Perceived Competency In Female Primary Caregivers Of Infants And Toddlers With Medical And/Or Developmental Disabilities

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Perceived Competency In Female Primary Caregivers Of Infants And Toddlers With Medical And/Or Developmental Disabilities

by

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A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy
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Dedication

This dissertation is dedicated first to my children. Brittani, I hope that you continue to drive and pursue your dreams, no matter how steep the climb. Keirston, the light of my life, your drive and determination will help you accomplish anything that you want. Konor, my bestest buddy, we will now have plenty of time for baseball. I would also like to dedicate this dissertation to my wife, without whom I would have never finished this project. Finally, I would like to dedicate this work to my parents, Dian and Rodney. Although it goes without saying that I would not be here if it were not for you, you both have taught me that I have to be determined, persistent, and patient in order to reach my goals.
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Perceived Competency In Female Primary Caregivers Of Infants And Toddlers With Medical And/Or Developmental Disabilities

Berney J Wilkinson

ABSTRACT

Research has clearly demonstrated that variables associated with the family, child, and utilization of social supports relate to parent perceived competency. However, the research has failed to demonstrate which variable best predicts parent perceived competency. The primary goals of this study were to identify those variables that account for the most variability in parent perceived competency, to examine the relative effects of child characteristics on parental psychopathology, and to evaluate the moderating effects of social support on parent perceived competency based upon various parental characteristics. Participants for this survey study consisted of a convenience sample of 91 female primary caregivers of children (aged birth to three years) who received their initial evaluation at the University of South Florida Early Steps Program (ESP) clinic during a twelve-month data collection period. Inclusion criteria for this study required that participants were the female primary caregiver of the infant or toddler, all participants were primarily English speaking, and the infant or toddler had to be diagnosed with a medical and/or developmental diagnosis by an evaluator at the ESP clinic during the initial visit. Participants completed several questionnaires including assessments of female primary caregiver stress, depression, perceived sense of competency, utilization of social support, perception of child functioning, and perception
of child behavior. Results of this study suggest that parent-reported stress and depression symptoms are significantly related to parent-perceived competency. Further, female primary caregivers whose child has medical and developmental disabilities report higher levels of stress and depressive symptoms compared to those whose child have developmental disabilities only. Similarly, female primary caregivers whose child has significant behavioral problems report higher stress and depression symptoms than those whose child does not have behavioral problems. Implications of these results as they relate to intervention development, limitations of this study, as well as future directions for research are also discussed.
Chapter 1
Introduction

The relationship between parents and their children influences significantly the development of academic and behavioral competency in children (Bradley, 1999). Academic and behavioral competency in children has been defined as a child's ability to meet the academic and behavioral expectations of the environment and has been found to correlate positively with child outcomes (Peters, Bollin, & Murphy, 1991). Children with higher levels of competency typically have more positive outcomes (e.g., better academic achievement, better school adjustment, and fewer behavior problems) while those children with lower levels of competency tend to have more negative outcomes (e.g., poor academic achievement, poor school adjustment, and more behavior problems). That is, child competency is correlated positively with performance on academic, social, and cognitive measures (Leve, Pears, & Fisher, 2002; Peters, Bollin, & Murphy, 1991).

Many variables (e.g., parental psychopathology, parent reported marital satisfaction, and parental substance abuse) influence child competency (e.g., Eiden & Leonard, 2002; Floyd & Gallagher, 1997; Henderson, Sayger, & Horne, 2003). One such variable is the quality of interaction between the child and parent (Cunningham & Boyle, 2002; Peters, Bollin, & Murphy, 1991), and is dependent on both parent and child characteristics (Bhagwanji & McCollum, 1998; Crnic & Greenberg, 1990; Peters, Bollin, & Murphy, 1991). Children who have productive, healthy interactions with their parents have a lower risk of having behavioral and academic problems. Children whose parents use an
authoritarian parenting style and whose interactions with their parents are negative and less productive have a higher likelihood of developing behavioral problems such as aggression and noncompliance (Carter, Garrity-Rokous, Chazan-Cohen, Little, & Briggs-Gowan, 2001). Therefore, it is important to study and to understand factors that influence the parent-child interaction.

Parent competency is one of many variables that influence how parents interact with their children (Cunningham & Boyle, 2002). Researchers agree that competent parents have better interactions with their children compared to parents with lower levels of competency (Crnic & Greenberg, 1990; Cunningham & Boyle, 2002; Peters, Bollin, & Murphy, 1991). Further, parent competency is related significantly to positive outcomes in children. Therefore, interventions designed to increase parent competency are ideal tools for practitioners working with children and families. In particular, Laucht, Esser, and Schmidt (2001) report that interventions should be utilized to improve parenting competency when the child is young because the quality of early parenting has the potential to modify the adverse impact of early risk factors.

Perception of Parent Competency

Parent competency has been defined in many different ways (Teti & Candelaria, 2002). For the purpose of this study, perception of parent competency is defined as a combination of parenting self-efficacy and parenting satisfaction (Johnston & Mash, 1989). Parenting self-efficacy, based on the definition of self-efficacy by Bandura (1982), refers to parents’ perceived ability to successfully address challenges associated with their child’s behavior and development. Parenting satisfaction refers to how much
pleasure parents receive from their role as parents. Together, these two factors have been found to be a good measure of parent perceived competency (Johnston & Mash, 1989).

Parenting self-efficacy

Parenting self-efficacy has been defined as a parent’s “perceived ability to positively influence the behavior and development of their children” (Coleman & Karraker, 2003 pg. 128). High levels of self-efficacy in parents have been found to relate to positive parenting skills (e.g., responsive and non punitive parenting) and fewer perceived behavioral problems in children (Feldman & Werner, 2002; Mash & Johnston, 1990; Unger and Wandersman, 1985). Low levels of parent self-efficacy has been found to be related to high levels of parental stress (Wells-Parker, Miller, & Topping, 1990) and parental depression (Teti & Gelfand, 1991), and behavior problems in children (Mash & Johnston, 1990). Therefore, parent self-efficacy is strongly related to parents’ perceived ability to interact with their child.

Parenting satisfaction

Johnston and Mash (1989) define parent satisfaction as the affect parents associate with parenting (e.g., do parents report being pleased with their role as a parent). High levels of perceived self-efficacy in parents are positively related to parenting satisfaction (Brage Hudson, Elek, & Fleck, 2001; Elek, Brade Hudson, & Boufford, 2003). Brage Hudson, et al. (2001) refer to parent satisfaction as parents’ perception of gratification in their parental role and suggest that parent satisfaction is tied to outcomes. Thus, positive outcomes (i.e., higher levels of child academic and behavioral competence) would tend to correlate positively with higher levels of parent satisfaction. Therefore, there is a relationship between parent self-efficacy and parent satisfaction.
Together, these constructs combine to assess perceived parent competency by incorporating the parents’ perceptions of their ability to influence the development of their child as well as their evaluation of the academic and behavioral outcomes of their parenting.

**Factors that Influence Parent Competency**

For the purpose of this study, the variables believed to impact parent competency will be categorized into three groups: family, child, and resources.

*Family variables*

Family variables that impact parent competency include maternal education level, family socioeconomic status (SES), maternal age, and the presence of parental psychopathology (Dyson, 1997; Kochanska, Clark, & Goldman, 1997; Laucht, Esser, & Schmidt, 2001). Several studies have examined the relationship between parent reported factors, such as parental stress, parental depression, and poverty, and child outcomes (Kochanska, Clark, & Goldman, 1997; Laucht, Esser, & Schmidt, 1997; To, Cadarette, Liu, 2001). Laucht, Esser, and Schmidt (1997), for example, found that infants in homes with high psychosocial risk factors (e.g., low educational level of parents, presence parental psychiatric disorders, marital discord, single parenting, and lack of social support) were at a greater risk for motor and cognitive delays at 2 and 4 years of age. Although these researchers did not assess parent perception of parental competency, various factors were included in the analyses that are believed to influence parent competency (e.g., parental psychopathology and family discord).
Infants and toddlers can present with a wide range of medical, developmental, and behavioral challenges that can make parenting difficult and that impact parent perceived competency. Although parents typically discover these different types of challenges at various stages of the child’s life (medical conditions, many times, are known before or soon after birth while developmental delays and behavioral problems present later in development), the challenges seem to have similar negative effects on parent functioning (Blacher, Shapiro, Lopez, Diaz, & Fusco, 1997; Kazak, Segal-Andrews, & Johnson, 1995).

Parents of children born with a medical condition have an increased likelihood for negative psychological outcomes (Kazak, Segal-Andrews, & Johnson, 1995). Research has demonstrated that parents of children with spina bifida (Holmbeck, Gorey-Ferguson, Hudson, Seefeldt, et al, 1997), diabetes (Rodrique, Geffken, Clark, Hunt, & Fishel, 1994), Smith-Magenis syndrome (Hodapp, Fidler, & Smith, 1998), Prader-Willi syndrome (Hodapp, Dykens, & Masino, 1997), Down syndrome (Sanders & Morgan, 1997; Stores, Stores, Fellows, & Buckley, 1998), and autism (Sanders & Morgan, 1997) report greater levels of stress and less perceived parenting competence than parents of children without a medical condition.

Previous research has examined the impact of children with developmental delays and mental retardation on perceived parental stress and competence (Blacher, Shapiro, Lopez, Diaz, & Fusco, 1997; Carpiniello, Piras, Pariante, Carta, & Rudas, 1995; Orr, Cameron, Dobson, & Day, 1993). Overall, researchers agree that parents of children with developmental delays, including mental retardation, report significantly higher levels of
stress and lower levels of perceived parent competency compared to parents of typical children. However, there is some debate regarding the relative impact of a child with a developmental delay when comparing maternal and paternal reports of stress and competency (Baker, Blacher, Crnic, and Edelbrock 2002; Dyson, 1997; Veisson, 1999). Dyson (1997) conducted a study comparing stress and family functioning reported by mothers and fathers of school-age children with developmental disabilities and reports of mothers and fathers of non-disabled children. Results of this study indicate that mothers and fathers of children with disabilities do not differ in their reports of stress and family functioning. However, significant differences were observed between parents of disabled and non-disabled children. Parents of disabled children reported significantly higher levels of stress. Veisson (1999), on the other hand, compared reports of mothers and fathers of mentally retarded, early school age children and found significant differences between maternal and paternal reports of depression, with mothers reporting significantly higher levels of depression. Although these two studies are measuring different psychopathology and involve different populations (developmental disabilities vs. mental retardation), researchers in this area continue to debate the issue of whether the mother or the father is most affected.

Parents of children with behavioral problems also report decreased perceived parental competence and increased psychopathology (Bor, Sanders, & Markie-Dadds, 2002; Cunningham & Boyle, 2002; Mash & Johnston, 1990). Johnston (1996) reported significant differences between parents of children with attention deficit hyperactivity disorder and oppositional defiant disorder (ADHD + ODD) and parents of typical children. In this study, Johnston asked parents to complete the Parent Sense of
Competence Scale (PSOC, Johnston & Mash, 1989), a self-report measure of parent perceived competency, and several other questionnaires. Results indicate that parents of children with ADHD+ODD report more stress and less perceived parenting competency than those of ‘typical’ children.

**Social support variables**

The availability and use of social supports is another significant variable contributing to parent perceived competence (Johnston & Mash, 1989; Laucht, Esser & Schmidt, 1997; To, Cadarette, Liu, 2001). Support systems may include a wide variety of assistance including the extended family, community-based programs, and family friends (Dunst, Trivette, & Hamby, 1994). Many studies have demonstrated a reduction in parent stress and depression, and an increase in parent perceived competency through the utilization of social supports by the parent (Dyson, 1997; Manuel, Naughton, Balkrishnan, Smith, & Koman, 2003; Hodapp, Fidler, & Smith, 1998). Manuel et al. (2003) reported that mothers of low functioning children with high levels of social support reported lower levels of distress than mothers of high functioning children with lower levels of social support. Therefore, it appears that although child and family variables significantly impact perceived parent competency, the presence and use of social supports may obtund their effects.

**The Assessment of Parent Competency**

Parent competency is a complex construct that focuses on the parent’s skills and ability to interact with their child (Teti & Candelaria, 2002). Investigators evaluate parent competency in one of two ways. The first method uses observations of interactions between the parent and the child (Crnic & Greenberg, 1990; Cunningham &
Boyle, 2002; Peters, Bollin, & Murphy, 1991). This method allows researchers to observe parent-child interactions in situations designed to assess particular parent skills in response to specific child behavior. Observations might focus on the language that the parent uses during the interaction, the parent’s reaction to a child’s behavior, or the parent’s ability to problem solve with the child. In a study conducted by Webster-Stratton (1998), parent competency was assessed through direct observations of parent-child interactions in the participants’ homes. In this study, observers rated the interactions of the parents and children before and after the implementation of an intervention designed to increase parent competency through parent training of behavior management and by fostering parent involvement in the child’s preschool program. The long-term goal of the intervention was to prevent the development of behaviors consistent with the diagnoses of Oppositional Defiant Disorder and Conduct Disorder in an at-risk population of children. Results of the study indicated that parents who completed the intervention were more nurturing in their parenting style than parents who did not participate in the intervention. The increase in parent skills resulted in higher rating on the parent competency scale. In addition to assessing parent skills through direct observation, this study also explored parent perceptions of parenting competency. Similar to results of observed parent competency, parents who participated in the intervention reported significantly higher perceived competency.

The second method that researchers use is to gather parent report data on perceived parent competency. Parent’s perception of competency refers to parent reports of parental skills, efficacy, and/or satisfaction obtained through self-report rating scales (Bor, Sanders, & Markie-Dodds, 2002; Johnston, 1996). In addition to using specific
scales designed to assess parent competency (e.g., Johnston & Mash, 1989), researchers have used indirect means (i.e., self-report measures) to assess parent competency. Such methods include self-report measures for assessing parent stress (Sanders & Morgan, 1997; Stores, Stores, Fellows, & Buckley, 1998; Wilkinson, 2002), parental depression (Blacher, Shapiro, Lopez, Diaz, & Fusco, 1997; Manuel, Naughton, Balkrishnan, Smith, & Koman, 2003; Veisson, 1999), and family experiences (Dyson, 1997; Johnston, 1996).

Statement of the Problem

Although many studies (Johnston & Mash, 1989; Mash & Johnston, 1990; Webster-Stratton, 1998) have examined the relationships between perceived parent competency and child outcomes, researchers have not studied how the important variable of perceived parent competency is influenced by family, child, and support variables. If it can be argued that parent perception of competency can be influenced positively, then it is important to know more about the variables that influence parent perception of competency. This study attempted to identify how various family, child and social support characteristics influence parent perceptions of parenting competency.

Research Questions

1. To what extent do female primary caregiver stress, depression, age, and education; the utilization of social supports; and child disability severity, behavior, age and gender predict parent perceived competency?

2. Do female primary caregivers of children with developmental and medical diagnoses report higher levels of stress and depression than female primary caregivers of children with developmental diagnoses only?
3. Do female primary caregivers of children with clinically significant levels of behavioral problems report higher levels of psychopathology (i.e., stress and depression) than female primary caregivers of children without clinically significant levels of behavioral problems (defined as clinically significant ratings on TABS)?

4. Is the variance of parent perceived competency explained by the utilization of social supports different based upon female primary caregiver education and age?
Chapter 2

Literature Review

The purpose of this chapter is to provide a review of the relevant literature on parent competency. The chapter begins with a description of parent competency including parent perceived competency. Next, a description of the variables (i.e., family, child, and social support) that influence parent perceived competency and the relationship between parent perceived competency and child outcomes is provided. The chapter concludes with the purpose of this study.

Parent Competency

Parent competency can be divided into two major categories, parenting skills and parent perceived competency. Parenting skills are those behaviors exhibited by parents when interacting with their child and include discipline, communication, and emotional support. Such behaviors include the parent’s ability to meet the needs of the child, positive and negative statements used with the child, and amount of attention given to the child (e.g., Bor, Sanders, & Markie-Dadds, 2000). Parent perceived competency refers to the parents’ rating of their own parenting skills. Parent perceived competency consists of parental satisfaction and parental self-efficacy and is assessed through self-report questionnaires completed by the parent (Johnston & Mash, 1989). Parenting skills and parent perceived competency are discussed later in this chapter.

Research has demonstrated that parenting skills and parent perceived competency are related (Bor, Sanders, & Markie-Dadds, 2000; Crnic & Greenberg, 1990;
Cunningham & Boyle, 2002; Kochanska, Clark, & Goldman, 1997; Teti, Gelfand, & Pompa, 1990; Webster-Stratton, 1998). Cunningham and Boyle (2002), for example, conducted a study with families of children with challenging behaviors (i.e., aggression, hyperactivity, and inattention). Families enrolled in the study were divided into three groups, those with a child diagnosed with Attention Deficit/Hyperactivity Disorder (ADHD), Oppositional Defiant Disorder (ODD), and co-morbid ADHD and ODD (ADHD/ODD). A fourth group of parents who had non-diagnosed children, were included in the study as a control group. Parents completed various questionnaires including the Parent Sense of Competency Scale (Johnston & Mash, 1989) to assess parent perceived competency, the Beck Depression Inventory (Beck, Rush, Shaw, & Emery, 1979) to assess parental depression, the Child Behavior Checklist (Achenbach, 1991) to assess child behavior problems, and the Social Provision Scale (Cutrona & Russell, 1987) to assess parental use of social supports. In addition, the researchers conducted observations of the parent and child interacting during structured and unstructured activities. The results of the study indicated that parents of children in the ODD and ADHD/ODD groups demonstrated poorer parenting skills and reported less parenting competency than parents of children in the ADHD and control groups.

As seen in the study described above (Cunningham & Boyle, 2002), parenting skills and parent perceived competency are closely related. That is, parents who demonstrated poor parenting skills report lower levels of parent perceived competency. Conversely, parents who demonstrate higher levels of parenting skills report higher levels of parent perceived competency. Although the relationship between actual parental skills and parent perception of competency is important, many researchers have evaluated these
concepts individually. The following sections will review both parenting skills and parent perceived competency individually.

**Parenting Skills**

Many researchers have assessed parent-child interactions and parenting behaviors to evaluate parental competency (Bor, Sanders & Markie-Dadds, 2000; Coleman & Karraker, 2003; Jimerson, Egeland, Shrouf & Carlson, 2000; To, Cadarette, & Liu, 2001; Webster-Stratton, 1998). Jimerson et al. (2000) conducted a longitudinal study examining the effects of early childhood variables (e.g., home environment and parent-child interactions) on future high school drop out rates. Families who completed this study were followed from the birth of the child through the child’s 19th birthday. Data collected on the family throughout this time included observations of the parent-child interactions, the quality of the home environment, socio-economic status (SES), and parent involvement with the child’s school. Child data collected throughout this time included a brief IQ test, an achievement test, behavior checklists, and a social skills rating scale. Following a hierarchical linear model, the researchers report that parent and family characteristics present during their child’s early childhood significantly predict high school dropout. In particular, the results indicate that the quality of the home environment and the quality of the parent-child interactions early in childhood predict future high school status at age 19. Therefore the results of this study suggest that the quality of parent-child interactions early in childhood has long-term effects on the child and provides evidence that experiences early in life have long-term effects on children.

Similarly, Bor, Sanders, and Markie-Dadds (2002) reported that children of parents who have consistently poor parent-child interactions are at increased risk for
behavioral problems. In their study, Bor, Sanders, and Markie-Dadds (2002) compared the effects of two positive behavioral support parent training programs and a control wait-list group on improving the behavioral symptoms of 36 to 48 month old children with behavior problems. Parent self-report questionnaires and home observations of parenting skills were conducted before and after the parent training. The two interventions, the standard behavioral family intervention (SBFI) and the enhanced behavioral family intervention (EBFI), required parents to attend weekly sessions at local community health and neighborhood centers. The aim of the SBFI was to teach parents 17 core child management strategies, 10 of which were designed to promote the competency and development of the child. The remaining 7 strategies were presented to help the parents manage child behavioral difficulties. Parents in the EBFI group received the same training as the SBFI group, however, they also received training for partner support and coping skills. A control group of families on a waitlist for these interventions was assessed at baseline and again 15 weeks later. Parents in the control group had no interactions with the research team and no treatment during this 15-week time period. Sixty-three families completed this study. Results indicated that parents in the intervention groups reported fewer child behavior problems at post-intervention than parents of children in the waitlist group. The researchers concluded that the results of this study supported the hypothesis that parenting practices play a significant role in the presence and maintenance of disruptive behaviors. In addition, parents in the intervention groups reported significant increases in parent perceived competency and parenting satisfaction. These increases were negatively correlated with parent reported child behavior problems. That is, as parents viewed their competency increasing, they
reported fewer child behavior problems. Therefore, this study provides evidence that when parents have the skills needed to manage and cope with the needs of their child, they report higher levels of parent perceived competency, including parenting satisfaction.

Although assessing parent competency through the evaluation of parent-child interactions has benefits, there are several limitations to this method. Observing parent skills allows researchers to see parents interact with their child in simulated or natural settings and to see directly how the parent responds to the needs of the child (Bor, Sanders, & Markie-Dadds, 2002; Cunningham & Boyle, 2002). However, this method is significantly limited by the time and money demands this method requires. For example, in the study described above by Bor, Sanders, and Markie-Dadds (2002), 63 parent-child dyads were videotaped over three 10-minute time segments. Four trained observers then watched and coded the videotapes to score the interactions between the parent and child. This type of evaluation takes considerable time and cost to complete. Therefore, though it is a more direct evaluation of parent skills and competency, it is not very cost effective. Further, as seen in the results of Bor, Sanders, and Markie-Dadds (2002), as observed parenting skills increased, parent ratings of perceived competency and satisfaction also increased. Therefore, the use of parent ratings of perceived competency may be used as an estimation of actual parenting skills.

Parent Perceived Competency

Johnston and Mash (1989) define parent perceived competency as a combination of parent self-efficacy and parent satisfaction. Based upon the work of Bandura (1982) self-efficacy is defined as one’s perceived ability to successfully address future
challenges. Given this operational definition of self-efficacy, parental self-efficacy refers to the parent’s perceived ability to manage the challenges encountered in their child’s development and behavior (Johnston & Mash, 1989). Parenting satisfaction refers to an affective response attributed to one’s role as a parent (Johnston & Mash, 1989). Such responses include frustration, anxiety, and motivation (Bor, Sanders, & Markie-Dadds, 2000). Together, these two factors have been operationally defined as a measure of parent perceived competency (Bor, Sanders, & Markie-Dadds, 2000; Johnston & Mash, 1989).

**Parent Self-Efficacy**

Coleman and Karraker (2003) define parent self-efficacy as one’s “perceived ability to positively influence the behavior and development of their children” (pg. 128). The research literature provides evidence of a relationship between parent self-efficacy beliefs and parenting behavior (summarized in Coleman & Karraker, 2003). Further, researchers have found parental self-efficacy to be related to child outcomes (Coleman & Karraker, 2003; Feldman & Werner, 2002; Johnston, 1996; Lemanek, Jones, & Lieberman, 2000; Teti, Gelfand, & Pompa, 1990). Therefore, parent self-efficacy is an important factor to examine when assessing parents’ perception of their competency.

Coleman and Karraker (2003) examined parent reported self-efficacy by observing the parenting skills and child characteristics of 68 mothers and their 19- to 25-month old children. Parent self-efficacy was assessed with two instruments, the self-efficacy subscale of the Parent Sense of Competency Scale (PSOC) and the Self-Efficacy for Parenting Tasks Index-Toddler Scale (SEPTI-TS), a scale developed by the study’s authors. Observations of the parent-child interactions were conducted by two trained
college students. Child characteristics assessed included the Mental Developmental Index (MDI) of the Bayley Scales of Infant Development and behavioral characteristics obtained from observations during parent-child interactions. Results of the study indicated that parent perceived efficacy as measured by the SEPTI-TS correlated significantly with the child’s score on the MDI and on five of the seven child characteristics observed during the parent-child interaction. Further, scores on the SEPTI-TS significantly predicted five of the seven observed child behaviors. The self-efficacy subscale of the PSOC was not found to be significantly related to any of the child characteristics. Surprisingly, the data provides no evidence of a relationship between parent reported self-efficacy and observed parent behaviors. The authors indicated that this could be due to methodological problems with the specificity of the measures used in assessing the parent and child’s behaviors during the parent-child interaction.

**Parent Satisfaction**

Parent satisfaction is a second variable believed to be a component of parent perceived competency refers to parents’ enjoyment with their role as a parent (Johnston & Mash, 1989). As with parent self-efficacy, parent satisfaction has been found to relate to child outcomes (Crnic & Greenberg, 1990; Johnston, 1996; Lemanek, Jones, & Lieberman, 2000). Lemanek, et al. (2000) studied mothers of 59 children with spina bifida. Of the 59 children, both fathers and mothers of 19 children completed the study. Parents involved in this study completed a series of questionnaires assessing various characteristics, including parent satisfaction, their child’s social skills, and their child’s behavior problems. The data suggest that parents’ satisfaction scores were not
significantly different than those of the normative sample for the assessment tool. However, parent satisfaction was positively correlated with child social skills and negatively correlated with child behavior problems. The results suggest that parent satisfaction is influenced by child behavioral problems rather than medical conditions.

There are benefits and limitations when assessing parent perceived competency through direct observations. The use of parent report and questionnaires requires less time than behavioral observations (the Parent Sense of Competency Scale, for example, requires the parent to answer 17 questions; Johnston & Mash, 1989). Despite its relative convenience, there are many limitations to parent report questionnaires. Self-report questionnaires do not directly measure behavior; instead they provide the rater’s perception of that behavior, which may be influenced by extraneous factors. For example, if the parent has experienced an acutely stressful event, their self-ratings may be different than if they had not experienced that event. In addition, raters may score items to attain a particular score. For example, a parent may report in a way to make their behaviors appear more socially appropriate. Other parents may report in such a way to make their scores look worse so that they can receive needed help. Therefore, though self-report questionnaires are convenient and cost-effective, the results of the questionnaires should be interpreted with some level of caution. In addition, there is some evidence that suggests that mothers and fathers differ in their response to self-report questionnaires (Dyson, 1997; Kurdek, 1996). Despite these limitations, the relationship between parent reports of competency and observations of parenting skills seen in previous research (e.g., Bor, Sanders, & Markie-Dadds, 2002) provides support for the
use of parent report scales and the study of parent perceived competency as a reflection of parenting skills.

**Variables Influencing Parent Perceived Competency**

Parent perceived competency is influenced by various factors associated with family and child characteristics (e.g., Hess, Papas, & Black, 2002; Pavuluri, Luk, & McGee, 1996; Sloper, 1999). For the purpose of the present study, these factors will be categorized into three groups; family variables, child variables, and social support variables. Family variables influencing parent perceived competency include parental stress, parental depression, and parental self-esteem. Developmental disabilities, medical conditions, and behavioral difficulties are examples of child variables affecting parent perceived competency. Finally, the utilization and availability of social support (including extended family and community support programs) impact parent perceived competency. Each of these variables will be discussed individually next.

**Family Variables**

Although there are many family variables that could be included in a study examining the relationship between those variables and parent perception of competency, for the purpose of this study family variables include parental psychopathology, marital status, family socio-economic status (SES), maternal age, and maternal education level. Although relatively few studies have examined directly the relationship between these variables and parent perceived competency, there is evidence that the two variables are related (Bor, Sanders, & Markie-Dadds, 2002; Crnic & Greenberg, 1990; Dyson, 1997; Hess, Papas, & Black, 2002; Kochanska, Clark, & Goldman, 1997; Olsson & Hwang, 2002; Teti, Gelfand, & Pompa, 1990). Kochanska, Clark, and Goldman (1997) found
that mothers who reported high levels of negative emotionality (defined as an aggregate of depression, anxiety, neuroticism, and guilt) reported lower levels of competency as measured by how responsive they believe they are to the needs of their child.

Similarly, Hess, Papas, and Black (2002) found that adolescent mothers who report higher levels of personal self-esteem had higher rates of parental satisfaction (a component of parent perceived competency) than those who report lower levels of personal self-esteem. Given the relationship between parent characteristics and parent perceived competency, research assessing parental characteristics associated with parent perceived competency (i.e., depression, anxiety) should also be reviewed. For example, Olsson and Hwang (2002) reported that parents who are pessimistic about their ability to handle future stressful events with their child are more likely to report high levels of depression and stress compared to parents who are more optimistic in their ability to handle stressful events with their child. The studies cited in this section provide empirical support for the consideration of family variables when assessing parent perceived competency.

Child Variables

Various child characteristics have demonstrated an effect on parent perceived competency (Sloper, 1999). In general, these characteristics can be divided into three groups; medical (e.g., Manuel, et al., 2003), developmental (e.g., Hodapp, Fidler, & Smith, 1998), and behavioral (e.g., Wilkinson, 2002). Each of these groups will be discussed in more detail below.

Medical. Parents of children with medical conditions are at increased risk for stress (Sloper, 1999; von Gontard, Backes, Laufersweiler-Plass, Wendland, Lehmkuhl,
Zerres, & Rudnik-Schöneborn, 2002; Manuel, et al., 2003) and poor parenting self-efficacy (Lemanek, Jones, & Lieberman, 2000). Medical conditions may include children with cerebral palsy (Manuel et al., 2003), congenital heart disease (Tak & McCubbin, 2002), and sickle-cell disease (Logan, Radcliff, & Smith-Whitley, 2002).

Manuel et al. (2003) studied various characteristics of families of children with cerebral palsy. Parents in this study completed questionnaires assessing maternal depression and perceived availability of social support. In addition, the severity of the child’s illness and the child’s functional status were evaluated. Results of this study indicated that parents of children with a chronic illness are at risk for depression. Interestingly, however, the severity of parent reported depression was not related to the severity of the child’s disability. Rather, parent depression was correlated with the perceived availability of social support. This finding is similar to the findings of other research (e.g., Tak & McCubbin, 2002) indicating that, while parents of children with a chronic illness are at increased risk of psychopathology, the level of risk is dependent on the utilization of social support rather than the severity of the child’s disability.

Other research on parents of children with chronic illnesses has found that the significance of parent rated stress is not influenced by the severity of the child’s illness, but by the presence of child behavioral problems (Lemanek, Jones, & Lieberman, 2000; von Gontard et al., 2002; Wilkinson, 2002). Although parents of children with a chronic illness are considered to be at elevated risk for psychopathology that may influence their parent perceived competency, other factors such as child behavior problems and lack of social support may add increased risk potential.
Developmental disabilities include conditions such as Down’s syndrome, mental retardation, and Prader-Willi syndrome. Parents of children with developmental disabilities have been found to report high rates of depression (Blacher, Shapiro, Lopez, Diaz, & Fusco, 1997; Carpiniello, Piras, Pariante, Carta, & Rudas, 1995; Olsson & Hwang, 2002; Sloper, 1999; Veisson, 1999) and stress (von Gontard et al, 2002; Hodapp, Fidler, & Smith, 1998; Orr, Cameron, Dobson, & Day, 1993; Sanders & Morgan, 1997).

Hodapp and colleagues (Hodapp, Dykens, & Masino, 1997; Hodapp, Fidler, & Smith, 1998) conducted several studies of parents of children with Prader-Willi Syndrome and Smith-Magenis Syndrome. In these studies, parent rated stress was compared between parents of children with disabilities and those without disabilities. Results indicate that parents of children with developmental disabilities reported higher levels of stress. However, Hodapp, Dykens, and Masino (1997) and Hodapp, Fidler, and Smith (1998) also found that parents of children with disabilities demonstrating challenging behaviors reported higher levels of stress compared to parents of disabled children without challenging behaviors. This supports findings from other research indicating that behavioral challenges significantly increase the risk for parent reported stress (Baker, Blacher, Crnic, & Edelbrock, 2002; Dumas, Wolf, Fisman, & Culligan, 1991; Hastings & Johnson, 2001; Stores, Stores, Fellows, & Buckley, 1998). Baker et al. (2002) also evaluated the reported stress of parents of children with and without developmental delays. Results indicate a significant difference in stress scores between parents of children with and without disabilities. However, child behavior problems predicted 40% of the variance in parent reported stress after accounting for the effects of developmental delays.
delay severity (predicted 12% of parent reported stress variability). Therefore, with 20% to 60% of individuals with developmental delays presenting with challenging behaviors (Feldman, Hancock, Rielly, Minnes, & Cairns; 2000), it is important to assess both developmental delays as well as behavioral issues to differentiate their relative effects on parent perceived competency and parental psychopathology.

Behavioral. Although behavior problems co-occur frequently in children with developmental disabilities, the effects of behavior problems alone affects parent perception of competency. Parents of children who exhibit challenging behaviors have been found to report lower levels of parent perceived competency compared to parents of children without challenging behaviors (Cunningham & Boyle, 2002; Johnston, 1996). Challenging behaviors include symptoms associated with Attention Deficit Hyperactivity Disorder (ADHD) and Oppositional Defiant Disorder (ODD), as well as behaviors associated with disorders such as autism.

Cunningham and Boyle (2002) compared parental and child characteristics of preschool aged children at risk for ADHD and ODD to those characteristics of parents of children not at risk for behavioral difficulties. At-risk status was evaluated by the use of the Home Situations Questionnaire (HSQ, Barkley & Edlebrock, 1987) to examine the home environment, and the Child Behavior Checklist (CBCL, Achenbach, 1991) to assess child behaviors. In addition to the scales used to determine at-risk status, the Social Provision Scale (Cutrona & Russell, 1987) was used to assess social support, the Beck Depression Inventory (BDI, Beck, Rush, Shaw, & Emery, 1979) was used to assess parental depression, and the Parenting Sense of Competency Scale (PSOC, Johnston & Mash, 1989) was used to assess parent perceived competency. Parents of children at-risk
for behavioral disorders (i.e., ADHD and ODD) reported significantly lower levels of parent competency. Although not a primary focus of the study, a relationship was found between parent perceived competency and depression. Parents who reported lower levels of competency scored higher on a measure of parental depression. Many studies have reported similar findings regarding the relationship between child behavior problems and parent reported psychopathology (i.e., depression and stress; e.g., Dumas, Wolf, Fisman, & Culligan, 1991; Floyd & Gallagher, 1997; McBride, Schoppe, & Rane, 2002; Sanders & Morgan, 1997). McBride, Schoppe, and Rane (2002) studied 100 parents of children between the ages of 3 and 5 years. Parents in this study completed child behavior rating scales and a parent stress questionnaire. Data from this study suggest that a strong positive correlation exists between child behavior problems and parent reported stress.

Researchers have also found that behaviors associated with autism relate to parental stress (Dumas, Wolf, Fisman, & Culligan, 1991; Hastings & Johnson, 2001). Hastings and Johnson (2001) report that parents of children with autism report higher levels of stress than parents of children with other types of developmental disabilities. Specifically, parents of children with high levels of autistic behaviors reported more pessimism, as measured by the Questionnaire on Resources and Stress (QRS, Friedrich, Greenberg, & Crnic, 1983). Therefore, parents of children with challenging behaviors associated with autism report higher levels of stress and see their future positive. Despite these findings, some researchers, have demonstrated that the effects of child behavior problems on parent psychopathology and perceived competency is moderated by the parents’ utilization of social supports (Floyd & Gallagher, 1997; Harrist & Ainslie, 1998; Sloper, 1999).
Social Support Variables

The utilization of social supports is a significant factor when evaluating the impact of child and parent characteristics on parent perceived competency (Crnic & Greenberg, 1990; Dyson, 1997; Floyd & Gallagher, 1997; Hess, Papas, & Black, 2002; Sloper, 1999; Teti, Gelfand, & Pompa, 1990) and variables associated with parent perceived competency (i.e., stress and depression; Dyson, 1997; Floyd & Gallagher, 1997; Hodapp, Dykens, & Masino, 1997; Hodapp, Fidler, & Smith, 1998; Manuel, et al., 2003; Östberg & Hagekull, 2000). Social support variables may include assistance from a variety of sources, including immediate and extended family, friends, and community based resources (Dunst, Trivette, & Hamby, 1994). Parents who utilize social supports tend to report more parental competency and less parental psychopathology compared to parents who do not utilize these services (e.g., Crnic & Greenberg, 1990; Hodapp, Dykens, & Masino, 1997; Östberg & Hagekull, 2000). This pattern is consistent despite the characteristics of the child (e.g., Floyd & Gallagher, 1997; Sloper, 1999). Dyson (1997), for example, studied 62 families of children with (n=30) and without (n=32) disabilities. Parents completed questionnaires assessing parent stress, the family environment, and the utilization of social support. Results from the study indicated that parents who utilized social supports reported better family environments and lower levels of stress compared to those parents who did not utilize social supports.

Relationship Between Parent Perceived Competency and Child Outcomes

Researchers have identified many factors that affect the academic, behavioral, and developmental outcomes of children. Some of these factors are associated with the child and include medical disorders (e.g., Bhutta, Cleves, Casey, Cradock, & Anand, 2002),
developmental disabilities (e.g., Feldman, Hancock, Rielly, Minnes, & Cairns, 2000), and challenging behaviors (e.g., Bor, Sanders, & Markie-Dadds). Other factors that impact child outcomes are associated with characteristics of the family. These factors include family structure (Dunn, Deater-Deckard, Pickering, O’Connor, Golding & the ALSPAC Study Team, 1998), and socioeconomic status and race (Feldman, Dollaghan, Campbell, Kurs-Lasky, Janosky & Paradise, 2000; NICHD Early Child Care Research Network, 2000). Still other factors impacting child outcomes are associated specifically with the child’s parents (Hess, Papas & Black, 2002; Leonard & Das Eiden, 2002; Miller, Bowen, Gibson, Hand, & Ugerer, 2001; To, Cadarette, & Liu, 2001). Such parental factors include parental psychopathology, marital satisfaction, and parental substance abuse (e.g., Floyd & Gallagher, 1997; Henderson, Sayger, & Horne, 2003). Another important parent factor that impacts child outcomes is parent competency (Cunningham & Boyle, 2002; Peters, Bollin, & Murphy, 1991).

Prevatt (2003) studied 80 mothers and their children aged 6 to 12 years. In this study, mothers were administered several questionnaires including the Alabama Parenting Questionnaire (APQ, Frick, 1991) to assess the mothers’ perception on five subscales (parenting involvement, positive parenting, poor supervision, inconsistent discipline, and corporal punishment), the Behavior Assessment System for Children (Reynolds & Kamphaus, 1992) to assess child behavior problems, the Brief Symptom Inventory (Derogatis, 1993) to assess parental psychopathological symptoms, and the Social Support Questionnaire (Sarason, Levine, Basham, & Sarason, 1983) to assess the use and satisfaction of social supports. In addition, demographic data to assess socioeconomic status and the current academic grades of the children were collected.
The results of the study indicate that children of parents who have poor parenting skills, categorized by high scores on the negative subscales on the APQ (inconsistent parenting, corporal punishment, and poor supervision), had negative outcomes, characterized by poor grades and more behavior problems. Conversely, children of parents who have positive parenting skills, categorized as high scores on the positive subscales on the APQ (parenting involvement and positive parenting), experience more positive outcomes, characterized by better grades and fewer behavior problems. Therefore, as Prevatt (2003) suggests, intervention should be targeted at preventing the risk factors that result in the negative outcomes for children. This suggests that professionals working with children and families should focus on ways to prevent negative outcomes for children by intervening early in the child’s life. To accomplish this task, it is important to understand where to focus the interventions for the best possible outcome. Therefore, research should be conducted to examine the relationships between parent and child factors during the early years of the child’s life (birth to three) and to find those important factors that best predict parent perceived competency. The implications of such research will inform practice and policy in regards to the treatment of children and families.

Summary

Parent competency is strongly related to child outcomes (Carter et al, 2001; Eiden & Leonard, 2002; Prevatt, 2003) and is, therefore, an important component to consider when working with children and families. Research has clearly demonstrated that variables associated with the family, child, and utilization of social supports relate to parent perceived competency (Crnic & Greenberg, 1990; Hess, Papas, & Black, 2002; Sloper, 1999) as well as variables associated with parent perceived competency (i.e.,
parental stress and depression; Baker, et al., 2002; McBride, Scoppe, & Rane, 2002; Sanders & Morgan, 1997). However, the research has failed to demonstrate which variable best predicts parent perceived competency. The primary goal of this study was to identify those variables that account for the most variability in parent perceived competency. In addition, this study added to the existing research literature on the relative effects of child characteristics on parental psychopathology. Finally, this study examined the moderating effects of social support on parent perceived competency based upon various parental characteristics. This adds to the research literature by providing a profile of the families that may best benefit from social supports.
Chapter Three

Method

The purpose of this chapter is to present the method that was used to conduct this study. The chapter begins with a description of the participants of the study and the research design. Next a discussion of the dependent measures utilized in this study is presented. The chapter ends with a description of the procedure used for data collection.

Participants and Setting

Participants for this study consisted of a convenience sample of female primary caregivers of children (ages birth to three years) who received their initial evaluation through the University of South Florida Early Steps Program (ESP) during a twelve month data collection period. Participants met the following inclusion criteria for enrollment in the study. First, the individual completing the self-report questionnaires was the female primary caregiver of the infant or toddler. Second, the female primary caregiver was English speaking. Finally, the infant or toddler received a medical and/or developmental diagnosis by an evaluator at the ESP clinic during the initial visit.

Participants were recruited from all four counties that had the University of South Florida ESP clinics; Hillsborough, Polk, Highlands, and Manatee. A total of 101 female primary caregivers successfully completed the set of questionnaires; however, 10 (10%) of those who completed the packets were excluded from data analysis because the results of their initial evaluation indicated that their child did not have a medical or developmental diagnosis. This resulted in a final sample of 91 completed packets that
were included for data analysis. This sample represented approximately 3% of the total population of families evaluated through the ESP during the data collection phase of this study. See Table 1 for the number of participants enrolled from each clinic. The mean age (sd) of the female primary caregivers who participated in this study was 30.63 (6.09) years with a range of 17 to 47 years. Ninety percent of the participants in the study were the biological parents of the child and had completed some level of college education (79%). Comparatively, the mean age (sd) of the biological mothers whose infant or toddler enrolled in the USF ESP during the data collection phase of this study was 28.78 (6.69) years with a range of 13 to 49 years. Seventy-two percent of the biological mothers had a college education. It is important to note that a large amount of data from the clinic sample was unavailable or missing. Therefore, the mean date of birth was calculated on only 2509 biological mothers from the sample, and the mean educational level was calculated on 1669 biological mothers. The mean (sd) age of the infants and toddlers was 18.9 (10.55) months with a range of 1 to 34 months. Sixty four percent of the infants and toddlers were male and 67% were Caucasian. The mean age (sd) of the infants and toddlers enrolled into the USF ESP during the data collection phase of this study was 13.14 (11.90) months with a range of 0.03 to 35 months. Fifty-nine percent of the infants and toddlers were male and 48% were Caucasian. Date of birth data were not available for 39 infants and toddlers. Refer to Table 2 for a comparison between the demographic information of the families enrolled in the USF ESP between May of 2004 and May of 2005 and the demographic information collected for participants in this study.
Table 1

*Participation by Clinic Site*

<table>
<thead>
<tr>
<th>Early Steps Program Clinic Site</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hillsborough</td>
<td>20</td>
</tr>
<tr>
<td>Polk</td>
<td>56</td>
</tr>
<tr>
<td>Highlands</td>
<td>9</td>
</tr>
<tr>
<td>Manatee</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>91</strong></td>
</tr>
</tbody>
</table>
### Table 2

**Comparison of Demographic Information for Entire USF ESP* and Study Participants**

<table>
<thead>
<tr>
<th></th>
<th>Entire USF ESP</th>
<th>Study Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Female Primary Caregiver Demographics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age in Years</td>
<td>28.78 6.69</td>
<td>30.64 6.10</td>
</tr>
<tr>
<td>Education Level††</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than High School</td>
<td>353 11</td>
<td>10 11</td>
</tr>
<tr>
<td>High School Graduate/GED</td>
<td>533 17</td>
<td>9 10</td>
</tr>
<tr>
<td>College</td>
<td>680 21</td>
<td>40 44</td>
</tr>
<tr>
<td>Graduate School</td>
<td>103 3</td>
<td>32 35</td>
</tr>
<tr>
<td><strong>Relation to Child</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biological</td>
<td>N/A N/A</td>
<td>82 90</td>
</tr>
<tr>
<td>Adoptive</td>
<td>N/A N/A</td>
<td>8 9</td>
</tr>
<tr>
<td>Foster</td>
<td>N/A N/A</td>
<td>1 1</td>
</tr>
<tr>
<td><strong>Infant/Toddler Demographics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age in Months</td>
<td>13.14 11.90</td>
<td>18.98 10.49</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1293 41</td>
<td>58 64</td>
</tr>
<tr>
<td>Female</td>
<td>1876 59</td>
<td>33 36</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>552 17</td>
<td>11 12</td>
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<tr>
<td>Asian American</td>
<td>35 1</td>
<td>3 3</td>
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<tr>
<td>Caucasian</td>
<td>1520 48</td>
<td>61 67</td>
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<tr>
<td>Hispanic</td>
<td>724 23</td>
<td>8 9</td>
</tr>
<tr>
<td>Other</td>
<td>339 11</td>
<td>8 9</td>
</tr>
</tbody>
</table>

* N=3170; ** N=91
† Date of births were not available for 661 biological mothers
†† Education level was not available for 1501 biological mothers
††† Date of births were not available for 39 infants and toddlers
The ESP is a federally funded program under Part C of the Individuals with Disabilities Education Act (IDEA, 1997). The purpose of the ESP is to provide developmental and medical evaluations for infants and toddlers (birth to three years) at risk for developmental delays. Such “at risk” factors include prematurity, genetic disorders, challenging behaviors, and delayed developmental milestones. During their visit to the ESP clinic, children’s language, social, adaptive, motor, and cognitive skills area assessed. Children who are found to be delayed (defined as a delay of more than 25% in a particular area) in one or more of these developmental domains are referred to community service providers for therapy to assist in their development. Referrals to the ESP clinic come from community screenings, pediatrician referrals, and hospitals; however, parents may request an evaluation for ESP services directly.

**Research Design**

This study was a survey design in which data were collected through self-report questionnaires completed by the female primary caregivers of children evaluated in the University of South Florida (USF) ESP clinics.

**Instruments**

Demographic data (i.e., female primary caregiver age and education level) were collected for every child and female primary caregiver participating in the study. In addition, characteristics of the child’s female primary caregiver (i.e., parenting stress, depression, sense of competency, and perceived social supports) were collected through self-report questionnaires. Finally, female primary caregivers completed questionnaires that assessed the level of child behavior problems and the perceived severity of child disability.
Family demographics

As a part of the enrollment paperwork for the ESP clinics, parents completed the Initial Visit Information Sheet (see Appendix A). This demographic sheet collects information about the child and the female primary caregiver. Information collected from the demographic sheet for this study included the female primary caregivers’ date of birth, highest level of education attained, and relation to the infant or toddler. Child demographic data used for this study included the child’s date of birth, race, and gender. Demographic data collected from the Initial Visit Information Sheet was transposed to a study form where female primary caregiver education level were identified within predetermined ranges (see Appendix B).

Parenting Stress Index-3rd Edition Short Form (PSI-SF)

The PSI-SF contains 36 items taken directly from the Parenting Stress Index-3rd Edition (PSI, Abidin, 1995). The PSI-SF measures three factors: Parental Distress (PD), Parent-Child Dysfunctional Interaction (P-CDI), and Difficult Child (DC). These three factors are combined to provide a Total Stress score. Total stress scores of 86 or higher are considered significant (Abidin, 1995). For the purpose of this study, the PSI-SF total score was used for data analyses.

Reliability for the PSI-SF has been assessed by measuring test-retest reliability and by internal consistency measures (Coefficient alpha). Test-retest reliability was based on a 6-month retest interval with a sample size of 270 parents. Reliability coefficients for Total Stress, PD, P-CDI, and DC were .84, .85, .68, and .78 respectively. Additional reliability data were based on an internal consistency measure of Coefficient alpha. These reliability scores were based on scores from a sample of 800 subjects. The
alpha scores for Total Stress, PD, P-CDI, and DC were .91, .87, .80, and .85 respectively. Overall, the data have provided adequate information indicating that the PSI-SF is a reliable measure.

Although no validity data exist specifically for the PSI-SF (Allison, 1998), the PSI-SF has been correlated with scores on the PSI. The PSI-SF Total Stress score correlates strongly ($r=.94$) with the Total Stress score of the PSI. In addition, the Parental Distress and the Difficult Child factors correlate well with their counterpart sub-scales of the PSI ($r=.92$ and $r=.87$ respectively). However, the Parent-Child Dysfunctional Interaction correlates better with the Child Domain ($r = .73$) of the PSI than with the Parent Domain ($r = .50$) of the PSI.

*Beck Depression Inventory- II (BDI-II)*

The BDI-II (Beck, Steer, & Brown, 1996) is a self-report measure of depression in adolescents and adults age 13 years and older. It contains 21 items, each rated on a Likert scale ranging from 0 to 3. In addition to measuring depression, the authors indicate that high scores on particular items (items 2 and 9) may indicate a potential suicide risk. The BDI-II provides an overall score that can range from 0 to 63; scores from 0 to 13 are considered minimal, 14 to 19 are considered mild, 20-28 are considered moderate, and scores of 29 and above are considered severe. For the purpose of this study, the BDI total score was used for data analyses.

Reliability for the BDI-II has been assessed by measuring test-retest reliability and by internal consistency measures (Coefficient alpha). Test-retest reliability was based on a 1-week retest interval with a sample size of 26 individuals treated in an outpatient clinic. The test-retest reliability coefficient for the BDI-II was .93 and was
statistically significant (p<.001). In addition, reliability data were based on an internal consistency measure of Coefficient alpha. Internal consistency reliability coefficients were based on scores from two samples. The first sample was 120 college students and the second sample was 500 outpatients treated in various clinics for various illnesses including mood disorders, anxiety disorders, and adjustment disorders. The alpha scores for the two groups were .93 and .92, respectively. Overall, the data have provided adequate information indicating that the BDI-II is a reliable measure.

Validity for the BDI-II was assessed by examining convergent validity. To evaluate the convergent validity, individuals (n=191) were administered the BDI-II as well as the amended version of the original BDI (BDI-IA; Beck, Rush, Shaw, & Emery, 1979). The correlation between the two tests was very high (r=.93, p<.001) with the BDI-II mean score of 21.88 slightly higher than the mean score for the BDI-IA mean score of 18.92. The BDI-II was also compared to several other psychological measures, including measures of suicidal ideation (n=158), depression (n=87), anxiety (n=297), and hopelessness (n=158). Correlations between the BDI-II and these measures were .37, .71, .60, and .68, respectively. These correlation coefficients indicate moderate to high effect size and suggest that the BDI-II is adequately valid for assessing depression.

**Parenting Sense of Competency Scale (PSOC)**

The Parenting Sense of Competency Scale (PSOC, Appendix C) is a 17-item scale originally used to assess the self-esteem of parents of infants (Gibaud-Wallston & Wandersman, 1978). On this scale, parents rate each item on a 6-point scale ranging from strongly agree (1) to strongly disagree (6). The PSOC items load onto one of two factors; Skill-Knowledge or Value Comforting. Johnston and Mash (1989) reexamined
the PSOC and renamed the factors. The Skill-Knowledge factor was renamed Efficacy and the Value Comforting factor was renamed Satisfaction. Based upon this factor structure, item 17 from the Gibaud-Wallston and Wandersman (1978) version failed to load onto either factor and was dropped from the scale. Therefore, the current version of the PSOC contains 16 items (Johnston & Mash, 1989). For the purpose of this study, the total PSOC score was used for data analyses.

Reliability of the PSOC has been examined by several researchers. To assess the reliability of the PSOC, these researchers have examined its internal consistency and its test-retest reliability. Internal consistency scores for the Efficacy (Skill-Knowledge) factor range from .70 to .76. Internal consistency scores for the Satisfaction (Value Comforting) factor have been found to range from .82 to .75. Test-retest reliability was assessed by administering the scale to families at 6-week intervals. Results from this analysis reveal satisfactory correlations for the factors and overall scores ranging from .46 to .82 (reported in Johnston & Mash, 1989).

Validity for the PSOC has been assessed for parents of children between the ages of 4 and 9 years (Johnston & Mash, 1989). To assess the scale’s validity, a factor analysis was conducted to verify the factors created by Gibaud-Wallston and Wandersman (reported in Johnston & Mash, 1989). Factor analysis indicated that the Satisfaction scale accounted for 23.6% of the variance in responses. The Efficacy scale was found to account for 12.5% of the variance in responses. Only two items from the original scale were adjusted. One of the items (item 8) originally loaded on the Efficacy scale and was found to load better on the Satisfaction scale. The second item modified by Johnston and Mash (1989) was item 17, which did not load onto either factor and was
dropped from the scale. Although researchers have used this scale with parents of children aged birth to three years (e.g., Coleman & Karraker, 2003), no research has evaluated the validity of the PSOC for parents of children aged birth to three years.

*Family Support Scale (FSS)*

The Family Support Scale (FSS; Dunst, Jenkins, & Trivette, 1984) is an 18-item scale developed to evaluate the helpfulness of various sources of support to parents of young children (Appendix D). Parents rate each of the 18 items on a 5-point Likert scale ranging from “Not-At-All-Helpful” to “Extremely Helpful.” The FSS provides scores on five factors that represent “independently available sources of social support” (Dunst, Trivette, & Hamby, 1994, pp. 155). These factors are 1) Informal Kinship (i.e., friends, own children, and church), 2) Spouse/Partner Support (i.e., spouse/partner, and spouse/partner’s family), 3) Social Organizations (i.e., support groups, daycare centers, and co-workers), 4) Formal Kinship (i.e., own relatives), and 5) Professional Services (i.e., early intervention programs, physicians, and professional agencies). In addition, scores across these factors may be combined to provide an overall report of the parent’s sense of social support availability.

For the purpose of this study, the FSS was modified. The altered FSS contains the same items that were present in the original FSS; however, the parents were asked to identify the availability and use of each source of support. For each item, the parents identified whether the source of support was “Not Available,” “Available but Not Used,” or “Available and Used.” The directions for the FSS were changed to address the modifications. All other aspects of the scale remained intact. Items identified as “Available and Used” were tallied and used for data analysis.
Reliability of the FSS was established by assessing the internal consistency (Coefficient alpha) and through test-retest reliability. To examine the internal consistency, 224 parents completed the FSS. The average correlation between the items was .79 and the split-half (even-items vs. odd-items) reliability was .77. Overall, the authors report that the FSS has excellent internal reliability and is measuring a construct that they label social support (Dunst, Trivette, & Hamby, 1994). Both short- and long-term test-retest reliability were evaluated. To assess short-term test-retest reliability, 25 participants completed the FSS on two occasions, one month apart. The reliability for this group was .91 for the total score and had an average reliability of .75 (SD=.17) for each individual item. Long-term test-retest reliability was established by administering the FSS to 60 parents on two occasions, 1 to 2 years apart. The reliability for this group was .50 for the total score and had an average reliability score of .42 (SD=.15) for the individual items. Although these reliability scores are not as high as other reliability scores for the FSS, the authors report that these data indicate that the FSS is able to measure stability of social support relationships over time (Dunst, Trivette, & Hamby, 1994).

To examine the validity of the FSS, the researchers evaluated content validity, convergent validity, and criterion validity. Content validity was evaluated by comparing information from the factor analysis to the authors’ theoretical model which proposed multiple sources of support that were independent of each other (Dunst, Trivette, & Hamby, 1994). Further, the authors believe that data from the factor analysis provide evidence for convergent validity by demonstrating that the factors are not interrelated and have low correlations with each other. Finally, criterion validity was established by
having the 224 participants complete both the FSS as well as subscales from the Questionnaire on Resources and Stress (QRS, Holroyd, 1987). Results from this analysis indicate that the FSS is related in the predicted way to scores on the QRS. That is, higher levels of support were related to lower levels of stress and family problems (Dunst, Trivette, & Hamby, 1994). In all, the authors indicate that data collected to evaluate the validity of the FSS provide adequate evidence that the FSS is a valid measure of social support.

**Temperament and Atypical Behavior Scale (TABS)**

The Temperament and Atypical Behavior Scale (TABS; Neisworth, Bagnato, Salvia, & Hunt, 1999) is a 55-item assessment of atypical self-regulatory behavior for children from 11 to 71 months of age. To complete this scale, parents are asked to read each of the 55 items and decide if their child demonstrates each of the behaviors described by marking “yes” if their child exhibits the behavior or “no” if their child does not present the behavior. Behavior is assessed across four factors; Detached, Hyper-sensitive/active, Underreactive, and Dysregulated. The Detached factor assesses withdrawn, self-absorbed, and socially disconnected behavior in infants and young children. The Hyper-sensitive/active factor includes behaviors such as impulsivity, hyperactivity, hypersensitivity to environmental stimuli, and defiance. The Underreactive factor assesses behaviors indicating unresponsiveness to environmental stimuli. The Dysregulated factor examines the child’s ability to control and regulate neurophysiological behaviors such as sleeping and crying. These factors may also be combined to provide an overall score called a Temperament and Regulatory Index. Raw scores for the individual factors are converted to T-scores with a mean of 50 and standard
deviation of 10. The Temperament and Regulatory Index (TRI) raw score is converted to
a standard score with a mean of 100 and a standard deviation of 15. For the purpose of
this study, the TRI standard score was used in the data analyses.

Reliability for the TABS was assessed through analysis of internal consistency
and test-retest stability (Neisworth, Bagnato, Salvia, & Hunt, 1999). Internal consistency
of the TABS was assessed with three groups of children; children not at risk (n=621),
children with disabilities (n=212), and a pooled sample created by combining both groups
(n==833). The internal consistency scores for the group of children not at risk ranged
from .66 to .77 for the four factors and was .84 for the TRI. The internal consistency
scores for the group of children with disabilities ranged from .81 to .92 for the four
factors and was .95 for the TRI. The internal consistency scores for the combined group
ranged from .79 to .91 for the four factors and was .95 for the TRI. Test-retest reliability
was assessed with a sample of 157 who were assessed 2-3 weeks following their initial
TABS assessment. Of the 157 children included in this assessment, 97 children were not
at risk for a disability and 60 children were diagnosed as having a disability. The test-
retest stability scores for the group of children not at risk ranged from .73 to .92 for the
four factors and was .91 for the TRI. The internal consistency scores for the group of
children with disabilities ranged from .78 to .91 for the four factors and was .93 for the
TRI. The internal consistency scores for the combined group ranged from .81 to .92 for
the four factors and was .94 for the TRI. The authors indicate that these reliability scores
are adequate for research purposes.

Validity of the TABS was measured by assessing both content and construct
validity. Content validity was found through item development and the underlying
theoretical factors of the TABS. In item selection, the developers chose items that were characteristic of, or highly associated with, various disorders of infancy and childhood. Further, results of a factor analysis indicate that all four theoretical factors have eigenvalues greater than 1 and explain at least 5% of the rotated variance. The authors report that these results are indicative of the TABS ability to assess these difficulties in infants and young children. Construct validity was assessed by examining the scores of children with and without disabilities. The authors indicate that the scores of the four TABS factors as well as the TRI acted as expected. For example, there was no relationship between TABS scores and chronological age of the child. Further, as expected, children with disabilities scored higher on the TABS than children without disabilities. In addition, there was no relationship between TABS scores and the child’s gender. Finally, the scores obtained on the TABS generalize across settings (home and daycare/preschool). Given that the scores followed these expectations, the authors believe that the TABS has adequate construct validity.

*Parent Perception of Child Functioning Scale (PPCFS)*

The Parent Perception of Child Functioning Scale (PPCFS) was developed by the author for the purpose of this study. The PPCFS was designed to assess the severity of the child’s developmental and medical disabilities as reported by the parent. This scale assesses the parent’s perception of the child’s language skills, motor skills, social skills, and overall health and was modeled after the Child Vulnerability Scale (CVS, Forsyth, Horwitz, Leventhal, Burger, & Leaf, 1996). The measure is composed of 14 statements regarding the child’s developmental and medical status. Parents will rate each statement on a Likert scale ranging from 1 (“Strongly Agree”) to 4 (“Strongly Disagree”). Higher
scores on this measure indicate greater parent perceived disability severity. For the purpose of this study, the total score from the PPCFS was used in the data analyses.

As this measure was developed by the author for this study, psychometric data are not available for the PPCFS. However, to assess construct validity an expert panel consisting of a psychologist, a certified behavior analyst, and two parents of children with special needs was asked to evaluate the content of the questionnaire. Several modifications were recommended by the members of the panel. First, it was recommended that the title of the scale should be changed from “Parent Perception of Child Disability Severity Scale” to “Parent Perception of Child Functioning Scale” in an attempt to make the title more positive. Second, minor modifications were recommended to clarify specific items. For example, it was recommended that item 2 should be changed from “My child interacts with adults as much as other children his/her age” to “My child interact with adults as much as other children his/her age interact with adults” in an attempt to make the item more clear. Also, it was suggested that the wording for item 8 be changed from “My child listens as well as other children his/her age” to “My child follows directions as well as other children his/her age.” The panel did not recommend any other changes to the items in the scale. The final version of the scale can be seen in Appendix E.

Procedure

Prior to initiating the data collection phase of this study, approval was obtained through the University of South Florida Institutional Review Board.
Step One: Selection of Participants

Potential participants were provided an informed consent form containing information as to the purpose and goals of the study. In addition, all potential participants met the inclusion criteria set forth to enroll in this study, including the identification of a medical and/or developmental disability by an ESP evaluator at the initial evaluation. Medical diagnoses were identified by using criteria from the ICD-10 (WHO, 1994). Developmental diagnoses were identified by using the DSM-IV-TR (APA, 2000). All diagnoses were made by evaluators from the ESP program which included school psychologists, clinical psychologists, physicians, and nurse practitioners. Service coordinators at the ESP clinics were available to clarify any questions as well as to provide potential participants with the contact information for the researcher, should the participants have required further information or needed to debrief after completing the questionnaires. Participants were ensured that their treatment in the ESP program would in no way be influenced by their decision to participate in this study. Further, participants were informed as to the steps taken to ensure their confidentiality. Enrollment into the study continued until 101 female primary caregivers volunteered to participate.

Step Two: Data Collection

Potential participants were informed of the study in one of two settings: the intake visit in the home or at the clinic. Each family who brought an infant and toddler to the ESP clinic had an intake visit with a service coordinator. This visit is conducted in the family’s home and provides the service coordinator with an opportunity to gather information about the family and the child. During this visit, the service coordinator
informed potential participants of the study and provided the female primary caregiver an opportunity to participate in the study. Therefore, the first setting in which female primary caregivers enrolled in the study was during the intake visit in their home. Many potential participants, however, had already completed this intake visit and were awaiting their initial visit to the ESP clinic. Potential participants who had already received their intake visit were informed of the study and provided an opportunity to participate at their initial evaluation at the ESP clinic. Therefore, all potential participants were enrolled in the study either during the intake visit conducted at their home or, if they had already had their intake evaluation, at the initial evaluation at the ESP clinic. A specific script was read by all service coordinators at all enrollment sites to facilitate consistency in data collection (Appendix F).

Female primary caregivers who volunteered to participate were asked to sign the informed consent form with the service coordinator as witness and complete the self-report questionnaires (PSI-SF, BDI, PSOC, TABS, PPCFS, and FSS). Following the initial evaluation at the ESP clinic, data from their child’s chart pertaining to this study (i.e., medical diagnoses, developmental diagnoses, etc.) were copied. To help control for order effect, each female primary caregiver was instructed to complete the questionnaires in one of five specific sequences. Packets were assembled and labeled with the questionnaires in the appropriate sequences. The first sequence required the female primary caregivers to complete the forms in the following order: Family Demographics, PSI-SF, BDI, PSOC, TABS, PPCFS, and FSS. The second sequence required the female primary caregivers to complete the forms in the following order: Family Demographics, FSS, PSI-SF, BDI, PSOC, TABS, and PPCFS. Each subsequent sequence began with the
next scale, in order. Regardless of order, female primary caregivers were able to complete the questionnaires in approximately 30 minutes. After each participant completed the questionnaires, the service coordinator asked if there was anything that they would like to discuss based upon the questions or their responses.

**Step Three: Data Management**

Female primary caregivers who volunteered to participate were assigned a derived study identification number that was based upon the order in which the questionnaires were completed, and the order in which informed consent was signed. For example, the fourth participant who entered the study and completed the questionnaires in the fifth sequence (Family Demographics, PSOC, TABS, PPCFS, FSS, PSI-SF, and BDI) was participant number “4-5”. In addition, all packets were labeled such that the date the participant completed the questionnaires, the location the questionnaires were completed (home or clinic), and which clinic the participant visits (Hillsborough, Polk, Highlands, and Manatee) was identified. All questionnaires and forms completed for this study were labeled with the participant’s ID number. Following the initial evaluation at the EIP clinic, the researcher extracted salient data from the child’s chart. Data included developmental and medical diagnoses and demographic information. Once collected, all of the participant’s data were transcribed onto a computer spreadsheet (Appendix G). To assess the accuracy of data transferred from the patients’ charts to the computer spreadsheet, a second rater reviewed 10% of the data transferred to assess verify accurate transcription. Female primary caregivers could have requested to withdraw their consent to participate at any point during the data collection phase of this study. However, once
data collection was completed, data from all remaining participants were included in the analyses. Results of the study are available at the ESP clinic.
Chapter Four

Results

The purpose of this chapter is to describe the results of the statistical analyses conducted for this study. The chapter begins with a discussion of the analysis comparing data collected in either the home or clinic setting. The chapter ends with the analyses completed for each research question.

Reliability Coefficients

To assess the reliability of the scales used for this study, Cronbach’s alpha internal reliability scores were calculated for each scale. Based upon the data from this study, Cronbach’s alpha values ranged from .743 to .958. These scores suggest an adequate level of reliability (Aron & Aron, 1997). Specific data for each questionnaire can be seen in Table 3.
<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>Alpha Scores</th>
</tr>
</thead>
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<td>Parenting Stress Index-Short Form</td>
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<td>Total Score</td>
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<tr>
<td>Parental Distress</td>
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</tr>
<tr>
<td>Parent Child Dysfunctional Interaction</td>
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</tr>
<tr>
<td>Difficult Child</td>
<td>.940*</td>
</tr>
<tr>
<td>Beck Depression Index-II</td>
<td>.927*</td>
</tr>
<tr>
<td>Temperament and Atypical Behavior Scale</td>
<td></td>
</tr>
<tr>
<td>TRI</td>
<td>.946*</td>
</tr>
<tr>
<td>Detached</td>
<td>.878*</td>
</tr>
<tr>
<td>Dysregulated</td>
<td>.786*</td>
</tr>
<tr>
<td>Hyper-active/sensitive</td>
<td>.910*</td>
</tr>
<tr>
<td>Underreactive</td>
<td>.899*</td>
</tr>
<tr>
<td>Parent Perception of Child Functioning Scale</td>
<td>.840*</td>
</tr>
<tr>
<td>Family Support Scale</td>
<td>.743*</td>
</tr>
<tr>
<td>Parenting Sense of Competency Scale</td>
<td></td>
</tr>
<tr>
<td>Total Score</td>
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<tr>
<td>Satisfaction</td>
<td>.779*</td>
</tr>
<tr>
<td>Self-Efficacy</td>
<td>.806*</td>
</tr>
</tbody>
</table>

* indicates an adequate level of internal reliability (Aron & Aron, 1997)

Settings

Participants of this study completed the questionnaires in one of two settings, either in their home or in one of the ESP clinics (Table 4). To assess for differences between participants who completed the study questionnaires in their home and those who completed the questionnaires at one of the ESP clinics, a multivariate analysis of variance (MANOVA) was used. The results of the MANOVA suggest that there were no significant differences between the data collected from the participants who completed their packets at home from those that completed their packets in one of the ESP clinics (Wilks’ lambda=.906, F(6,84)=1.445, p=.207).
Table 4

| Sample Sizes, Means, and Standard Deviations of Dependent Variables Collected From Participants in Home and in Clinics |
|--------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                    | Home (n=27)     | Clinic (n=64)   |                  |                  |                  |
|                    | Mean  | sd   | Mean  | sd   |                  |                  |
| Parenting Stress Index-Short Form | 71.74 | 27.45 | 71.17 | 24.75 |                  |                  |
| Beck Depression Index-II          | 7.93  | 7.23  | 10.19 | 9.99  |                  |                  |
| Temperament and Atypical Behavior Scale | 79.41 | 23.53 | 83.56 | 24.06 |                  |                  |
| Parent Perception of Child Functioning Scale | 27.93 | 7.04  | 27.77 | 8.59  |                  |                  |
| Family Support Scale            | 7.78  | 2.78  | 6.59  | 3.19  |                  |                  |
| Parenting Sense of Competency Scale | 73.74 | 10.81 | 70.17 | 13.93 |                  |                  |

Research Question 1

It was hypothesized that parent reported utilization of social supports would be the best predictor of parent perceived competency. This hypothesis was not supported by the data. The variables used to test this hypothesis included the female primary caregiver age and education; the child’s age, gender, race, and diagnoses; total scores from the PSI-SF, BDI, PPCFS, FSS, and PSOC; and the TRI score from the TABS. To test this hypothesis, a Pearson Product-Moment Correlation coefficient (PPMCC) was calculated to measure the relationships between demographic and dependent variables and parenting sense of competency. The variables found to be significantly correlated with the total score from the PSOC were the total score from the PSI-SF ($r=-.686$, $p<.01$), the total score from the BDI ($r=-.567$, $p<.01$), the TABS ($r=.397$, $p<.01$), and the FSS ($r=.263$, $p=.012$) (Table 5).

Next, a multiple regression analysis was conducted to assess the relative contribution of each variable to the total score from the PSOC while holding all other variables constant. All of the variables were included in the regression model and accounted for 61% of the variance in the total score of the PSOC ($R^2=.608$, $R^2$-adj.=.548, $F(12,78)=10.078$, $p<.001$). The results of the multiple regression revealed that PSI-SF,
BDI, and PPCFS significantly contributed to the variability observed in PSOC scores (Table 6). Studentized residuals ranged from -3.335 to 2.952 with a mean of -.003. Cook’s distance ranged from .000 to .137, suggesting that outliers did not significantly impact the results of the data analysis.
Table 5

**Correlation Matrix of Demographic and Dependent Variables**

<table>
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<tr>
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<th>4</th>
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<td>-.567**</td>
<td>.397**</td>
<td>- .052</td>
<td>.263*</td>
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</table>

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).
1-Female Primary Caregiver Age; 2-Female Primary Caregiver Education Level; 3-Child’s Age; 4-Child’s Gender; 5-Child’s Race; 6-Medical Diagnoses; 7-Developmental Diagnoses; 8-Both Medical and Developmental Diagnoses; 9-Parenting Stress Index-Short Form; 10-Beck Depression Inventory-II; 11-Temperament and Atypical Behavior Scale; 12-Parent Perception of Child Functioning Scale; 13-Family Support Scale; 14-Parenting Sense of Competency Scale
Table 6

Multiple Regression Examining the Relationship of Each Variable to PSOC While Holding All Other Variables Constant

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
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<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>(Constant)</td>
<td>84.530</td>
<td>9.453</td>
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<tr>
<td>Female Primary Caregiver Age</td>
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<td>.140</td>
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<tr>
<td>Female Primary Caregiver Education</td>
<td>-1.382</td>
<td>.956</td>
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<tr>
<td>Child Age</td>
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<tr>
<td>Child Gender</td>
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<td>Child Race</td>
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<td>FSS</td>
<td>.259</td>
<td>.332</td>
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</table>

† indicates significance at the α=.05 level

Research Question 2

It was hypothesized that female primary caregivers of children with developmental and medical diagnoses would report higher levels of stress and depression than female primary caregivers of children with developmental diagnoses only. This hypothesis was supported by the data. To examine this question, a MANOVA was used to compare the total scores from the PSI-SF and BDI of female primary caregivers whose child has both developmental and medical diagnoses to those whose child only has a developmental diagnosis. The results of the MANOVA were significant at the α=.05 level (Wilks’ Lambda=.914, F(2,77)=3.641, p=.031). However, based upon Box’s M Test of Equality of Covariance Matrices, the equality of variances assumption was not tenable (Box’s M=11.612, F(3,133001.8)=3.753, p=.01), indicating that the F value
calculated by the MANOVA may be less robust, resulting in an increased likelihood for a Type I error. Therefore, post hoc analyses included Levene’s Test for Equality of Variances for both the PSI-SF and the BDI, as well as individual t-tests which examined differences between groups for the PSI-SF and BDI while accounting for different variances as needed. Results of the post hoc analyses revealed that the variances of the two groups were significantly different for the BDI (F(1,78)=7.898, p=.006) but not the PSI-SF (F(1,78)=1.503, p=.224). As a result, the t-test assessing differences between groups on the BDI was calculated while considering unequal variances, while the t-test assessing differences between groups on the PSI-SF assumed equal variances. A modified Bonferroni was utilized when examining the significance of the t scores. Significant differences were found between groups on both the BDI (t(43.65)=-2.33, p=.024) and the PSI-SF (t(78)=-2.023, p=.047) (Table 7).

Table 7

<table>
<thead>
<tr>
<th>Scale</th>
<th>Medical and Developmental Diagnoses (n=30)</th>
<th>Developmental Diagnoses Only (n=50)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
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<tr>
<td>PSI-SF</td>
<td>79.93</td>
<td>28.51</td>
</tr>
<tr>
<td>BDI*</td>
<td>13.20</td>
<td>11.43</td>
</tr>
</tbody>
</table>

* analysis accounts for significantly different variances between groups
† significant at α=.05
†† significant at α=.025

Research Question 3

It was hypothesized that female primary caregivers of children with clinically significant levels of behavioral problems (defined as clinically significant ratings on TABS) would report higher levels of psychopathology (i.e., stress and depression) than
female primary caregivers of children without clinically significant levels of behavioral problems. This hypothesis was supported by the data. To answer this question, a MANOVA was used to compare the total scores from the PSI-SF and BDI scores of female primary caregivers of children with behavioral problems (n=30; defined as a TABS standard score of 69 or less) to scores of female primary caregiver of children without behavioral problems (n=61; TABS score of 70 or higher). Results of the MANOVA indicated that there was a significant difference between the two groups (Wilks’ Lambda=.599, F(2,88)=29.433, p<.001). However, based upon Box’s M Test of Equality of Covariance Matrices, the equality of variances assumption was not tenable (Box’s M=10.969, F(3,79660)=3.551, p=.014), indicating that the F value calculated by the MANOVA may be less robust, resulting in an increased likelihood for a Type I error. Therefore, post hoc analyses included Levene’s Test for Equality of Variances for both the PSI-SF and the BDI, as well as individual t-tests which examined differences between groups for the PSI-SF and BDI while accounting for different variances as needed. Results of the post hoc analyses revealed that the variances of the two groups were significantly different for the PSI-SF (F(1,89)=5.171, p=.025) and the BDI (F(1,89)=6.082, p=.016). Therefore, post hoc t tests were conducted to assess for individual differences between groups on each measure while accounting for the difference in group variances. A modified Bonferroni was utilized when examining the significance of the t scores. Follow-up analyses indicated a significant difference between groups on the PSI-SF (t(41.91)=6.74, p<.001) and the BDI (t(45.85)=3.14, p=.003) (see Table 8).
Table 8

Results of Post Hoc Tests Comparing PSI and BDI Scores of Parents of Children with Significant Behavior Scores to Those of Parents of Children with Non-Significant Behavior Scores

<table>
<thead>
<tr>
<th>Scale</th>
<th>Non-Significant Behavior Score (n=61)</th>
<th>Significant Behavior Score (n=30)</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>PSI-SF</td>
<td>60.11</td>
<td>16.63</td>
<td>94.17</td>
<td>25.12</td>
</tr>
<tr>
<td>BDI</td>
<td>7.3</td>
<td>7.85</td>
<td>14.03</td>
<td>10.38</td>
</tr>
</tbody>
</table>

† significant at α=.05
†† significant at α=.025

Research Question 4

It was hypothesized that the variance of parent-perceived competency explained by the utilization of social supports would be different based upon female primary caregiver education and age. This hypothesis was not supported by the data. A multiple regression analysis was used to assess the moderating effects of social supports based upon female primary caregiver education and age. The variables used in this analysis were Female Primary Caregiver Age, Female Primary Caregiver Education, and FSS as well as the interactions between Female Primary Caregiver Age and FSS, and Female Primary Caregiver Education and FSS. The results of the multiple regression indicate that the variables included in this model do not account for a significant amount of the variance in PSOC scores (R^2=.107, adj. R^2=.054, F change(5,85)=2.036, p=.082) (Table 9). Studentized residuals ranged from -2.52 to 2.26 with a mean of -.003. Cook’s distance ranged from .000 to .203, suggesting that outliers did not significantly impact the results of the data analysis.
Table 9

*Results of Multiple Regression Assessing the Moderating Effects of Social Supports Based Upon Female Primary Caregiver Education and Age on Parenting Sense of Competency*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>89.633</td>
<td>17.003</td>
<td>5.272</td>
<td>.000</td>
</tr>
<tr>
<td>Female Primary Caregiver Age</td>
<td>-.450</td>
<td>.517</td>
<td>-.871</td>
<td>.386</td>
</tr>
<tr>
<td>Female Primary Caregiver Education</td>
<td>-3.613</td>
<td>2.847</td>
<td>-1.269</td>
<td>.208</td>
</tr>
<tr>
<td>FSS</td>
<td>-2.915</td>
<td>2.386</td>
<td>-1.221</td>
<td>.225</td>
</tr>
<tr>
<td>Female Primary Caregiver Age*FSS</td>
<td>.083</td>
<td>.075</td>
<td>1.102</td>
<td>.273</td>
</tr>
<tr>
<td>Female Primary Caregiver Education*FSS</td>
<td>.436</td>
<td>.388</td>
<td>1.121</td>
<td>.265</td>
</tr>
</tbody>
</table>
Chapter Five

Discussion

The purpose of this study was to examine the relative contribution of various child, female primary caregiver, and utilization of social support variables to parent perceived competency. Data were collected and analyzed from 91 female primary caregivers whose infant or toddler was evaluated through the University of South Florida Early Steps Program. This chapter will provide a description of the results, interpretation of the results, and the implications of these results as they pertain to intervention development. The chapter concludes with limitations of this study and recommendations for future directions for research.

Description of the Results

Data from the female primary caregiver self-report questionnaires were collected and analyzed. The following results were obtained:

1. Female primary caregiver utilization of social supports did not significantly predict parent perceived competency.

2. Female primary caregivers whose child has both medical and developmental disabilities reported significantly higher levels of stress and depression as compared to female primary caregivers of children who had developmental disabilities only.

3. Female primary caregivers whose child had clinically significant behavioral concerns reported more stress and depression symptoms as compared to
female primary caregivers of children with non-significant levels of disruptive behavior.

4. Female primary caregiver age and education level was not found to moderate the relative contribution of utilization of social supports to parent reported sense of competency.

Discussion of the Results

Utilization of Social Supports and Parent Sense of Competency

Unlike previous research which has demonstrated that the utilization of social supports is significantly related to parent perceived competency (Crnic & Greenberg, 1990; Dyson, 1997; Floyd & Gallagher, 1997; Hess, Papas, & Black, 2002; Sloper, 1999; Teti, Gelfand, & Pompa, 1990), the results of this study did not support the relationship between parent-perceived competency and the use of social supports. A plausible explanation for these results is that during the data collection time period for this study, the central Florida area was impacted by several major hurricanes. Although some of the areas were more impacted by these storms than others, the majority of the participants came from the counties that were most affected by the hurricanes (Polk and Highlands counties). Many of the families were displaced and without their typical routines for months following the storms. In fact, many of the families have not been able to return to their homes. During these challenging times, participants may have utilized supports to manage issues related to the environmental stressors and did not have the opportunity to access the type of support systems assessed by this study. If this study were to be replicated in the future, the results may be very different in the absence of such environmental stressors.
In addition to the hurricanes and environmental stressors, the demographics of the participants may serve as a potential reason for the disparity between the results and the expected outcome of the study. As indicated, most (79%) of the participants had a college education. Further, 35% of the participants had received graduate level training. Previous research has clearly demonstrated that parents with higher education report lower levels of stress (Hess, Papas, & Black, 2002; Hess, Teti, & Hussey-Gardner, 2004). Mother’s with higher levels of education have better coping skills and report lower levels of stress and depression (Davis, Edwards, Mohay, & Wollin, 2003). Therefore, it is possible that the participants in this study may have had greater levels of parenting skills and knowledge necessary to cope with the challenges presented to them by their child and did not need to seek additional social supports.

Similar to previous research (Dyson, 1997; Floyd & Gallagher, 1997; Hodapp, Dykens, & Masino, 1997; Hodapp, Fidler, & Smith, 1998; Manuel et al., 2003; Östberg & Hagekull, 2000), this study found that parent-reported stress and depression is significantly related parent-perceived competency. In addition, the results of this study support previous research that found that child illness severity (Lemanek, Jones, & Lieberman, 2000) is related to parent competency. These results suggest that characteristics attributed to both the female primary caregiver and the child are related to the parent’s sense of competency. To further explore the relationships between female primary caregiver psychopathology and parenting sense of competency with the utilization of social supports, the data from this study were divided into two groups. The first group (n=13) consisted of participants who reported significant stress scores (PSI-SF scores of 86 or higher) and low levels of parenting sense of competency (PSOC scores
less than 1 standard deviation below the mean, less than 60). The second group (n=18) consisted of participants who reported below significant stress scores (PSI-SF scores below 86) and high levels of parenting sense of competency (PSOC scores greater than 1 standard deviation above the mean, greater than 83). An ANOVA was computed and revealed a significant difference between the two groups on the utilization of social supports (F(1,29)=11.57, p=.002) with the first group (mean=5.08, sd=1.71) reporting significantly less utilization of social support compared to the second group (mean=8.06, sd=2.80). These results suggest that parents who report clinically significant levels of stress and poorer sense of competency utilize fewer social supports than those parents who do not report significant stress and have higher levels of competency.

**Infant and Child Diagnosis and Parent Reported Psychopathology**

The results of this study suggest that female primary caregivers of children with medical and developmental disabilities are at higher risk for symptoms of psychopathology (i.e., stress and depression). These results support previous research reporting that parents of children with developmental and medical disabilities report higher levels of stress and depression (Blacher, Shapiro, Lopez, Diaz, & Fusco, 1997; von Gontard et al., 2002; Hodapp, Fidler, & Smith, 1998; Olsson & Hwang, 2002; Sanders & Morgan, 1997; Sloper, 1999; Veisson, 1999). However, it should be noted that PSI-SF scores for parents of children with developmental delays only and those scores of parents whose children have medical and developmental delays were, on average, below the cutoff score for clinically significant stress (PSI-SF total score of 86 or higher). This indicates that, although there is a statistically significant difference between the two groups, there is no clinical significance since neither group reports
consistent scores above the clinical threshold. Similarly, the BDI scores were significantly different between the comparison groups. However, the scores from the group whose children have both medical and developmental disabilities reported a mean depressive symptom score (mean=13.2) in the mild range (mild range are scores of 0-13, moderate range are scores from 14-19). Similar to the stress scores reported by parents in this analysis, although there is statistical significance between groups, there is little clinical significance as it relates to significant depressive symptoms. These findings have important clinical implications. As clinicians work with parents of children with medical and/or developmental disabilities, it is very important that information is collected regarding the parent’s emotional status. Each parent should be considered on an individual basis and services should be provided to those in need. The stress and depressive symptoms of parents of children with medical and/or developmental disabilities should be assessed to inform interventions. Therefore, it is suggested that the focus of early evaluation and intervention shift from being child focused to family focused. This will allow for clinicians to include an assessment of parental psychopathology and symptomatology in order to recommend the best possible interventions for the child and his/her family.

Child Behavior and Parent Reported Psychopathology

Similar to previous research (Floyd & Gallagher, 1997; McBride, Schoppe, & Rane, 2002; Sanders & Morgan, 1997), this study demonstrated a significant difference in parent-reported psychopathology between groups based upon child behavioral problems. Female primary caregivers whose children have behavior problems were much more likely to report significantly higher stress and depression symptoms. Further,
parents of children with behavior problems reported, on average, clinically significant stress scores (PSI-SF score above 86) and moderate levels of depressive symptoms (BDI score between 14 and 19). Whereas the stress and depressive symptoms reported by parents of children without behavior problems were below the cutoff scores for clinical significance.

Implications of the Results to Intervention Development

The primary purpose of this study was to examine the variables that best predict parent-perceived competency, as this has been shown to be an important factor related to child outcomes (Coleman & Karraker, 2003; Cunningham & Boyle, 2002; Feldman & Werner, 2002; Lemanek, Jones, & Lieberman, 2000). Understanding the relationships that these variables have with parent-perceived competency is important because it informs intervention development. As a school psychologist or any other professional works with a child and his/her family, the main objective is to identify the problem and develop and implement an intervention with the highest likelihood of success. The results of this study will assist in the development of interventions by identifying specific variables to target. There are several areas that should be considered when developing interventions including female primary caregiver variables as well as child variables.

Female Primary Caregiver Focused Interventions

Female primary caregiver stress and depressive symptoms are significantly related to parent-perceived competency. Therefore, to increase parent-perceived competency, interventions should focus on treating the stress and depressive symptoms. These interventions may take many forms depending on the severity of the parent’s symptomatology. Interventions may include support groups or group therapy (Guimon,
Both of these would provide the parent with an individual or group of individuals who may be experiencing similar challenges and can talk about problems and feelings that they are experiencing. This will meet several needs of the parent. First, it will help them recognize that they are not the only person who is challenged by having a child with a disability. This can provide some sense of comfort as well as help them realize that it was not something that they may have caused. Second, it provides a safe place to vent and explore their feelings. Many times, just talking about one’s problems will help identify potential solutions. Third, support groups and group therapy can help the parent learn valuable skills to help them cope with their own stress and depressive symptoms. As parents interact with one another, they will share coping strategies and techniques that can help them deal with the personal, mental health problems experienced when dealing with a child with complicated issues. Finally, groups provide the parent with a break from the child and from the environment that is causing the stress and/or depressive symptoms. This is important as parents must remember that there is a world outside of their home and that there are opportunities for respite and enjoyment.

As symptoms increase in frequency and intensity, interventions may become more intrusive. Individual psychotherapy may be utilized to relieve stress and depressive symptoms. Cognitive behavioral therapy may be effective in relieving many of the symptoms associated with stress and depression (NIMH, 1999). In addition, as the symptoms become more impairing, medication interventions may be utilized to relieve the symptoms (NIMH, 1999). However, a combination of medication and psychotherapy could be implemented and has been proven to be very effective in improving symptoms (Bannan, 2005; Wright, 2005). Finally, parent training may be used to help parents
improve specific skills (i.e., time out for children with behavioral problems) necessary to help their child and cope with challenges that they may encounter (Hess, Teti, & Hussey-Gardner, 2004).

*Child Focused Interventions*

The results of this study suggest that the presence of developmental and medical diagnoses is significantly related to parent stress and depressive symptoms. Therefore, in addition to targeting parent symptoms, interventions should be implemented that will decrease the child’s symptoms and/or improve the child’s development. Interventions developed to address medical issues are beyond the scope of this paper, however, it is important for parents to become educated and seek professional assistance with any medical disability. Asthma, diabetes, cancer, and AIDS are significant medical issues that impact many children. Health professionals should assist parents in understanding the disability/disease and provide training so that the parent can help the child.

Developmental disabilities may be treated in various ways. Children with developmental disabilities may benefit from therapeutic interventions such as speech therapy, occupational therapy, and physical therapy. The implementation of such interventions is frequently child focused, but includes parent training. That is, parents may bring their child to a therapist’s office once or twice a week, where the child works with the therapist for the allotted time. The therapist then trains the parent in the techniques to use at home that will increase the child’s developmental skills and foster appropriate development. These interventions place the parent in the ideal position to provide help for their child as well as develop their own skills. This empowers parents and increases competency.
Finally, many developmental disabilities are accompanied by medical and behavioral issues. For example, children with Down’s syndrome frequently suffer from heart conditions as well as thyroid problems. A combination of medical interventions (i.e., surgery for heart problems and thyroid medication) and developmental interventions (i.e., physical therapy to assist with hypotonia and speech therapy) are necessary (Ramirez & Morgan, 1998; Samango-Sprouse, 1996). Further, children who develop developmental disorders such as autism present with significant developmental delays and behavioral difficulties. These children need developmental interventions (i.e., speech therapy) but also need behavioral support (i.e., positive behavioral support). In all, whether a child has a developmental disability, medical illness, or some combination, the parent must be supported, educated, and trained so that he or she can meet the needs of the child as well as increase their feelings of self-efficacy, thereby improving he or she perceived competency.

Limitations

The degree to which the conclusions of a study can be generalized to individuals not participating in the study is dependent upon the limitations inherent in the study. This study had three primary limitations. The first limitation was related to the participant pool and the extent to which it was representative of all parents of children with medical and developmental disabilities. All of the participants for this study were solicited from patients at the University of South Florida Early Steps Program. Although referrals to this program came from many sources, one cannot be sure that characteristics of these patients were similar to those characteristics of children and families that do not participate in the program. Further, the participants in this study were not a random
A sample of patients visiting the USF ESP clinics. During the enrollment period of the study, all patients visiting the ESP clinics for their first visit were asked to participate. This type of sample, a convenience sample, did not ensure that the sample was representative of the population at large. Therefore, the results obtained, though characteristic of the sample, may not generalize to the larger group from which the sample was taken. Finally, specific demographic data were not collected for the participants that may have better explained the results from the data analyses. For example, the support and availability of a spouse was not assessed in this study, but may have had significant implications for the reported stress, depression, and sense of competency reported by the female primary caregivers, as previous research has demonstrated that single mothers report significantly higher stress levels compared to married mothers (Cairney, Boyle, Offord, & Racine, 2003). Therefore, the presence or absence of a supportive spouse may have impacted the data collected for this study.

The second limitation is in regard to the tools that were used for this study. Self-report measures do not directly assess behavior; instead, they provide a rater’s perception of that behavior. Further, this perception may have been influenced by many extraneous factors. That is, female primary caregivers’ report of their own behavior and the behavior of their child may have been influenced by recent events and may not have represented their typical behavior. Further, honesty is in question when using a self-report measure. Often, those completing questionnaires will report scores that make them appear more socially acceptable. In addition, the psychometric properties of several of the questionnaires used limited the reliability of the findings from this study. Although frequently used in children from birth to three, the validity of the PSI-SF and the PSOC
has not been studied. Similarly, the PPCFS was created for this study and, although the reliability (Cronbach’s alpha) assessed by the data collected for this study indicated adequate reliability, validity data are not available. Finally, unlike the normative sample to which scores were compared, participants in this study completed the PSI-SF and BDI-II in a supportive environment, which could have restricted the range of scores obtained on these scales. Therefore, the measures used in this study may have limited the interpretation of the data collected.

Finally, there were extraneous variables that impacted many of the participants more so than they impacted other participants. As mentioned previously, during the data collection phase of this study, the geographical area from which this study drew participants was significantly impacted by several major hurricanes. Many families were relocated, placed in temporary housing, or left homeless. Children’s schools and daycare centers were condemned and closed. The stress and impact that these situations had on the parents participating in this study are immeasurable. Further, there is no way to differentiate between stress and depressive symptoms caused by the child (what was to be measured for the purposes of this study) and the stress and depressive symptoms created by the environmental stressors. This significantly impacts the generalizability and interpretability of the data collected for this study.

Future Directions for Research

There are many important questions that need to be explored in future research. First, further research needs to be conducted to explore the relationship between child-based interventions and parent-perceived competency. Although research has demonstrated a relationship between parent-perceived competency and child outcomes
(Coleman & Karraker, 2003; Feldman & Werner, 2002; Johnston, 1996; Lemanek, Jones, & Lieberman, 2000; Teti, Gelfand, & Pompa, 1990), research has failed to empirically demonstrate the impact of infant and toddler improvements on parent competency. Future research should examine the ways in which parent sense of competency is impacted as an infant or toddler progresses through therapy and medical interventions. Further, it would be important to assess the difference between child-based therapy with and without parent training on improving parent perceived competency.

Second, future research should examine the efficacy of child-based interventions on child development and symptom improvement. Very little research has systematically examined the efficacy of interventions for children birth to three years old. A systematic evaluation of interventions will help discover new interventions and identify ways to improve existing interventions. As effective treatments are identified, increases will be seen in the infant and toddler responses to therapy, which, in turn, will improve parent-perceived competency. Although early intervention makes logical, clinical sense, empirical investigations will demonstrate how to better intervene.

Third, future research should focus on the utilization of social supports. Previous research has demonstrated the relationships between the use of social support and parent competency (Dyson, 1997; Floyd & Gallagher, 1997; Hess, Papas, & Black, 2002; Sloper, 1999); however, additional research should examine geographical differences. For example, a thorough examination of rural and urban areas may reveal that competency in parents who live in urban areas, where resources are more plentiful, is more dependent on the utilization of social supports, whereas the competency of those who live in rural areas tend to be more related to their own psychopathology and skills.
Research in this area will help identify ways to provide specific services in areas where they are needed.

Finally, future research should begin to examine the effects of significant behavior problems on early child development. When examining behavioral problems in children, research has typically focused on children aged three years and older. This study demonstrated that children, under the age of three, demonstrate significant behaviors that may impact their development. A better understanding of the relationship between early challenging behaviors and child development will better inform intervention development for children birth to three years with developmental and behavioral problems.
References


Holroyd, J. (1987). *Questionnaire on Resources and Stress: For families with chronically ill or handicapped members*. Brandon, VT: Clinical Psychology Publishing.


Appendices
Appendix B: Demographic Page

Study ID #: ___ - ___.

Demographic Page

Maternal Information

Maternal Education Level:
1. Less than High School
2. High School Diploma/GED
3. College
4. Graduate School

Maternal DOB: ___________

Legal Guardian:
1. Biological Parent
2. Adoptive Parent
3. Foster Parent
4. Step Parent
5. Grandparent
6. Other

Family Information

Household Size: Adults: ________ Children: ________

Age of other children in home: ___, ___, ___, ___, ___, ___

Child Information:

Gender:
1. Male
2. Female

Race:
1. African American
2. Asian American
3. Caucasian

Age: ________

Diagnoses:
1. Medical
2. Developmental
3. Other
Appendix C: Parenting Sense of Competency Scale (PSOC)

Being A Parent

Appendix D: Family Support Scale (FSS)

Family Support Scale

INSTRUCTIONS: Listed below are people and groups that oftentimes are helpful to members of a family raising a young child. This questionnaire asks you to indicate which of the people or groups are available to you and which ones you used as a source of support in the last 3 to 6 months. If the person or group was not available in the last 3 to 6 months, please circle "NA" for “Not Available”. If the person or group was available for you to use as a source of support but you do not use them in the last 3 to 6 months, circle “NU” for “Available but not Used”. If the person or group is available and you used them as a source of support in the last 3 to 6 months, circle “AU” for “Available and Used”.

| 1. My parents | NA | NU | AU |
| 2. My spouse or partner’s parents | NA | NU | AU |
| 3. My relatives/kin | NA | NU | AU |
| 4. My spouse or partner’s relatives/kin | NA | NU | AU |
| 5. Spouse or partner | NA | NU | AU |
| 6. My friends | NA | NU | AU |
| 7. My spouse or partner’s friends | NA | NU | AU |
| 8. My own children | NA | NU | AU |
| 9. Other parents | NA | NU | AU |
| 10. Co-workers | NA | NU | AU |
| 11. Parent groups | NA | NU | AU |
| 12. Social groups/clubs | NA | NU | AU |
| 13. Church members/minister | NA | NU | AU |
| 14. My family or child’s physician | NA | NU | AU |
| 15. Early childhood intervention program | NA | NU | AU |
| 16. School/day-care center | NA | NU | AU |
| 17. Professional helpers (social workers, therapists, teachers, etc.) | NA | NU | AU |
| 18. Professional agencies (public health, social services, mental health, etc.) | NA | NU | AU |

Appendix E: Parent Perception of Child Functioning Scale (PPCFS)

Parent Perception of Child Functioning Scale
by: Berney J Wilkinson

The purpose of this scale is to assess your perception of your child’s development and health. Please read each of the items listed below and circle ‘1’ if you “Strongly Agree,” circle ‘2’ if you “Somewhat Agree,” circle ‘3’ if you “Somewhat Disagree,” or circle ‘4’ if you “Strongly Disagree.”

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Agree</th>
<th>Somewhat Agree</th>
<th>Somewhat Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>My child talks as much as other children his/her age.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>My child interacts with adults as much as other children his/her age interact with adults.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>My child interacts with other children as much as other children his/her age.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>My child plays with the same toys that other children his/her age play with.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>My child can roll/crawl/walk as well as other children his/her age.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>My child acts like other children his/her age.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>If someone were to guess my child’s age based on his/her skills, they would probably be able to guess correctly.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>My child follows directions as well as other children his/her age.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>My child is able to do most things that other children his/her age can do.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>My child has been healthy since birth.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>My child gets sick as often as other children his/her age.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>My child sees his/her pediatrician about as often as other children his/her age.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>My child has been hospitalized as often as other children his/her age.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>My child takes as much medication as other children his/her age.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Appendix F: Script

To be read to parents

We are currently conducting a study here at the EIP clinic. The overall purpose of the study is to learn more about you and your family. What we would like to do is have a better understanding of your needs, concerns, and challenges so that we can better design and recommend interventions if you and your child need them. If you would like to participate, we are asking you to complete a few questionnaires. Each questionnaire is relatively short and should take you just a few minutes to complete. The questionnaires will ask you various questions about yourself, your child, and your family.

If you think that you would like to participate, there is an informed consent form that you should read that will provide you with more information about the study. If you decide to participate, which we hope you will, you will be asked to sign the informed consent form and I will then give to you the questionnaires to complete. If, while completing the questionnaires, you have any questions, I would be happy to answer them. If I cannot answer all of your questions, we can call the primary researcher and he should be able to answer all of your questions.

Would you be interested in participating in this study?

NO – Well thanks for listening, if you change your mind, please let me know and I will give you the informed consent and the questionnaires.

YES – Great! Here is more information about the study. Please read through it and let me know if you have any questions. If you do not have any questions, I will give to you the questionnaires.

After the participant completes the questionnaires, ask:

Do you have any concerns or questions based upon your completion of these questionnaires?

NO – Thanks and we appreciate your volunteering to participate in this study.

YES – Follow procedures outlined by your department.
Appendix G: Computer Database

<table>
<thead>
<tr>
<th>Parent Demographics</th>
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About the Author

Berney J Wilkinson received a Bachelor’s Degree in Psychology from the University of South Florida in 1998 and a M.A. in School Psychology from the University of South Florida in 2000. Following his internship through the Polk County public school system and the Department of Pediatrics at the University of South Florida, Mr. Wilkinson received his Ed.S. in School Psychology in 2003 and was accepted as a doctoral candidate at the University of South Florida.

While completing the requirements for his Ph.D., Mr. Wilkinson was hired as a faculty member in the Silver Child Development Center at the University of South Florida, College of Medicine, Department of Psychiatry and Behavioral Medicine. There he has served as a clinician and researcher, working with children and families. He has published several papers, was awarded a new researcher grant, and has been invited to present at national conferences throughout the United States.