies include small sample

sizes, poor characterisation of samples and nonrandom treatment assignment (Lesack et al., 2014). Parent-Child Interaction Training (PCIT) is an empirically proven, well established and family-based method of intervention aimed at addressing disruptive behaviours in children with ASD that may hinder their development (Eyeburg & Funderburk, 2011). Parental-Child Interaction was originally based on John Bowlby's attachment theory (1969) as it promotes a strong relationship between the child and caregiver, as well as Skinner's theory on operant conditioning (Skinner, 1953), utilising differential reinforcement as a method of modifying behaviour. However, parenting a child with autism can be challenging. Studies show that parents who have children with developmental disability such as autism have significantly higher levels of stress psychological distress compared to parents of typically able children (Baker-Ericzen et al., 2005; Abbeduto, Seltzer, Shattuck, Krauss, Orsmond & Murphy, 2004). As well as suggesting additional stress is directly related to parenting a child with ASD, studies also found that parenting a child with autism can also increase the financial burden of the parent/caregiver (Jarbrink, Fombonne & Knapp, 2003; Montes et al., 2008; Xiong et al. 2011). A study examining the affect raising a child who has ASD on the lives of the parents/caregivers showed that parents of children with ASD were less likely to be employed and more likely to earn a lower income than parents of typically able children and children who suffer from mild health conditions (Ciday, Marcus & Mandell, 2012). Parents of children with ASD are stressed with the burden of the additional care that is required for the child as well as the decision making that accompanies it (Johnson et al., 2011). As well as these key factors, children with autism can also display disruptive and often violent behaviours; research suggests this to be a direct result of the individual's deficit in communication (Hoffman et al., 2008; Hoffman, Sweeney, Hodge, Lopez-Wagner, & Looney, 2009). Feetham (2011) believes that parents who are deemed mentally and physically healthy are most likely the best prepared to cope with the stress of having a child with ASD. Studies even show that when compared to parents of children with other developmental disabilities, parents of children with ASD report significantly higher levels of stress (Sanders & Morgan, 1997). Some believe the underlying

factor of these findings may be that there is an association between parental stress levels and the frequency of a child's maladaptive behaviour (Tomanik, 2004). Past research has shown there to be a negative association with parenting stress/depression with levels of self-efficacy (Jackson et al., 2000). As well as its association with parental stress and depression, research has also identified an association perceived self-efficacy and the well-being of the parent (Sahu et al., 2003). As well as being a mediating factor on the effect of a child's problematic behaviour on the parents level of anxiety and depression (Hastings & Brown, 2002). All parents develop cognitions based on their own experiences as a child, experiences in parenting and interactions with others and their environment; parental attitude is developed before the child is born and is developed and modified by interactions with the child; children with autism often display maladaptive behaviour which many may be a poignant factor in the parenting experience (Kuhn & Carter, 2006). A study, examining the effects of parenting a child with autism amongst a Latin sample, found that parents of children who displayed disruptive or violent behaviours were more likely to report experiencing negative emotions (Chavira, Lopez, Blacher, & Shapiro, 2000). Kuhn (2006) suggests that this indicates that cognitions about developmental disabilities such as ASD may affect how a parent (a) interprets their child's behaviour and their deficits in social and communication skills, (b) their feelings about their own competency as a parent and (c) and the affect of their negative experience in response to their child's behavioural issues.

One of the areas of parental cognition that has received a substantial amount of empirical attention is parental self-efficacy. Teti (1996) defined perceived parental self-efficacy as feelings of self-competence as a caregiver and perceived maternal self-efficacy is defined as a mother's belief in her competence in a care giving role and her ability to address specific behavioural issues or tasks. Self-efficacy is believed to be a mediator between thought and action; influencing an individual's behavioural consistency (Bandura, 1986). An example of this with regards parenting is that parents are more likely to be persistent in their positive behaviour if they feel it is having a positive impact. A

study showed that perceived self-efficacy has shown to buffer negative affects a parent may experience as well as improving their overall well-being (Ozeret al., 1995). Research showed that mother of children with developmental disabilities, including ASD, reported problems with feelings of competency compared to parents of typically able children (Beckman, 1991). Recent research suggests that perceived self-efficacy among parents of children with ASD can be enhanced through intervention; improving outcomes for both child and parent (Keen et al., 2010; Sofronoff et al., 2002). For example, a professionally constructed intervention which aimed to increase parent's feelings of competence, saw a reduction in maladaptive behaviour from the child and levels of parenting stress and a substantial increase in perceived self-efficacy (Weiss, 2015). Upon review of existing literature it is apparent that there is a limited body of research in the area of perceived parental self-efficacy amongst parents of children with autism. However, research suggests that a parent's perceived self-efficacy may be impacted a number of factors (Weiss, 2015). One of the most prevalent factors that impacted a parent's perception of their ability to care for their child was the age of the child itself; although research has produced various results as to how substantial its impact is (Kuhn et al., 2006; Benson, 2014), although Gray (2002) found that often parents may adjust to fulfill their child's needs as the child grows older. In a longitudinal study, with a sample of 113 mothers, Benson (2014) reported that levels of perceived self-efficacy remained relatively steady over a 7-year period. This was in contrast Kuhn et al., (2006) who found that levels of perceived self-efficacy increased as the child got older. Few studies have examined the impact that gender of the child has on levels of perceived self-efficacy. Lounds et al., (2007) found that parents of daughters often reported higher levels of caregiver satisfaction, psychological well-being as well lower levels of stress than that of parents of sons. White and Hastings (2004). Research suggests that demographic variables may be related with levels of overall efficacy of parents. Research has found that parental self-efficacy has been associated with numerous demographic factors including level of maternal education and family income, with low levels of maternal education being associated with low levels of self-efficacy within

parents (Coleman & Karracker, 2000). Benedict et al. (2006), believed these results possibly represented that parents of higher socioeconomic status have greater abilities in being able to advocate for their child's needs. Extensive research has shown that parents of higher levels of education and greater socioeconomic status are more likely to seek appropriate services for their child who have autism spectrum disorder (Chiri et al., 2012; Shattuck, 2011). Chiri et al., (2012), suggests that these results infer that parental self-efficacy levels may have an effect on the behaviour of that parent toward actively seeking services for their child with autism spectrum disorder and socially supporting their additional needs with regards to encouraging self-reliance with independence and education. A study which aimed to observe factors that may cause deficits in child/parent relationships and hinder the development of parental competency found that self-efficacy was positively related with parental bond and competency (Mallinckrodt, 1992). Weiss et al. (2015), attempted to further examine difficulties that parents with children who have autism spectrum disorder face on a day-to-day basis by examining demographic factors including age, gender of the child and immigrant status. Weiss (2015) conducted research using a sample of 324 participants which examined how these demographic factors may affect one's levels of self-efficacy; results show that parental self-efficacy levels is related to numerous variables and not just related to the clinical diagnosis of the child. Weiss (2015) believes that this highlights issues that may not have been apparent prior; suggests that due to the vital role in which parents play throughout their child's lives it is crucial that awareness amongst these parents is ensured so that they are competent in their efforts to seek additional services that their child may require. Strunk et al., (2014) conducted qualitative research examining the difficulties experienced by both parent and child as the child with autism spectrum disorder navigated through life with the aid of their parent. Analysing results using the Moustakas method, Strunk et al (2014)., the most prevalent theme expressed by parents was the need for resource and services that are designed to attend to their child's additional and specific needs. Strunk (2014) concluded that as well as the need to further broadcast information about

appropriate services for people ASD it is important that research attempts to further our understanding as to what variables may also factor how difficult an individual's experience as a parent may be.

Furthering our knowledge of variables that may affect a parent's levels of self-efficacy is necessary in order to ensure that services designed to support parents of children with autism are optimized to maximize effect. This is crucial as children who have been diagnosed with autism spectrum disorder often require additional services in many aspects including social support in the home environment (Dawson et al., 2009). Early interventions have shown to have positive outcomes with regards to an individual's educational and social development (Keen et al., 2010) although the effectiveness of these interventions varies depending on the parent's self-efficacy and competency. Further examining previously unobserved demographical factors such as age of parent, gender of parent and how many hours they spend working per week, and how they can affect a parent's self-efficacy, may help further our understanding of what difficulties a parent of a child with ASD may face. Thus, the following study aims to further our understanding of how demographic factors might be associated with a parent's levels of self-efficacy by examining three separate variables; age of participants, gender of participants and hours spent working per week. Understanding whether or not these factors have an effect on a parent's self-efficacy may be important in helping services aimed at supporting these individuals optimize their care. Ensuring parental self-efficacy is vital as research suggests parents with higher levels of self-efficacy are more active in providing social support and additional help that a child with autism spectrum disorder may require.

Method

Participants

This study consisted of 42 (Male: $n = 16$; Female $n = 26$) parents of children who have mild or moderate autism spectrum disorder. From the participants 11.9% ($n = 5$) were not employed, 11.9% ($n = 5$) worked 1-10 hours per week under employment, 23.8% ($n = 10$) worked 11-20 hours per week under employment and 52.4% ($n = 22$) of participants worked 21 or more hours per week.

Participants age ranged from 22 to 60 with an average age of 37.9 years ($SD = 7$).

Procedure

Majority of participants from this study were recruited through Autism Ireland (autismireland.ie) ($n = 29$) who contacted participants via email while the remaining participants were contacted directly via email ($n = 13$). Participants were required to complete an online survey which included information about the aims of the study, instructions on how to respond to each question and two questionnaires. Participants were informed prior that participation in the study was voluntary and also that any data they may have provided could also be withdrawn from the study at any time. Participants were then required to give consent before partaking in the study. Each participant's response was recorded online.

Measures

Demographic Form; This form contained three separate questions. First was age, for this participants were asked to enter how there. The next question was gender; participants were given the option of selecting either male or female. Finally, was hours spent working per week; options were 0 hours per week, 1-10 hours per week, 11-20 hours per week or 21+ hours per week.

Parent Self-Efficacy Scale; (Ranganathan & Montemayor, 2014) this is a 19-item scale that assesses parental self-efficacy. Each item used in the scale is measured on a 5-point Likert scale; ranging from 1= always to 5= never. Five items within this scale required reverse coding. The Parental Efficacy Scale (Ranganathan & Montemayor, 2014) is aimed at assessing parent's levels of self-efficacy, with a focus on the monitoring of their child. Most items within this scale were created specifically for its original study while some questions were based on items from five other questionnaires; Parenting Sense of Competence Scale (Johnston & Mash, 1989); the Comfort with Parenting Scale (Ballenski & Cook, 1982); the Maternal Efficacy Questionnaire (Teti & Gelfand, 1991); the Parental Locus of Control Scale (Campis, Lyman, & Prentice-Dunn, 1986); and the Parenting Self Agency Scale (Dumka, et al., 1996). High scores indicate high levels of self-efficacy whilst low scores indicate low levels of self-efficacy. Data from past studies has shown this scale to produce, for males, a Cronbach's Alpha = .71 and a Cronbach's Alpha = .88.

Perceived Self-Efficacy Scale (Caprara et al., 2004); this is a 12-item scale that assess perceived self-efficacy. Each item in this scale is measured on a 7-point Likert scale; ranging from 1= not at all well and 3= not too well to 5= pretty well and 7= very well. This scale assesses the beliefs parents have about their ability to maintain open communication with their child, support their child's efforts to face challenges and gain self-reliance, help their child manage personal responsibilities, handle firmly instances where the child violates the rules or commitments, prevent the escalation of disagreements into greater conflict and to make time spent with their child enjoyable. High scores indicate that parents have high levels of belief in their abilities and low levels indicate that parents have low levels of belief in their abilities as a parent. Data from the original study for which this scale was created for produced a Cronbach's Alpha = .94 for fathers and .92 for mothers (Caprara et al., 2004).

Design

The design of this study is quantitative as data from participants was collected numerically for statistical analysis. This study is of a cross-sectional design as it examined how age, gender and hours spent working per week can affect a parent's level of self-efficacy and perceived self-efficacy. This study also used a within group experimental design as participants from this study were presented with the same questionnaires. No interventions were necessary during this experiment. The independent variables (PVs) for this study were age, gender (male or female), and hours spent working per week (0, 0-10, 11-20, 21+). The dependent variables in this study (CVs) were levels of self-efficacy and perceived self-efficacy.

Results

Table 1.1 shows descriptive statistics for variables in female participants.

	Mean	Median	SD	Range	Cronbach's Alpha
Age	38.62	38.50	6.53	36.00	--
Parental Efficacy	67.77	67.50	6.06	20.00	.66
Perceived Self-Efficacy	56.96	58.50	11.86	41.00	.80

Table 1.2 shows descriptive statistics for variables in male participants.

	Mean	Median	SD	Range	Cronbach's Alpha
Age	38.62	38.50	6.53	36.00	--
Parental Efficacy	65.88	66.00	6.90	23.00	.66
Perceived Self-Efficacy	52.88	52.50	12.93	37.00	.80

**A preliminary analysis of the data showed there to be no outliers evident, therefore all responses remained (n= 42).*

The descriptive statistic tables above show the mean, median, standard deviation and Cronbach Alpha value for the variables age, parental efficacy and perceived self-efficacy. Data for these results were extracted from this study which aims to assess efficacy and perceived self-efficacy levels in parents of children with autism spectrum disorder. Participants were separated by gender; table 1.1 shows descriptive for male participants and table 1.2 shows descriptive statistics for female

participants. Data from both genders is normally distributed as mean and median scores for each is almost identical for each variable.

An independent samples t-test was conducted to compare the perceived self-efficacy scores of male and female participants. There was a difference in score between the two groups although it was non-significant, $t(40) = -1.05$, $p > .05$, two-tailed with females ($M = 67.77$, $SD = 6.06$) scoring higher than males ($M = 65.88$, $SD = 6.91$). The magnitude of the differences in the means (mean difference = -1.05 , 95% CI: -11.93 to -3.78) was small (eta squared = $.02$).

An independent samples t-test was conducted to compare the parental efficacy scores of male and female participants. There was a small difference in score between the two groups although it was non-significant, $t(40) = -.93$, $p > .05$, two-tailed with females ($M = 56.96$, $SD = 11.86$) scoring higher than males ($M = 52.88$, $SD = 12.84$). The magnitude of the differences in the means (mean difference = $-.93$, 95% CI: -5.99 to 2.21) was small (eta squared = $.02$).

*** Prior to carrying out the regression analysis it was first necessary to conduct bivariate correlation analysis to ascertain the relationships between the IV's and the DV. ***

The relationship between predictor variables (age) and dependant variables (parental efficacy & perceived self-efficacy) was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a medium, negative correlation between one of the predictor variables (age) and the dependant variable (perceived self-efficacy), $r = -.30$, $n = 42$, $p < .05$, with levels of age associated with higher levels of perceived self-efficacy.

*** For the main analysis a standard multiple regression analysis was conducted. The results from the analysis are presented in Table 2.0. ***

Table 2.0 shows multiple regression model predicting total intention scores

	R^2	B	B	SE	CI 95% (B)
Model	.12				
Age		-.31	-.76	.39	.92/1.10
Gender		.25	8.86	.5.93	.81/1.24
Hours Working per Week		.11	1.74	2.80	.80/1.27

Note. Statistical significance: * $p < .05$; ** $p < .01$, *** $p < .001$

Multiple regression was performed to investigate the ability of age, gender and hours spent and their ability predict levels of efficacy in parents by total self-efficacy. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. Additionally, the correlations between the predictor variables included in the study were examined. All correlations

were weak to moderate, ranging between $r = -.26, p > .05$ and $r = -.17, p > .05$. This indicates that multicollinearity was unlikely to be a problem. All predictor variables were statistically correlated with total efficacy which indicates that the data was suitably correlated with the dependent variable for examination through multiple linear regression to be reliably undertaken.

Since no *priori* hypotheses had been made to determine the order of entry of the predictor variables, a direct method was opted for the multiple linear regression analysis. The three independent variables explained 12.00% of variance in criminal behaviour ($F(3, 38) = 1.71, p > .05$).

In the final model, none of the predictor variables were statistically significant although the age variable produced a higher Beta value ($\beta = -.31, p > .05$) than the other two variables.

Discussion

The purpose of this study was to examine how demographic factors (age of participants, gender of participants and hours they spend working per week) associate with self-efficacy levels in parents of children autism spectrum disorder. This was done by examining each participants age, gender and hours spent working per week and their correlational effect on levels of self-efficacy. Initially, the study controlled for gender to observe if there were any variances in the self-efficacy scores between male and female participants. As can be seen in table 1.1 and 1.2 (tables showing descriptive statistics for males and females) the differences between each genders scores on both levels of self-efficacy and perceived self-efficacy was minute although female participants scored higher in both. Both genders scored high, which indicates that both genders have considerably high levels of self-efficacy when it comes to their belief in their abilities as parents. These results coincide with the data of previous research that examined the differences in parental self-efficacy between mothers and fathers. Murdock et al. (2012), found that fathers reported slightly lower levels of parental self-efficacy compared to mothers. Sevingy (2010) believes that these minute differences in parental self-efficacy between genders may be due to the fact that the parenting role may be more important to a mothers' self-identity than fathers. However, social identity theory indicates that an underlying factor that may affect a mother or fathers' commitment to engage in their child's life may be role learning and role taking (*i.e. undertaking of various roles that may be required as a parent*). Daly (1993) claims that an individual's ability to identify themselves as a parent may be influenced by their own subjective experience within the parenting role. However, Tremblay & Pierce (2011) found that being a father accounted for 34.1% of their total social identity in males that were expecting a child with an average increase of 12.9% once the child was born; showing that the parental role is apparent in its significance in the overall social identity of both mother and father. Identifying what factors affect each gender specifically is important as it allows us to further our understanding and may also increase the efficiency of services available for both mothers and fathers. Two separate independent t-tests were

conducted to observe the difference in mean scores between genders. Results from these t-tests show there to be no statistically significant difference in the mean scores between male and female participants.

Correlational analysis was conducted using Pearson product-moment correlation coefficient to observe if any of the demographic variables chosen for this study (age, gender, hours spent working per week) had an effect on the levels of parent and perceived levels of self-efficacy. Results from this analysis showed that relationships between the independent and dependent variables ranged from weak to moderate. The strongest correlation observed was between age of participants and perceived self-efficacy. This also was the only correlation that had statistical significance. Prior research has found that the age of the participant is associated with the participant's levels of parent efficacy and perceived self-efficacy (Murdock et al, 2012; Benedict et al., 2006). Some believe that these results indicate that younger parents may have lower levels of self-efficacy (Strunk, 2014). Recent studies which aimed at examining parental stress and competencies found that higher levels of stress and lower levels of self-efficacy. Murdock (2012) suggests that lower levels of self-efficacy may be associated with the financial burden that young parents may face; which has shown to be often the case when parenting a child with additional needs such as the ones that fall under autism spectrum disorder (Jarbrink, Fombonne & Knapp, 2003; Montes et al., 2008; Xiong et al. 2011).

The multiple regression analysis showed that the three predictor variables (PVs; age, gender and hours working per week) accounted for 12% of the variance in levels of an individual's total self-efficacy as a parent. This study examined 3 demographics factors to try and explain the variance in the criterion variable (total levels of self-efficacy). None of the predictor variables used in this model were of statistical significance, this suggests that they had no meaningful contribution into the explanation of variance in levels of self-efficacy in parents. Although the results from this analysis were non-significant, age of participants as a predictor variable had a higher beta value than the other two PVs (gender & hours spent working per week).

Future Implications

There was a correlational relationship with perceived self-efficacy and age of parents which may allow for practical implications in the future. For example, as lower perceived self-efficacy correlated with the younger the participants were, interventions aimed at increasing levels of perceived self-efficacy in younger parents may be effective as studies show that parents with higher levels of perceived self-efficacy are more likely to engage in more invested behaviours aimed at attending to their child's social, emotional and educational needs. Research that was presented in the literary review supports this as parents who report higher self-efficacy and lower levels of stress are more likely to engage in these behaviours as well as being more likely to actively pursue seeking services that will benefit their child's specific needs (Chiri et al., 2012; Shattuck, 2011). Also, as the power of this study was reduced due the limitations of the sample size ($n = 42$), results from this study could possibly be used as preliminary data for future studies.

Study Limitations

One of this study's most significant limitations was the sample size that was obtained. Due to the specific criteria that was established for participation in this study, difficulties arose with the gathering of individuals who were suitable. As a result of this small sample size, the power of this study is reduced, meaning the study was only able to observe moderate effect sizes. This also means that the likelihood of the occurrence of Type 2 error was increased. However correlational analysis showed there to be statistical significance between the age of the participant and their levels of self-efficacy as a parent. Also mothers and fathers both scored highly which coincides with previous research (Tremblay et al., 2011). Although the homogeneity of the study is unknown, studies that include both mother and father participants can be typically assumed to be homogeneous (Braungart-Rieker, Garwood, Powers, & Wang, 2001).

Future Directions

Although results gathered from the analysis of the data in this study were reduced in power due to the small size of the sample that was used, it was able to identify that age correlated with levels of perceived self-efficacy. Results from this study could be replicated and extended by researchers in the future. By recruiting a larger sample, future studies could investigate further the relationship between age and parental levels of perceived self-efficacy and by using a larger sample it would allow for a better perspective on how results reflect to the general population. As well as using a larger sample, future research could use more predictor variables as the three used in this only explained 12% of variance in self-efficacy in parents. This could allow for the development of more effective interventions if needed. In the future, research may also benefit from developing scales that are more specific for parents of children with autism spectrum disorder as measurements used in this study were previously used in studies aimed at measuring levels of self-efficacy in parents of typically abled children (Ranganathan & Montemayor, 2014; Caprara et al., 2004). As parent involvement has been shown to have a direct relationship with the levels of self-efficacy a parent has, it is recommended that future research includes a measure for parental involvement (Gray, 2002). As previously stated, the development of research that will further our understanding as to the difficulties that a parent of a child ASD faces in particular, therefore, it may also be suggested that future researchers incorporate a control group of parents of children of whom are typically abled. This may allow for researchers to directly observe difficulties that may be specific to parents of children with autism spectrum disorder. Previous research has also identified that affects that different factors may have on stress and self-efficacy may vary depending on the child's disability, thus if any future research may benefit from observing variables that correlate with levels of efficacy across a broad range of disabilities (Gouge et al., 2012).

Conclusion

The aim of this study was to observe how age of participants, gender of participants and hours they spend working per week effect their self-efficacy beliefs as a parent. Results show there to be little or no association between gender of participation and hours spent working per week and their levels of self-efficacy. However, there was a statistically significant correlation observed between age of participants and levels of perceived self-efficacy (PSE). This supports prior research that suggests age of parents is a good predictor of how much self-efficacy a parent may have. Similarities in mean scores between male and female participants supports the social identity theory which suggests that the parental role plays a huge part of their overall social identity (Murdock, 2012).

References:

- Abbeduto, L., Seltzer, M. M., Shattuck, P., Krauss, M. W., Orsmond, G., & Murphy, M. M. (2004). Psychological well-being and coping in mothers of youths with autism, Down syndrome, or Fragile X syndrome. *American Journal on Mental Retardation*, 109, 237–254.
- AHRQ. (2009). *Research Reviews: Comparative effectiveness of therapies for children with Autism Spectrum Disorders*. U.S. Department of Health and Human Services Agency for Healthcare Research and Quality, Retrieved from <http://effectivehealthcare.ahrq.gov/healthInfo.cfm?infotype=rr&processID=106&status=d>
- Aldred, C., Green, J., & Adams, C. (2004). A new social communication intervention for children with autism: Pilot randomised controlled treatment study suggesting effectiveness. *Journal of Child Psychology and Psychiatry*, 45, 1420–1430. doi:10.1111/j.1469-7610.2004.00338.x
- American Association on Intellectual & Developmental Disabilities. (2011). *Intellectual Disability: Definition, Classification, and Systems of Supports: (12th ed.)*. Washington, DC: American Association on Intellectual & Developmental Disabilities
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders: DSM-5*. Washington, D.C: American Psychiatric Association.

- Anderson, S. R., Avery, D. L., DiPietro, E. K., Edward, G. L., & Christian, W. P. (1987). Intensive home-based early intervention with autistic children. *Education and Treatment of Children, 10*, 352–366.
- Baker-Ericzen, M. J., Brookman-Frazee, L., & Stahmer, A. (2005). Stress levels and adaptability in parents of toddlers with and without autism spectrum disorders. *Research and Practice for Persons with Severe Disabilities, 30*, 194–204.
- Balogh, R., Ouellette-Kuntz, H., Bourne, L., Lunsby, Y., & Colantonio, A. (2008). Organising health care services for persons with an intellectual disability. *Cochrane Database of Systematic Reviews*, Issue 4.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Upper Saddle River, NJ: Prentice Hall, Inc.
- Bearss, K., Johnson, C., Handen, B., Smith, T., & Scahill, L. (2013). A pilot study of parent training in young children with autism spectrum disorders and disruptive behavior. *Journal of Autism and Developmental Disorders, 43*, 829–840. doi:10.1007/s10803-012-1624-7
- Beckman, P. J. (1991). Comparison of mothers' and fathers' perceptions of the effect of young children with and without disabilities. *American Journal on Mental Retardation, 95*, 585–595.

- Benedict RE (2006) Disparities in use of and unmet need for therapeutic and supportive services among school-age children with functional limitations: a comparison across settings. *Health Services Research* 41(1): 103–124.
- Birnbrauer, J. S., & Leach, D. J. (1993) The Murdock early intervention program after 2 years. *Behaviour Change*, 10, 63–74
- Bowlby, J. (1969). *Attachment. Attachment and loss: Vol. 1. Loss*. New York: Basic Books.
- Braungart-Rieker, J. M., Garwood, M. M., Powers, B. P., & Wang, X. (2001). Parental sensitivity, infant affect, and affect regulation: Predictors of later attachment. *Child Development*, 72, 252–270. doi:10.1111/1467-8624.00277
- Buschbacher, P., Fox, L., & Clarke, S. (2004). Recapturing desired family routines: A parent-professional behavioral collaboration. *Research and Practice for Persons with Severe Disabilities*, 29, 25–39. doi:10.2511/rpsd.29.1.25
- Carter, A. S., Messinger, D. S., Stone, W. L., Celimli, S., Nahmias, A. S., & Yoder, P. (2011). A randomized controlled trial of Hanen’s “More Than Words” in toddlers with early autism symptoms. *Journal of Child Psychology and Psychiatry*, 52, 741–752. doi:10.1111/j.1469-7610.2011.02395.x

- Center for Parent Information and Resources. (2011). *Intellectual Disability*. Retrieved from Parent Center Hub: <http://www.parentcenterhub.org/repository/intellectual/>
- Chavira, V., Lopez, S. R., Blacher, J., & Shapiro, J. (2000). Latina mothers' attributions, emotions, and reactions to the problem behaviors of their children with developmental disabilities. *Journal of Child Psychology & Psychiatry*, 41, 245–252.
- Chiri G and Warfield ME (2012) Unmet need and problems accessing core health services for children with autism spectrum disorder. *Maternal and Child Health Journal* 16(5): 1081–1091.
- Coleman PK and Karraker KH (2000) Parenting self-efficacy among mothers of school-age children: conceptualization, measurement, and correlates. *Family Relations* 49: 13–24
- Dawson, G., Rogers, S., Munson, J., Smith, M., Winter, J., Greenson, J., Donaldson, A., Varley, J. (2009). Randomized, controlled trial of an intervention for toddlers with autism: The Early Start Denver Model, *Pediatrics*, 125.
- Dykens, E. M. (2000). Psychology in children with intellectual disability. *Journal of Child Psychology and Psychiatry*, 41, 407-17

- Feetham, S. (2011). The relationship of family to health: Historical overview. In M. C.Rosenberg (Ed.), *Encyclopedia of family health* (pp. xxxi–xxxvi). London: Sage Publications.
- Eyberg, S. M., & Funderburk, B. W. (2011). *Parent–child interaction therapy protocol*. Gainesville, FL: PCIT International.
- Girolametto, L., & Tannock, R. (1994). Correlates of directiveness in the interactions of fathers and mothers of children with developmental delays. *Journal of Speech, Language and Hearing Research, 37*, 1178–1191.
- Goudie, A., Narcisse, M., Hall, D. E., & Kuo, D. Z. (2014). Financial and psychological stressors associated with caring for children with disability. *Families, Systems, & Health, 32*(3), 280-290. doi:10.1037/fsh0000027
- Green, J., Charman, T., McConachie, H., Aldred, C., Slonims, V., Howlin, P., . . . Pickles, A. (2010). Parent-mediated communication-focused treatment in children with autism (PACT): A randomised controlled trial. *The Lancet, 375*, 2152–2160. doi:10.1016/S0140-6736(10)60587-

- Handleman, J. S., & Harris, S. L. (2005). Douglass Developmental Disabilities Center: An ABA program for children and adults with autism spectrum disorders. *International Journal Of Behavioral Consultation And Therapy*, 1(4), 301-311. doi:10.1037/h0100754
- Harris, S. L., & Handleman, J. S., Gordon, R., Kristoff, B. & Fuentes, F. (1991). Changes in cognitive and language functioning of preschool children with autism. *Journal of Autism and Developmental Disorders*, 21, 281–290.
- Hastings, R. P., & Brown, T. (2002). Behavior problems of children with autism, parental self-efficacy, and mental health. *American Journal on Mental Retardation*, 107, 222–232.
- Hillman, J. (2006). Supporting and treating families with children on the autistic spectrum: The unique role of the generalist psychologist. *Psychotherapy: Theory, Research, Practice, Training*, 43(3), 349-358. doi:10.1037/0033-3204.43.3.349
- Hoffman, C. D., Sweeney, D. P., Hodge, D., Lopez-Wagner, M. C., & Looney, L. (2009). Parenting stress and closeness: Mothers of typically developing children and mothers of children with autism. *Focus on Autism and Other Developmental Disabilities*, 24, 178–187. doi:10.1177/1088357609338715

- Hoffman, C. D., Sweeney, D. P., Lopez-Wagner, M. C., Hodge, D., Nam, C. Y., & Botts, B. H. (2008). Children with autism: Sleep problems and mothers' stress. *Focus on Autism and Other Developmental Disabilities, 23*, 155–165. doi:10.1177/1088357608316271
- Howard, J. S., Sparkman, C. R., Cohen, H. G., Green, G., & Stanislaw, H. (2005). A comparison of intensive behavior analytic and eclectic treatments for young children with autism. *Research in Developmental Disabilities, 26*, 359–383.
- Jackson, A. P., & Huang, C. C. (2000). Parenting stress and behavior among single mothers of preschoolers: The mediating role of self-efficacy. *Journal of Social Service Research, 26*(4), 29–42.
- Järbrink, K., Fombonne, E., & Knapp, M. (2003). Measuring the parental, service and cost impacts of children with autistic spectrum disorder: A pilot study. *Journal of Autism and Developmental Disorders, 33*, 395–402.
- Johnson, N., Frenn, M., Feetham, S., & Simpson, P. (2011). Autism spectrum disorder: Parenting stress, family functioning and health-related quality of life. *Families, Systems, & Health, 29*(3), 232-252. doi:10.1037/a0025341
- Kabot, S., Masi, W., & Segal, M. (2003). Advances in the diagnosis and treatment of autism spectrum disorders. *Professional Psychology: Research and Practice, 34*, 26–33.

- Kazdin, A. E., & Rotella, C. (2005). *Parent management training: Treatment for oppositional, aggressive, and antisocial behavior in children and adolescents*. New York, NY: Oxford University Press.
- Keen D, Couzens D, Muspratt S, et al. (2010) The effects of a parent-focused intervention for children with a recent diagnosis of autism spectrum disorder on parenting stress and competence. *Research in Autism Spectrum Disorders* 4: 229–241.
- Kuhn, J. C., & Carter, A. S. (2006). Maternal self-efficacy and associated parenting cognitions among mothers of children with autism. *American Journal Of Orthopsychiatry*, 76(4), 564-575. doi:10.1037/0002-9432.76.4.564
- Kogan, M. D., Strickland, B. B., Blumberg, S. J., Singh, G. K., Perrin, J. M., & van Dyck, P. C. (2008). A national profile of the health care experiences and family impact of autism spectrum disorder among children in the United States, 2005–2006. *Pediatrics*, 122, e1149–e1158. doi:10.1542/peds.2008-1057
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.

- Lesack, R., Bearss, K., Celano, M., & Sharp, W. G. (2014). Parent–Child Interaction Therapy and autism spectrum disorder: Adaptations with a child with severe developmental delays. *Clinical Practice In Pediatric Psychology*, 2(1), 68-82. doi:10.1037/cpp0000047
- Lindsey, M. (1997). Emotional, behavioural and psychiatric disorders in children. *Psychiatry of Learning Disabilities*, 81-104.
- Lord, C. (1995). Follow-up of two-year-olds referred for possible autism. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 36(8), 1365–1382.
- Luckasson, R., Borthwick-Duffy, S., Buntix, W. H. E., Coulter, D. L., Craig, E. M., Reeve, A., . . . Tassé, M. J. (2002). *Mental retardation: Definition, classification and systems of supports*. Washington, DC: American Association on Mental Retardation.
- Luckasson, R., Borthwick-Duffy, S., Buntix, W. H. E., Coulter, D. L., Craig, E. M., Reeve, A., . . . Tassé, M. J. (2003). *Retard mental: Définition, classification et systèmes de soutien* (10^e éd.). Eastman, Canada: Behaviora. (Traduction sous la direction de Diane Morin de l'ouvrage original publié en 2002).
- Mallinckrodt, B. (1992). Childhood emotional bonds with parents, development of adult social competencies, and availability of social support. *Journal Of Counseling Psychology*, 39(4), 453-461. doi:10.1037/0022-0167.39.4.453

- Mandell, D. S., & Palmer, R. F. (2005). State differences in the identification of autistic spectrum disorders. *Archives of Pediatrics and Adolescent Medicine*, 159, 266–269.
- McConachie, H., & Diggle, T. (2007). Parent implemented early intervention for young children with autism spectrum disorder: A systematic review. *Journal of Evaluation in Clinical Practice*, 13, 120–129. doi:10.1111/j.1365-2753.2006.00674.x
- McGee, G. G., Daly, T., & Jacobs, H. A. (1994). The Walden Preschool. In S. L. Harris, & J. S. Handleman (Eds.) *Preschool education programs for children with autism* (pp. 127–162). Austin, TX: Pro-Ed.
- McKenney, E. W., & Bristol, R. M. (2015). Supporting intensive interventions for students with autism spectrum disorder: Performance feedback and discrete trial teaching. *School Psychology Quarterly*, 30(1), 8-22. doi:10.1037/spq0000060
- Morin, D., Cobigo, V., Rivard, M., & Lépine, M. (2010). Intellectual disabilities and depression: How to adapt psychological assessment and intervention. *Canadian Psychology/Psychologie Canadienne*, 51(3), 185-193. doi:10.1037/a0020184
- Murdock, K. W. (2013). An examination of parental self-efficacy among mothers and fathers. *Psychology Of Men & Masculinity*, 14(3), 314-323. doi:10.1037/a0027009

- Newacheck, P., Hung, Y. Y., Hochstein, M., & Halfon, N. (2002). Access to health care for disadvantaged young children. *Journal of Early Intervention, 25*, 1–11.
- Office of Special Education Programs. (2004). Table B4A: Percentage of children served in the 50 states and D.C. (including BIA schools) under IDEA, part B, ages 6-21 by educational environments and disability, 1989-2004. Retrieved from www.ideadata.org/docs/PartBTrendData/B4A.html on November 20, 2005
- Ozer, E. M. (1995). The impact of childcare responsibility and self-efficacy on the psychological health of professional working mothers. *Psychology of Women Quarterly, 19*, 315–335.
- Perry, R., Cohen, I., DeCarlo, R. (1995). Case study: Deterioration, autism, and recovery in two siblings. *Journal of the American Academy of Child and Adolescent Psychiatry, 34*, 232–237.
- Repp, A. C. (1996). Inclusion: Multiple Perspectives, *Journal of Behavioral Education, 6*, (3), 279-282.

- Reyno, S. M., & McGrath, P. J. (2006). Predictors of parent training efficacy for child externalizing behavior problems—a meta-analytic review. *Journal of Child Psychology and Psychiatry*, 47, 99–111. doi:10.1111/j.1469-7610.2005.01544.x
- Sahu, F. M., & Rath, S. (2003). Self-efficacy and wellbeing in working and non-working women: The moderating role of involvement. *Psychology & Developing Societies*, 15, 187–200.
- Sallows, G. O., & Graupner, T. D. (2005). Intensive behavioral treatment for children with autism: Four-year outcome and predictors. *American Journal on Mental Retardation*, 111, 417–438.
- Sanders, J. L., & Morgan, S. B. (1997). Family stress and adjustment as perceived by parents of children with autism or Down Syndrome: Implications for intervention. *Child & Family Behavior Therapy*, 19(4), 15–32.
- Sevigny, P. R., & Loutzenhiser, L. L. (2010). Predictors of parenting self-efficacy in mothers and fathers of toddlers. *Child: Care, Health and Development*, 36, 179–189. doi:10.1111/j.1365-2214.2009.00980.x

- Shattuck PT, Wagner M, Narendorf S, et al. (2011) Post-high school service use among young adults with an autism spectrum disorder. *Archives of Pediatrics & Adolescent Medicine* 165: 141–146.
- Skinner, B. F. (1953). *Science and human behavior*. SimonandSchuster.com.
- Smith, T. (1999). Outcome of early intervention for children with autism. *Clinical Psychology: Science and Practice*, 6, 33–49.
- Smith, T., Groen, A. D., & Wynn, J. W. (2000). Randomized trial of intensive early intervention for children with pervasive developmental disorder. *American Journal on Mental Retardation*, 102, 238–249.
- Sofronoff K and Farbotko M (2002) The effectiveness of parent management training to increase self-efficacy in parents of children with Asperger syndrome. *Autism* 6(3): 271–286.
- Stadelmann, S., Otto, Y., Andreas, A., von Klitzing, K., & Klein, A. M. (2015). Maternal stress and internalizing symptoms in preschoolers: The moderating role of narrative coherence. *Journal Of Family Psychology*, 29(2), 141-150. doi:10.1037/fam0000054

- Stahmer, A. C., & Aarons, G. A. (2009). Attitudes toward adoption of evidence-based practices: A comparison of autism early intervention providers and children's mental health providers. *Psychological Services, 6*(3), 223-234. doi:10.1037/a0010738
- Stainback, W., & Stainback, S. (1995). *Controversial issues confronting special education: Divergent Perspectives* (2nd ed.). Boston, Massachusetts: Allyn & Bacon.
- Strunk, J. A., Pickler, R., McCain, N. L., Ameringer, S., & Myers, B. J. (2014). Managing the health care needs of adolescents with autism spectrum disorder: The parents' experience. *Families, Systems, & Health, 32*(3), 328-337. doi:10.1037/a0037180
- Teti, D. M., O'Connell, M. A., & Reiner, C. D. (1996). Parenting sensitivity, parental depression and child health: The mediational role of parental self-efficacy. *Early Development & Parenting, 5*(4), 237–250.
- Tomanik, S., Harris, G. E., & Hawkins, J. (2004). The relationship between behaviours exhibited by children with autism and maternal stress. *Journal of Intellectual & Developmental Disability, 29*, 16–26.
- Tonge, B., J. (1999). Psychopathology of children with developmental disabilities. *Psychiatric and Behavioural Disorders in Developmental Disabilities and Mental Retardation, 157-174.*

- Tonge, B., Brereton, A., Kiomall, M., Mackinnon, A., & Rinehart, N. J. (2012). A randomised group comparison controlled trial of “preschoolers with autism.” A parent education and skills training intervention for young children with autistic disorder. *Autism. Advance online publication*. doi:10.1177/1362361312458186
- Weiss, M. J., & Delmolino, L. (2006). The relationship between early learning rates and treatment outcome for children with autism receiving intensive home-based applied behavior analysis. *The Behavior Analyst Today*, 7(1), 96-110. doi:10.1037/h0100140
- Weisz, J. R., Sandler, I. N., Durlak, J. A., & Anton, B. S. (2005). Promoting and protecting youth mental health through evidence-based prevention and treatment. *American Psychologist*, 60, 628–648.
- Weiss, M. J., Tint, A., Paquette-Smith, M., & Lunsy, Y. (2015). Perceived self-efficacy in parents of adolescents and adults autism spectrum disorder. *Autism*, 10. doi: 10.1177/1362361315586292
- Whittingham, K., Sofronoff, K., Sheffield, J., & Sanders, M. R. (2009). Stepping Stones Triple P: An RCT of a parenting program with parents of a child diagnosed with an autism spectrum disorder. *Journal of Abnormal Child Psychology*, 37, 469–480. doi:10.1007/s10802-008-9285-x

- Xiong, N., Yang, L., Yu, Y., Hou, J., Li, J., Li, Y., Liu, H., Zhang, Y., & Jiao, Z. (2011). Investigation of raising burden of children with autism, physical disability and mental disability in China. *Research in Developmental Disabilities*, 32, 306–311.11111111111111111111

Appendix:

Parent Self-Efficacy Scale

- *1. I feel sure of myself as a parent.
- *2. I am doing a good job as the parent of my teenager.
- *3. I have all the skills to be a good parent to my teenager.
- *4. I am confident I can control my teenager's behavior.
- *5. I am confident I can teach my teenager good morals.
- *6. I am confident I can get my teenager to develop good habits.
- *7. I am sure I can teach my teenager to be well-behaved.
- *8. I am sure I can teach my teenager the value of hard work.
- *9. I find it hard to keep track of what my teenager is doing.
- *10. I find it difficult to keep a close watch over where my teenager goes.
- *11. I know who my teenager spends his/her time with.
- *12. I find it hard to keep track of my teenager's social life.
- *13. I know how my teenager is doing at school.
- *14. It is hard for me to know whether my teenager has completed his/her homework.
- *15. I find it hard to keep a close watch over how my teenager spends his/her money.
- *16. I am confident that I usually know what my teenager is doing.
- *17. My teenager's behavior is sometimes more than I can handle.
- *18. My teenager's behavior problems are often due to the mistakes I make.
- *19. I find it difficult to communicate with my teenager.

Note: Item responses use a 5-point Likert scale from "Always" to "Never".

Perceived Parental Self-Efficacy Scale --- English Version

1. Help your son/daughter manage problems that he/she has with others
2. Support your son's/daughter's self-reliance when he/she feels unable to handle the demands
3. Offer your son/daughter help even when he/she does not ask for it
4. Attend to your son/daughter when you are worried about personal, family or work matters
5. Handle firmly instances when your son/daughter breaks rules and commitments
6. Offer guidance without intruding on his/her privacy
7. Get your son/daughter to give up friends you do not care for
8. Get your son/daughter to confide in you about his/her worries
9. Accept your son's/daughter's criticism of you without being offended
10. Get your son/daughter to talk to you about highly personal matters
11. Talk to your son/daughter about your relationship and feelings for each other
12. Get your son/daughter to set realistic goals and help him/her to achieve them

Note; 1= Not at well, 3= Not too well, 5= Pretty well, 7= Very well

Consent Form

Information Sheet for study on maximising abilities of individuals with intellectual disabilities

You are invited to participate in a research study that will form the basis for an undergraduate thesis. Please read the following information before deciding whether or not to participate.

What are the objectives of the study? The nature of this study requires participants to be naive to the exact research question, as information about the research may influence your behaviour and responses. For this reason we can only inform you that we are conducting research on the levels of perceived self-efficacy of a parent/primary caregiver of child with an intellectual disability and beliefs in their abilities. A complete debriefing will be offered after participation, where any questions will be answered.

Why have I been asked to participate? I would like to collect information from different people. The research requires participants be parents or primary caregivers of a child or individual with an intellectual disability.

What does participation involve? Participation in this study requires participants to answer three questionnaires on an online survey.

Right to withdraw Participants have the right to withdraw from the research at any time for whatever reason. Participants can also request at any time to have their response data removed from record.

Are there any benefits from my participation? While there will be no direct benefit from participation studies like this can make an important contribution to our understanding of how to help maximise individuals with intellectual disabilities development. As such, the findings from this study may be presented at national and international conferences and will be submitted for publication in peer-reviewed journals. Interim and final reports will be prepared. However no individual participant will be identified in any publication or presentation. Individuals will not be offered any monetary or other rewards for their participation.

Are there any risks involved in participation? There are no risks associated with participation. Any inconvenience involved in taking part will be limited.

Confidentiality All individual information collected as part of the study will be used solely for experimental purposes. They will be stored safely and will not be publicly displayed or published without prior consent.

Contact Details

If you have any further questions about the research you can contact:

Researcher: Jordan McCann, jordan.mccann360@gmail.com

Consent Form A Study of Face Distortion Judgements

I have read and understood the attached Information Leaflet regarding this study. I have had the opportunity to ask questions and discuss the study with the researcher and I have received satisfactory answers to all my questions

I understand that I am free to withdraw from the study at any time without giving a reason and without this affecting my training

I agree to take part in the study

Participant's Signature: _____ Date: _____

Participant's Name in print: _____

-