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**A COMPARISON OF PARENTAL SELF-EFFICACY, PARENTING SATISFACTION, AND
OTHER FACTORS BETWEEN SINGLE MOTHERS WITH AND WITHOUT CHILDREN
WITH DEVELOPMENTAL DISABILITIES**

by

RAYMOND PHILLIP SMALL

DISSERTATION

Submitted to the Graduate School

of Wayne State University,

Detroit, Michigan

in partial fulfillment of the requirements

for the degree of

DOCTOR OF PHILOSOPHY

2010

MAJOR: EDUCATIONAL PSYCHOLOGY

Approved by:

Advisor

Date

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DEDICATION

I would like to dedicate this work to Jesus Christ, my steadfast guide, savior, and companion who forgives me all my faults and relentlessly deems me worthy of consideration for eternal salvation. Thank you for your sacrifice, love, and guidance...

I would also like to dedicate this dissertation to my wonderful wife, Amy, and our beautiful darlings, Emma and Madelyn. You make life worth living and inspire me to be a better man...

And to my dear friend, Keith Kasia. I made it, my friend, and I know somewhere you are looking down smiling ... Let's celebrate with a cigar and a drive. Grandpa Czabot, I finally did it, you yard bird! I miss you and look forward to seeing you again when my time comes....

C. G. Jung, Sigmund Freud, and Sabina Spielrein. May all the theoretical and personal differences you had here on earth be forgiven on the other side, and may your spirits continue to counsel me on those difficult cases...

The only way to succinctly (and accurately) describe my experiences of this doctoral dissertation is to borrow a scene from Alice in Wonderland:

Alice: "Would you tell me, please, which way I ought to walk from here?"

Cheshire Cat: "That depends a good deal on where you want to get to."

Alice: "I don't much care where--"

Cheshire Cat: "Then it doesn't matter which way you walk."

Alice: "- so long as I get *somewhere*."

Cheshire Cat: "Oh, you're sure to do that, if you only walk long enough."

My dear family, friends, and colleagues, I've arrived, and I'm ready for my next adventure...

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CHAPTER 1

INTRODUCTION

Patience, consistency, warmth, firmness, and individualized attention are some of the positive features that are often mentioned as requisites to parenting. However, these attributes are not always easily attained because parents often have numerous roles and demands that they have to fulfill in any given day. Many parents must work, take care of domestic responsibilities and other family obligations, as well as finding quality time to spend with their children. These demands can be compounded when there is financial strain, marital discord, a single parent, or perhaps a debilitating ailment to a member of the family. Caring for offspring with a developmental disability is particularly stressful because the level of care is often more intensive and difficult than caring for someone who is developing along a “normal” trajectory. Parents of children with disabilities often experience higher levels of stress and less subjective well-being than parents of normally developing offspring (Cummins, 2001), despite the fact that most of these families appear to be receiving at least some sort of services at school and perhaps elsewhere in the community to help address their needs. There are economic, emotional, social, physical, and psychological ramifications to having a child with a developmental disability.

Developmental disability is a descriptor that covers a broad range of cognitive, physical, and adaptive deficits with which an individual is diagnosed prior to 22 years of age. It can include, but is certainly not limited to, such diagnosable conditions as cerebral palsy, mental retardation, autism, Down’s syndrome, muscular dystrophy, and fetal alcohol syndrome. Typically a person diagnosed with a developmental disability has to have substantial functional limitations within three domains among a group that includes expressive/receptive language, self-care, self-direction, learning, economic self-sufficiency, mobility, and capacity for independent living. The current number of people in the United States considered

developmentally disabled is approximately 4.5 million, according to the Administration on Developmental Disabilities (2005).

The variegated nature and severity of developmental disabilities result in quite a heterogeneous group of individuals who can impact the lives of their families in numerous ways. There appears to be a wide range of emotional, physical, and psychological responses that occur for parents caring for children with disabilities (Glidden, Kiphart, Willoughby & Bush, 1993). Parents of these children are often overwhelmed and feel hopeless when faced with the prospect of life-long care that their child will most likely need and realizing that there is no “cure” for their child’s condition. These parents are particularly at risk for physiological symptoms because of the chronic nature of the stressor (their child’s disability) and findings that indicate the longer one is subjected to stressful conditions the greater the chance he or she will experience a decline in health (Wilkinson & Marmot, 2003).

Raising and caring for children has historically been primarily a woman’s responsibility (Gottlieb, 1997), a universal phenomenon across cultures. Parenting a child that is developmentally disabled as a single mother likely does not make the stress any easier to withstand. Single mothers of such children usually must keep pace with domestic tasks, obtain an income, sacrifice much of their social life, and care for any other children in the home, often without any significant assistance from the biological fathers. Single mothers of children with disabilities perceive significantly less assistance coming from the biological fathers, the father’s parents, or any of his other relatives when compared to married mothers of children with disabilities (Marcenko & Meyers, 1991). Single mothers, even without children with disabilities, can be more at risk for depression and other psychological problems when compared with married mothers (Cairney, Thorpe, Rietschlin & Avison, 1999; Peden, Rayens, Hall & Grant, 2005; Wang, 2004). Moreover, depression is a mental illness that has broad economic, social,

and personal consequences (Peden, Rayens, Hall & Grant, 2005). People afflicted with depression are more prone to perceive themselves as being in worse health compared to others and are frequently less able to perform as parents (Hays, Well, Sherbourne, Rogers & Spitzer, 1995). It is an illness that occurs twice as often in women as in men and is the most common form of mental illness among women (Stewart, Ricci, Chee, Hahn & Morganstein, 2003).

Mothers' depression during the first five years of their children's lives has been associated with increased risk of antisocial behavior in these children at age seven (Kim-Cohen, Moffit, Taylor, Pawlby & Avshalom, 1995). Additionally, some studies have found depression to be more common in mothers of children with developmental disabilities than mothers of nondisabled children (Olsson & Hwang, 2001). Maternal depressive symptoms have been linked to behavioral problems in children with developmental disabilities (Feldman, Hancock, Rielly, Minnes & Cairns, 2000; Abbeduto, Seltzer, Shattuck, Krauss, Orsmond & Murphy, 2004). However, there have been studies that report no difference in parental maladjustment or stress among parents of disabled children and parents of nondisabled children (Bristol, Gallagher, & Schopler, 1988; Dyson, 1991). Additional research is needed to more clearly determine the nature and strength of the relationships between parental maladjustment as evidenced by depression and stress levels and the potential factors such as parental self-efficacy and social support that may assist in adjustment when parenting a child with disabilities, particularly among single parents.

Cairney, Boyle, Offord, and Racine (2003) examined the effect of social support and stress on the relationship between depression and single mothers compared to married mothers. Results indicated that single mothers were more likely to have suffered a depressive episode within the last 12 months, have less perceived social support, report higher levels of chronic stress, and have less frequency of contact with family members and friends than married

mothers. The authors concluded that the association between single motherhood and depression can be considerably accounted for by examining differences in exposure to stress and social support. Additionally, poverty and chronic stress can further increase the risk for depression among single mothers, with the prevalence rate of depression being as high as 60 percent among these mothers (Hall, Gurley, Sachs, & Kryscio, 1991). Single, low-income mothers have been found to experience less social support, more psychological distress, and more difficulties in caring for their newborn children (Armstrong, Fraser, Dadds, & Morris, 1999). This is a particular problem in poor, dangerous neighborhoods, as the work by Ceballo and McLoyd (2002) demonstrates. They found that the relationship between emotional support and nurturing behavior of 262 single, low-income, African-American mothers in Flint, Michigan, was weakened as neighborhood conditions worsened based upon maternal ratings of the quality of the neighborhood and crime rates. This is certainly cause for concern as, according to the News Bureau of Labor Statistics (2007), there are currently more than 8 million single-mother families in the United States with children under 18 years of age.

Social support is a critical factor that nearly everyone requires to help cope with adversity, as well as maintain and promote mental health. Perceived social support has been found to act as a protective factor against mental health problems (e.g., Brissette, Scheier, & Carver, 2002). D'Asaro (1998) explored the "burn out" of parents as a result of stress due to caring for their child with disabilities. Obtaining emotional assistance through therapy, participating in physical fitness for physical and psychological release, getting help in the home, and allowing oneself to take a break were among the strategies recommended to help cope with stress for these parents. These strategies are pragmatic and likely helpful but nevertheless stressful environments and limited access to resources may make people more prone to

depression. This may pose a potential barrier to managing parental stressors (Taylor, Washington, Artinian, & Lichtenberg, 2007).

High stress levels among parents of children with disabilities can potentially have negative consequences for the child, the parent, and the family (Plant & Sanders, 2007). Elevated stress levels have been associated with coercive parent-child interactions (Bor, Sanders & Markie-Dadds, 2002) and increased risk of family maladjustment (Turnbull & Ruef, 1996). The work conducted by Oelofson and Richardson (2006) has indicated that parents of preschoolers that are developmentally disabled may be more stressed than parents of non-developmentally disabled preschoolers. Furthermore, high levels of parental stress have been correlated with low levels of parenting self-efficacy (Wells-Parker, Miller, & Topping, 1990).

However, strong parental-self efficacy has generally been found to translate into positive parenting behaviors (Coleman & Karraker, 2000). High parenting self-efficacy has been found to predict parental responsiveness to children's needs (Donovan, Leavitt & Walsh, 1997) and greater satisfaction with parenting (Coleman & Karraker, 2000). Bandura (1997) noted that people become personally interested and derive fulfillment from activities in which they feel efficacious, as well as experience self-satisfaction from pursuing these activities, even when the activities themselves are not inherently enjoyable.

Statement of the Problem

Previous research has provided a base of information on stress and depression among single and married mothers, as well as among parents of children with disabilities and nondisabled children. However, there are several shortcomings in the literature that warrant further examination and the present study has been designed to assist in providing information to address these deficiencies. Previous research has compared single mothers to married mothers on measures of stress and depression and there generally appears to be support for the idea that

single mothers are more depressed on average and have greater stress than married mothers. However, the literature is not quite as clear when comparing parents, most notably mothers, of children that are developmentally disabled to mothers of nondisabled children on these variables. There are some discrepant findings that warrant further inquiry to aid in more specifically discerning the nature of these relationships. Moreover, there are few studies that have examined single mothers of children with disabilities. A review of the literature was not able to locate any studies examining the relationships between stress, depression, parental self-efficacy, and parenting satisfaction combined in a single study that compared them between single mothers of children with disabilities and single mothers of nondisabled children.

Furthermore, one cannot immediately assume that single mothers of children with developmental disabilities will be more prone to stress, depression, lower parental self-efficacy, and lower parenting satisfaction than single mothers of nondisabled children based upon findings that single mothers are generally more prone to stress and depression than married mothers. Interestingly, Schilling, Kirkham, Snow, and Schinke (1986) found no significant differences on measures of stress, life satisfaction, or perceptions of their child when comparing single mothers of children with disabilities to married mothers of children with disabilities. It is therefore not a foregone conclusion that having a child with a developmental disability adds even more distress to single mothers. There are several reasons that make this assumption questionable. First of all, it may be entirely plausible that single mothers of children with disabilities experience greater social support than single mothers of non-disabled children because of their presumed involvement with extensive formal supports at clinics, in the community, and at school that may help buffer the demands and inconveniences of having a disabled child.

Secondly, numerous studies in the literature have not found differences between parents of children with a developmental disability and parents of children without a disability on

measures of stress and depression, thereby indicating a need for further research in this area to help account for these empirical discrepancies.

The third reason that warrants further inquiry into the question of whether or not having a child with a disability as a single mother is a source of additional adversity in comparison to single mothers of nondisabled children is the finding that some families have found that having a child that is developmentally disabled has provided a positive impact on the parents, siblings, and the extended family and also positive perceptions of the future (Taunt & Hastings, 2002).

Fourth and finally, there appears to be a relative scarcity of research literature pertaining to single mothers of children with developmental disabilities in general. A review of the existing literature did not yield a published study that explicitly compared single mothers of children without a disability to single mothers of children with a disability. The value of this study is that it will provide empirical evidence in an area that has not been explored scientifically, thereby providing research evidence in the place of conjecture and speculation.

The established literature base regarding parental stress and depression, social support, parental self-efficacy, and parenting satisfaction, which will be reviewed in more extensive detail in the next chapter, has demonstrated some of the serious potential ramifications between parental and child characteristics and their relations to parenting practices and child functioning. Previous work has warranted and highlighted the need for further research in these areas. This is particularly relevant when one considers the multifaceted stress that single mothers may experience. Though the present study will not examine child abuse or neglect, it is worth noting that children that are developmentally disabled are at significantly greater risk for maltreatment than the general population, often as a result of high maternal stress and low social support (Hibbard & Desch, 2007). Therefore the work that has been done in highlighting the relationships between parental self-efficacy and parenting practices should be especially

pertinent among single mothers, both with and without children with disabilities, as high parental self-efficacy is related to positive parenting practices (Coleman & Karraker, 2000). Additionally, high stress has been related to low parenting self-efficacy (Wells-Parker, Miller, & Topping, 1990).

Purpose of the Present Study

The aim of the present research was to obtain a better understanding of the relationships between social support, stress, depression, parental self-efficacy, and parenting satisfaction among single mothers both with and without children who are developmentally disabled. This study attempted to differentiate the two groups of mothers in relation to these variables. Additionally, the presence of a child with developmental disabilities was explored for moderating effects relative to stress and depression and parental self-efficacy, parenting satisfaction, and social support. Socioeconomic status, social support, number of children, age of the mother and the child, presence of a maternal history of receiving psychiatric services, diagnosis type of the disabled child, number of years of treatment for the disabled child, and mothers' overall perceived severity of the symptoms of their disabled child were also examined to determine how well they predicted the criterion variables, which consist of stress, depression, parental self-efficacy, and parenting satisfaction.

It was believed that this study would add meaningful information to the very scant literature base on single mothers of children that are disabled. Examining potential differences in the magnitude of stress and depressive symptoms between single mothers of disabled and nondisabled children is important because it will provide insight as to whether or not having a child with a disability provides additional measurable stressors in addition to single motherhood. Previous research has shown that depression is related to undesirable outcomes on individual, familial, and societal levels (Glidden & Schoolcraft, 2003). Mild depression has been shown to

cause significant limitations in physical, work, and social functioning (Singer, 2006), while major depression is typically more chronic and more severely impairs functioning (Kessler, Zhao, Blazer, & Swartz, 1997). Identifying correlates with depression and stress may help identify significant variables that may be contributing to, or helping to prevent, pathological symptomatology among these mothers.

The results of this study also contribute to the existing literature on depression and women in general. It has been established that women of child-bearing age are at risk for depression when compared to the general population (Kessler, 2003), and that depression may partially be the result of elevated stress in daily living (Singer, 2006). However, little is known about depression and stress among single mothers of healthy children when compared to those who have children that are developmentally disabled. Additionally, the present work also explored the relationship of raising a child that is disabled to parental self-efficacy and parental satisfaction and investigated if the diagnosis of the child is related to any of the primary variables. Identifying the relationships among these proposed variables should provide insight for interventions to help reduce, control, or alleviate the potential negative consequences of single motherhood and having a child with disabilities as well. The risk for abuse and neglect of the children of these mothers is significant, as it has been shown that people with disabilities are at a significantly greater risk for maltreatment than the general population (Hibbard & Desch, 2007).

Additionally, the results of this study will be useful in providing feedback to the service delivery system and related social policies for children with disabilities and their families. The existing social service system may need to more specifically target the problem of depression, stress, and parenting among this group. As stated previously, mothers of children who are developmentally disabled exhibit higher levels of stress and depressive symptoms than mothers

of children without disabilities. Singer (2006) has noted that cognitive-behavioral treatments with additional supporting services that bring parents of disabled children together as groups to mutually support each other, along with a facilitator teaching improved coping skills, reduce maternal distress, but are not widely available in the United States. The results of this research provide additional data to inform future treatment modalities for children with disabilities and their families.

Definitions

“Developmental disability”, according to Michigan mental health code MCL 330.1100 (20), means either of the following:

(a) If applied to an individual older than 5 years, a severe, chronic condition that meets all of the following requirements:

(i) Is attributable to a mental or physical impairment or a combination of mental and physical impairments.

(ii) Is manifested before the individual is 22 years old.

(iii) Is likely to continue indefinitely.

(iv) Results in substantial functional limitations in 3 or more of the following areas of major life activity:

(A) Self-care.

(B) Receptive and expressive language.

(C) Learning.

(D) Mobility.

(E) Self-direction.

(F) Capacity for independent living.

(G) Economic self-sufficiency.

(v) Reflects the individual's need for a combination and sequence of special, interdisciplinary, or generic care, treatment, or other services that are of lifelong or extended duration and are individually planned and coordinated.

(b) If applied to a minor from birth to age 5, a substantial developmental delay or a specific congenital or acquired condition with a high probability of resulting in developmental disability as defined in subdivision (a) if services are not provided.

The term “developmentally disabled” and “disabled” was used interchangeably.

“Stress” was defined by Cohen, Kamarck, and Mermelstein’s (1983) conception of perceived stress, which is “the degree to which situations in one’s life are appraised as stressful” (p. 385). They formulated the *Perceived Stress Scale*, the instrument used in this study that measured perceived stress, indicating how uncontrollable, unpredictable, and overloaded one finds his or her current life.

“Depression” is a term that was designated based upon the criteria for depression in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revised (DSM-IV TR; American Psychiatric Association, 2000) and with which the Beck Depression Inventory-II (Beck, Steer, & Brown, 1996), the instrument used in the present study to measure depression, is aligned.

The term “parental self-efficacy”, which is also referred to as “maternal self-efficacy”, was designated as mothers’ feelings of competence in their role as parents. Specifically, the definition of maternal self-efficacy utilized in the present study is consistent with Johnston and Mash’s (1989) conception based upon the Efficacy subscale of The Parenting Sense of Competence Scale (Gibaud-Wallston & Wandersman, 1978), which is referred to as an instrumental dimension of parental competence reflecting problem-solving ability, capability, and competence in the parental role.

“Social support” was defined as the perceived helpfulness of sources of informal and formal social support as utilized by the Family Support Scale by Dunst, Trivette, and Jenkins (1984). Sources of social support included kinship, spouse/partner, other informal supports such as friends and neighbors, and formalized supports in programs/organizations, and professional services.

CHAPTER 2

REVIEW OF THE LITERATURE

This chapter focuses on providing an overview of the extant literature between stress, depression, parental self-efficacy, parenting satisfaction, and social support among parents, particularly mothers, of children that are developmentally disabled. Various studies are reviewed to give the reader an idea of the types of research that have been conducted on the variables to be examined. This is followed by an outline of the research questions for the present study and the hypotheses related to these questions.

Parenting a Child with Disabilities and Stress

Overview

Parenting a child with disabilities can be particularly stressful, as the demands of caring for such a child are often chronic, daily, and indefinite. This can generate maladaptive behavioral patterns within members of a family, as elevated stress levels have been associated with coercive parent-child interactions (Bor, Sanders, & Markie-Dadds, 2002) and a general increase in the risk for family maladjustment (Turnbull & Ruef, 1996). Indeed, there can be potentially negative effects for the child, the parents, and the family (Plant & Sanders, 2007). The magnitude of this problem is not difficult to discern when one considers that there are over 4 million people in the United States that are developmentally disabled (The Administration on Developmental Disabilities, 2005).

Conflicting Findings in the Literature

A considerable portion of the extant literature on parenting and stress indicates that parents of children that are developmentally disabled are more stressed than parents of normally developing offspring (e.g., Bristol, Gallagher, & Schopler, 1988; Scott, Atkinson, Minton, & Bowman, 1997; Singer & Irvin, 1991). However, not all of the existing literature indicates that

this is necessarily the case. For example, Innocenti and Kwisun (1992) did not find any significant differences in “child-related” or “parent-related” stress as measured by the Parenting Stress Index (Abidin, 1990) between parents of developmentally disabled offspring versus parents of nondisabled offspring. Innocenti and Kwisun’s (1992) study included a sample of 725 parents of children with various cognitive and physical impairments. Seventy-six percent of the children in the control group were Caucasian compared to 77 percent of the disabled group. Both groups also had 77 percent of participants coming from homes where both parents were present, and comparisons were not made between two-parent and one-parent homes.

Among single parents of children with disabilities, Schilling, Kirkham, Snow, and Schinke (1986) did not find any significant difference in parental stress, life satisfaction, or perceptions of their child when compared to their married female counterparts, despite married women scoring significantly higher in household income and family prestige, and having significantly more children in the home to support. Upadhyay and Havalappanavar (2007) found similar results when comparing stress levels among widows and widowers who had children diagnosed with mental retardation versus two-parent families with such children. These are two of only a very few known studies that have examined single mothers of developmentally disabled children. However, Marcenko and Meyers (1991) found that single mothers of children with developmental disabilities perceive significantly less assistance coming from the biological fathers, the fathers’ parents, or any of his relatives when compared to married mothers of children with disabilities, which would seemingly indicate an elevated level of stress in the single mothers of these children.

Spaulding and Morgan (1986) also found no significant differences in stress levels of parents of children aged 5 to 15 years of age diagnosed with spina bifida when compared to matched control group children with no illnesses or disabilities. Furthermore, the researchers

found no difference between the two groups of parents in terms of measured marital adjustment, perception of child behavior, parenting attitude, child self-concept, and overall family functioning. Additional studies have reached similar conclusions which would indicate that families with children that are disabled do not experience greater stress than families with children that are not disabled (Bristol, Gallagher, & Schopler, 1988; Frey, Greenberg, & Fewell, 1989; Gowan, Johnson-Martin, Goldman, & Appelbaum, 1989; Harris & McHale, 1989).

Similarly, Dyson (1991) discovered that families may be resilient in adapting to the demands of raising a child that is disabled. Her study compared parents of children that are developmentally disabled to parents of children without disabilities in terms of stress and family functioning. The results indicated minimal differences in family functioning between the two groups despite the significantly elevated levels of stress reported by the parents of the child with disabilities.

Child Behavioral Problems and Parental Stress

When studies determine that the stress levels of parents of children that are developmentally disabled are elevated when compared to parents of nondisabled children, it is often the result of child behavioral problems as opposed to the overall severity of their children's disabilities (Hastings, 2002; Beck, Hastings, Daley, & Stevenson, 2004). Beck, Hastings, Daley, and Stevenson (2004) examined the relationships between maternal stress, child behavior problems, child prosocial behavior, and child adaptive skills among 74 children with intellectual disabilities. Some of the children were diagnosed as autistic (23), while others were diagnosed with Down's syndrome (26), and the remainder either did not have a diagnosis except for intellectual deficiency or some irrelevant diagnosis. Maternal distress was independently and positively predicted by children's behavioral problems, and the children's prosocial behavior was negatively related to maternal stress. Thus, it was not only the presence of child negative

behaviors that predicted maternal stress, but also the absence of prosocial behaviors. The level of adaptive behavior skill of the children was not predictive of maternal stress in either direction. Additionally, 61.3 percent of the mothers fell within the “clinical range” of stress and 42.7 percent fell within the “clinical range” of anxiety, while 12 percent fell within the “clinical range” of depression. The 61.3 percent of mothers of developmentally disabled children who fell into the “clinical range” of stress in the Beck, Hastings, Daley, and Stevenson (2004) study can be considered in contrast with the 84 percent of mothers who fell into the “clinical range” of stress in the Oelofsen and Richardson (2006) study as an example of the variability range in stress levels among mothers of developmentally disabled offspring, even when the same instrument is used to measure stress. Some of this variability is likely due to differences in the groups of children with developmental disabilities in these studies. For example, Beck, Hastings, Daley, and Stevenson (2004) recruited children through “special” schools and parent groups diagnosed with either autism or Down’s syndrome and/or intellectual deficiencies with an average age of 9.75, while Oelofsen and Richardson (2006) recruited preschoolers below the age of 5 with no specific diagnosis from pediatrician-referred child development centers.

Some studies of parents of children that are developmentally disabled indicate child behavioral problems are associated with maternal stress levels, regardless of the diagnosis of the child. Blacher and McIntyre (2006) compared Latino and Anglo mothers of young adults aged 16 to 26 years with intellectual disability to others afflicted with autism, Down syndrome, or cerebral palsy on measures of stress and depression. When child behavioral problems were accounted for, the diagnosis type of the child made no unique contribution to maternal stress or depression. However, children diagnosed with autism scored the highest in multiple behavioral problem areas and their mothers reported the least well-being. Mothers of offspring diagnosed with Down syndrome had the highest scores in maternal well-being and reported the fewest

behavioral problems in their children. However, it was not the diagnosis type per se that was related to the stress levels, but the presence of behavioral problems.

This study seems to indicate that caregivers of young disabled adults experience high levels of stress when there are behavioral problems present, regardless of the cultural group or diagnosis. However, there were cultural differences, as Latina mothers reported higher depression symptoms and lower morale than Anglo mothers, but also greater positive impact from their children. Additional studies support the idea that behavioral and emotional problems contribute more to maternal stress than diagnostic type, adaptive behavior capabilities, or severity of symptoms (Herring et al., 2006; Lecavalier, Leone, & Wiltz, 2006; Hastings et al., 2005).

Symptom Severity, Adaptive Behavior, Diagnoses, and Stress Types

However, some research indicates that both maladaptive behavior and adaptive behavior deficits (Tomanik, Harris, & Hawkins, 2004), as well as symptom severity (Konstantareas & Papageorgiou, 2006), significantly contribute to maternal stress. Other research has indicated that child behavioral problems and parental stress is bidirectional over time (Hastings, Daley, Burns, & Beck, 2006; Lecavalier, Leone, & Wiltz, 2006). It remains to be seen if the stress caused by having a child with a developmental disability is a significant and independent source of stress among single mothers when compared to single mothers with children that are not disabled.

Duis, Summers, and Summers (1997), however, found that the type of disability of the child was more predictive of stress than the severity of the disability itself. Additionally, they examined levels of overall stress, as well as child-related versus parent-related stress among two-parent families with children with no disabilities, single-parent families with children with no disabilities, and two-parent families of children diagnosed with Down's syndrome, hearing impairment, or developmental delay. Parents of children with developmental delay and those

who had children with hearing impairment, as well as single parents of nondisabled children, reported significantly more total stress as measured on the Parenting Stress Index (PSI; Abidin, 1983) than the two-parent nondisabled group. Mothers of children with hearing impairment reported greater total stress than mothers of children with Down's syndrome.

The groups with hearing impaired and developmentally delayed children, as well as single parents in the nondisabled group, reported greater child-related stress as measured by the PSI (Abidin, 1983) than the two-parent Down's syndrome and nondisabled group. These same groups also reported higher parent-related stress than the married parents of children with Down's syndrome. Parents of children with hearing impairment and single-parents of nondisabled children reported higher parent-related stress than the two-parent nondisabled group. Thus it appeared that the stress levels of the two-parent nondisabled group and the two-parent Down's syndrome group were generally more similar to each other and significantly lower than the single parents without disabled children and the two-parent groups of developmentally delayed and hearing impaired children.

The types (child-related versus parent-related) and proportions of stress were examined among the two-parent groups of children with disabilities and the single and two-parent groups of nondisabled children. The results of Duis, Summers, and Summers' (1997) study indicated that the parents of Down's syndrome and children with developmental delay reported significantly greater child-related stress than the single and married parents of nondisabled children. The single-parent group reported the greatest parent-related stress, which was higher than that of the parents of children with developmental delay and hearing impairment, and significantly more than that of the parents of children with Down's syndrome. Nevertheless, Duis, Summers, and Summers (1997) did not examine single parents of children that were developmentally disabled in their study, which would then have permitted comparisons between

child-related, parent-related, and total stress levels among single parents of children with different diagnoses as compared to single parents of nondisabled children, which was one of the intentions of the present study.

It is plausible that single mothers of children that are developmentally disabled have more child-related stress than single mothers of children without disabilities while having equivalent amounts of parent-related stress due to their shared single-parent status, which would equate to greater overall stress reported by single mothers of disabled children. Interestingly, two studies mentioned earlier (Schilling, Kirkham, Snow, & Schinke, 1986; Upadhyay & Havalappanavar, 2007) found no differences in stress levels between single parents of children with disabilities and married parents of such children. However, Duis, Summers, and Summers (1997) reported that married parents of children with disabilities reported greater child-related stress than both single and married parents of normally developing children. This contrasts with the findings of Innocenti and Kwisun (1992), who used the same instrument to measure stress and did not find any differences in child-related or parent-related stress between parents of developmentally disabled children and parents of nondisabled children. Moreover, their subjects were also remarkably similar, as Duis, Summers, and Summers (1997) examined children with Down's syndrome (cognitive impairment), hearing impairment, or developmental delay, while Innocenti and Kwisun examined children diagnosed with cognitive impairment, visual/hearing impairment, and developmental delays. Additionally, Duis, Summers, and Summers (1997) indicated that single parents of children with no reported problems and parents of children with developmental delay or hearing impairment reported greater overall stress than married parents of children without any reported problems. Clearly more research is needed in this area.

There is also the possibility that behavioral problems, a frequently-cited variable related to stress among parents, is confounded with a specific diagnostic type, usually autism. This has

been the case in several studies (Podolski & Nigg, 2001; Tomanik, Harris, & Hawkins, 2004). Pisula (2007) found that, among caregivers in Poland, twenty-five mothers of offspring aged 4 to 20 years old with autism were significantly more stressed on 7 of the 15 scales of the *Questionnaire on Resources and Stress* (QRS; Holroyd, 1987) when compared to twenty-five mothers of offspring with Down's syndrome. Forty-seven of the mothers were married and three were divorced. The *Difficult Personality Characteristics* subscale of the QRS, which refers to the child with a disability, was the subscale that most differentiated the two groups of mothers on their stress profiles. However, there are also identifiable demographic and personality factors that can discriminate groups of mothers of children that are developmentally disabled with the same diagnosis on measures of stress, such as age of the mother and the child (Macias, Saylor, Rowe, & Bell, 2004), level of expressed affection, and level of interest in other people (Duarte, Bordin, Yazigi, & Mooney, 2005), as well as social support (Fong, 1991) and self-efficacy (Hastings and Brown, 2002). The latter two variables will be explored in more detail later in this chapter.

Summary

The research cited thus far has indicated that some studies support the notion that parents of children with disabilities are more stressed than parents of nondisabled children, while others have indicated that the differences are not significant, or nonexistent. Additionally, some studies showing that parents of children with developmental disabilities are more stressed than parents of healthy children have supported the idea that child behavioral problems are the most salient culprit in parental stress, as opposed to other variables such as the child's symptom severity, adaptive deficits, or type of disability. However, other studies have found significant relationships between these variables and parental stress. As the Duis, Summers, and Summers (1997) study has indicated, there is also research that indicates that the type of diagnosis of the child, as well as the marital status of the parent(s), are relevant to stress levels, particularly when

stress is differentiated into more specific types, such as parent-related and child-related stress. Some studies also relate symptom severity to levels of parental stress. Therefore there are still significant areas of debate regarding this population that make this study worthwhile. In particular, the current study examined stress levels and child diagnostic types, as well as numerous other variables between single mothers of children with and without disabilities.

Depression

Overview

Depression affects 14 million people in the United States annually and occurs twice as often in women as in men and is the most common form of mental illness among women (Stewart, Ricci, Chee, Hahn, & Morganstein, 2003). There are emotional, economic, social, and personal consequences to depression that are broad in scope (Peden, Rayens, Hall, & Grant, 2005), as people afflicted with depression often perceive their health as being in worse condition than others and are frequently less able to fulfill parental obligations (Hays, Well, Sherbourne, Rogers, & Spitzer, 1995). There are emotional and psychological risks to children of depressed parents as well, because mothers who were depressed during the early years of their children's lives are more likely to have children who engage in antisocial behavior than mothers who were not depressed (Kim-Cohen, Moffit, Taylor, Pawlby, & Avshalom, 1995). Additionally, studies have shown that mothers who are depressed are usually less interactive and less nurturing with their children (Cummings & Davies, 1994) and also increase their child's risk for depression.

Theories of Depression

There are numerous theories of the etiology of depression that have been formulated over the last century, but this section will give a brief overview of a few of the more prominent theories that have found considerable empirical support. The first theory is Beck's Cognitive Theory of Depression (1967), which focuses on one's view of oneself in the form of three

interrelated aspects of cognitions. This “cognitive triad” for depressed individuals is composed of negative views of themselves, the world, and their future. Beck (1979) contends that depressed people typically engage in systematic errors in thinking that include overgeneralization, all-or-none thinking, arbitrary inference, and selective abstraction. The “negative self schema” of a depressed individual represents a personality characteristic that is stable and is generated and sustained by influencing the way stimuli in the environment is selected, encoded, categorized, and evaluated. These negative schemata develop from early negative experiences that become activated in the present when a person is exposed or confronted with a current stressor that is somehow related to an early negative experience for the depressed individual. Information is then interpreted and often distorted in such a way as to be congruent with the schemata.

Seligman’s (1967) Learned Helplessness Theory of Depression focuses upon an individual’s perception of control over the outcome of a situation. For depressed individuals, their perception of control is often one of helplessness in which they feel they have very little or no control over the outcome of a situation, even when opportunity for escape or avoidance is evident. Abramson, Seligman, and Teasdale (1978) indicated that learned helplessness finds its origins in the attributional style of an individual which is usually formulated in early childhood experiences. Individuals with a “depressogenic” attributional style have learned that early experiences in their lives were uncontrollable and that future events will also be outside the realm of their control. Depression is therefore precipitated by a negative event that triggers feelings of uncontrollability about future negative events. Those who are prone to depression tend to attribute negative outcomes to factors that are internal, global, and stable. These factors can be dichotomized into internal versus external circumstances, global versus specific, and stable versus unstable. Therefore, depressed individuals often adopt a “worst-case” mentality,

attributing their faults to something internal (i.e. something is wrong with them, not something that happened *to* them), global (everything about the person is bad, not one particular thing that needs to be improved), and permanent (stable) as opposed to transient (unstable) (Abramson, Seligman, & Teasdale, 1978). Furthermore, depressed individuals are often thought adopt the opposite mindset with positive outcomes, believing the contributing factors to be external, specific, and unstable (Sweeney, Anderson, & Bailey, 1986).

Lewinsohn (1974) took a more of a strictly behavioral approach to describing the etiology of depression, focusing upon a lack of response-contingent positive reinforcement from the environment with resulting dysphoria and reductions in behavior which result in depression. An individual that is prone to depression may experience low rates in positive reinforcement as a result of a deficit of potential reinforcers in the environment, deficiencies in the individual's behavioral repertoire that prevent the procurement of positive reinforcers, and changes in the individual's responsiveness to negative and/or positive events. Therefore, depressed individuals may have deficiencies in social skills that prevent them from receiving positive reinforcement from their social environment, which may lead to difficulty initiating or maintaining the behavior necessary to seek positive reinforcement. This can ultimately lead to them becoming inactive and dysphoric, and subsequently depressed (Lewinsohn, Youngren, and Grosscup, 1979).

Depression and Single Mothers

The risk and severity of depression can be elevated when women are single mothers. Cairney, Boyle, Offord, and Racine (2003) examined depression and stress among single versus married mothers and found that single mothers were more likely to have suffered a depressive episode during the previous 12-month period, have higher levels of chronic stress, and have lower perceived social support. Their results indicated that 40 percent of the relationship between single parent status and depression could be accounted for by stress and social support.

There have been studies that have shown that depression is three times more prevalent among single mothers than the general population and nearly three times the rate of married mothers (Targosz, et al., 2003). Similarly, Cairney, Thorpe, Rietschlin, and Avison (1997) found that single mothers were more than twice as likely as married mothers to have suffered an episode of major depression in the previous year, with reported rates occurring at 15.4 versus 6.8 percent, respectively. However, other studies have shown that the rates of depressive episodes between married and single mothers are not that different. For instance, Lara-Cinisimo and Griffin (2007) found that, among single mothers, the rate of diagnosed depression was 19 percent among single mothers and 12 percent among married mothers, or an odds ratio of 1.54. Clearly depression is a highly relevant variable to be explored when examining single mothers, particularly when there are added demands, such as caring for a child that is disabled.

Parental Depression and Children with Disabilities

Some studies indicate that parents of children that are developmentally disabled are significantly more depressed than parents of children that are not (e.g., Kazak & Martin, 1984; Veisson, 1997). For instance, Olsson and Hwang (2001) assessed levels of depression among parents in 216 families with children who had autism and/or intellectual disability ranging in age from infancy to 16 years versus 214 control families with no children with disabilities. They found that mothers of children with both autism and intellectual disability had the highest depression scores, followed by mothers of children with intellectual disability alone, who then had significantly higher scores than the fathers of children diagnosed with autism and intellectual disability, fathers of intellectual disability without autism, and the control group mother and fathers. Olsson and Hwang (2001) also reported that 45 percent of the mothers of children with intellectual disability and 50 percent of mothers of children with both autism and intellectual disability had elevated depression scores, which was a score above 9 on the Beck Depression

Inventory (Beck & Steer, 1993), compared to a range of 15-21 percent among the rest of the groups.

Among mothers of children with cerebral palsy it was found that 30 percent of the mothers scored above the cutoff score for depression (Manuel, Naughton, Balkrishnan, Smith, & Koman, 2003) on the Center for Epidemiological Studies-Depression (CES-D) Short Form (Burnam, Wells, Leake, & Landsverk, 1988). However, the severity of the disability and the functional capabilities of the child did not predict maternal depression in this study, which contradicts other findings (e.g., Canning, Harris, & Kelleher, 1996). Rather, Manuel, Naughton, Balkrishnan, Smith, and Koman (2003) found that perceived emotional support of the mothers moderated the relationship between the functional status of the child and maternal depressive symptoms.

One of the more comprehensive studies that were conducted on depression among mothers of children with developmental disabilities was by Singer (2006). Singer (2006) conducted a meta-analysis of 18 studies from 1982 to 2003 that concluded that mothers of children that were developmentally disabled were at greater risk for depression than mothers of children that were not disabled. Singer (2006) limited his meta-analysis to studies involving children with developmental disabilities associated with mental retardation or a combination of cognitive and physical impairments.

The studies that Singer included featured a variety of socio-economic levels ranging from middle-class to below poverty-level. Half of the studies did not indicate the race of the mothers. The vast majority of the mothers utilized in each of these studies was married and predominantly Caucasian, ranging from 97 percent (Barakat & Linney, 1992) down to 69.70 percent (Witt, Riley, & Coiro, 2003) of the sample size. The study by Blacher, Lopez, Shapiro, and Fusco (1997) was an exception, as they utilized a sample of Latina immigrants of low socioeconomic

status for both groups. There were 148 mothers of children with mental retardation and 101 mothers of children without mental retardation. The diagnosis of all of the children with disabilities was mental retardation and 88.5 percent of the mothers who participated were married. These authors looked at the percentage of women above and below the assigned cut-off scores for depression on their instrument. Their results showed that 50 percent of the mothers of children that were developmentally disabled were above the cut-off score compared to 30 percent of the mothers of children that were not disabled. Singer's (2006) overall meta-analysis revealed that 29 percent of mothers of children with developmental disabilities experienced significant levels of depression, compared to 19 percent of mothers of nondisabled children. Feldman et al. (2007) found that, among mothers of children who were disabled or were at risk of being disabled, 20 percent of them scored above the clinical cut-off score for depression.

However, numerous studies have found no differences in levels of depression between mothers of children with disabilities versus mothers of children without disabilities (e.g. Andersson, 1993; Barakat & Linney, 1992; Bristol, Gallagher, & Schopler, 1988; Seltzer, Greenberg, Floyd, Pettee, & Hong, 2001). Gowen, Johnson-Martin, Goldman, and Appelbaum (1989) examined maternal depression and feelings of parental competence among mothers of handicapped infants, as well as child characteristics and the mother's social support system, and compared these relationships to those of mothers of nondisabled infants. There were 41 infants, 21 handicapped and 20 non-handicapped, and they were assessed across time at 11, 15, 19, and 27 months of age. The disabled group of children had various diagnoses, ranging from Down's syndrome, cerebral palsy, spina bifida, brain damage due to anoxia, tuberous sclerosis, and developmental delay due to prematurity. Thus all of the children were handicapped due to diagnoses that would be considered medical, though it is likely that all or the vast majority also suffered from some level of cognitive impairment as well. The mothers in both groups were

fairly homogenous, as the average age among the mothers of children that were disabled was 31.15 years versus 30.16 years for the mothers of the children with no disabilities. Twenty of the 21 mothers were married and 19 of those were Caucasian, compared to 19 of 20 of the mothers of the nondisabled children, 18 of whom were Caucasian.

Gowen, Johnson-Martin, Goldman, and Appelbaum (1989) found that although the two groups of infants differed significantly in their level of functioning and the difficulty of caregiving involved, the two groups of mothers had no significant differences in depression scores or feelings of parental competence, which remained fairly constant over time. However, the mothers in the handicapped group reported more use of social support and formal supports, and all but one were married and all but two had some education beyond high school. The authors speculated that the presence of a supportive spouse or family member can help offset a mother's self-doubt, increase her sense of self-worth, and challenge negative self-attributions involving the difficult characteristics of the child that is disabled. Maternal depression was predicted by caregiving difficulty, and feelings of parenting competence were predicted by the quality of family relations of the mothers of children that are developmentally disabled. For mothers of children that are not developmentally disabled, depression and feelings of parenting competence were predicted by the quality of family relations and child irritability. There is not a definitive answer yet as to whether single mothers of children with disabilities experience higher levels of depressive symptoms than single mothers of children without disabilities (Feldman et al., 2007).

Stress and Depression

Depression is the most common form of mental illness among women, and often recurrent. Hammen (2003) identified four key topics of the interpersonal context in which depression occurs for women. They were childrearing and parenting, romantic and marital

relationships, enduring social malfunction, and stressful life events. Women with depression, even when not symptomatic, tend to encounter highly stressful environments, particularly interpersonal ones. Negative interpersonal events can precipitate depressive episodes. Interestingly, these results have been replicated in children of women who are depressed (Adrian & Hammen, 1993), thereby implicating transgenerational causation of depression and stress.

There is a “risk and resilience” theoretical perspective that suggests there are people who are exposed to significant traumatic events and do not develop psychological or psychiatric complications such as depression, due to resilient adaptation (Grote, Bledsoe, Larkin, Lemay, & Brown, 2007). Perhaps exposure to multiple risk factors can have cumulative and adverse effects on psychological well-being. Protective factors can buffer the negative effects of risk exposure on stress and depression severity. For example, among adult, low-income African-American and Caucasian women exposed to a high number of acute and chronic stressors, optimism and perceived control protected against depression severity (Grote, Bledsoe, Larkin, Lemay, & Brown, 2007).

The relationship between chronic stress and depression was examined among mothers of children with disabilities who had diagnoses of cerebral palsy, cystic fibrosis, myelodysplasia, and multiple physical handicaps versus a geographically-based probability sample in the Cleveland, Ohio area (Breslau & Davis, 1986). The researchers found that the mother’s children that were developmentally disabled had significantly more depressive symptoms, but the rates of major depressive disorder were not significantly different. The depressed mothers in the “chronic stress” group reported an earlier age of onset of depression and more frequent depressive episodes than control subjects who were diagnostically comparable. However the two samples were not significantly different in the symptomatology of their worst depressive episodes. The authors concluded that there was no support for an etiological role for chronic stress in major

depressive disorder, but cautiously suggested the possibility that stress may play a role in precipitating depressive episodes.

This view has found support in the work of Post (1992), who posited that the first onset of depression is more likely to be preceded by a significantly stressful life event, such as the birth of a child with a disability, than are subsequent episodes of depression. This would imply that subsequent episodes of depression occur more autonomously over time, and that there is progressively less stress needed to elicit them. This may help to explain the studies that have found that mothers and parents of a child with a developmental disability experience more levels of stress and depression than parents of children that are not disabled. However, the relationship between stress and depression in parents of children with disabilities is not entirely clear, and few studies have compared these specific relationships in parents of children with developmental disabilities and parents of healthy children.

Kessler (1997), in his review of the research conducted on the relationship between stressful life events and depression, was uncertain whether or not stressful life events contribute to psychiatric disorders because of the methodological limitations that impair the ability to infer causality between stress and depression, for example. However, Kessler (1997) recognized relationships between stressful events and increases in depressive episodes and significant associations between chronic role-related stressors, such as work stress, overwhelming child care, marital discord, and chronically depressed mood (e.g., Pearlin, 1989). Nevertheless, other researchers believe that stress commonly provokes depressive episodes (Brown & Harris, 1989). One of the main goals of the current study was to demonstrate that single mothers of children that are disabled are significantly more stressed and subsequently exhibit significantly higher levels of depressive symptoms than single mothers of nondisabled children due to the extra stress that raising a child with disabilities engenders as opposed to a nondisabled child.

Summary

Depression is an illness that adversely affects millions of people annually and is much more common among women than men. The negative consequences of depression can harm parents and their children in various ways. Single mothers appear to be more at risk for depression than married mothers, and mothers of children that are developmentally disabled generally appear to be more at risk for depression than mothers of nondisabled children, though some research does not support this notion. Stress may play a role in increasing one's vulnerability to depression, which would certainly seem to apply to single mothers, particularly those with children that are disabled. However, there has been very little research conducted on single mothers of children that are developmentally disabled.

Social Support

Overview

Social support is a critical factor that nearly everyone requires to help cope with adversity, as well as maintain and promote mental health. Perceived social support has been found to act as a protective factor against mental health problems (e.g., Brissette, Scheier, & Carver, 2002). Social support has been found to be related to better psychological adjustment among mothers of children with and without disabilities, and maternal psychological adjustment, in turn, has been positively related to child psychological adjustment (Barakat & Linney, 1992). Single, low-income mothers have been found to experience less social support, more psychological distress, and more difficulties in caring for their newborn children (Armstrong, Fraser, Dadds, & Morris, 1999); however, there are studies that have reported high levels of social support and parenting satisfaction among this population as well (Woody & Woody, 2007). Nevertheless, there is accumulating evidence that single, inner-city mothers lack adequate social support for themselves as individuals or parents (Wilson, 1995). This can be a

particular problem in poor, dangerous neighborhoods, as the work by Ceballo and McLoyd (2002) demonstrates. They found that the relationship between emotional support and nurturing behavior of 262 single, low-income, African-American mothers in Flint, Michigan, was weakened as neighborhood conditions were worsened, based upon maternal ratings of the quality of the neighborhood and crime rates. Additionally, Marcenko and Meyers (1991) conducted a study that examined perceived support among single mothers of children that are developmentally disabled and found that the mothers perceived significantly less support coming from the biological father or any of his relatives when compared to married mothers of developmentally disabled children. This is a significant problem when one considers that approximately 18 percent of American families are female-headed households and that over half of them live below the poverty level (Keating-Lefler, Hudson, Campbell-Grossman, Fleck, & Westfall, 2004).

Social Support and Single Mothers

The importance of social support cannot be overemphasized, particularly among single mothers. Single mothers and psychological distress are often “linked by an unremitting succession of negative events, economic hardship, social isolation, and heavy parenting responsibilities” (Ceballo & McLoyd, 2007, p. 1310). Single mothers often have to single-handedly negotiate heavy parental responsibilities in addition to being socially isolated, more prone to distress, and less consistently involved in forming or maintaining social contacts. This seemingly indicates that single mothers are more at risk for having a lack of social support to assist them with the daily burden and responsibilities of raising a family. Single mothers are often more vulnerable to uncontrollable and threatening life events and typically have lower self esteem and higher depressive symptoms than married mothers (Demo & Acock, 1996). Mothers with higher levels of perceived social support tend to parent more consistently and be more

nurturing towards their children (McLoyd, 1990), as well as respond with greater sensitivity to their children. Among a sample of African-American mothers it was found that the size of the social networks of the mothers was positively related to parental warmth (Mason, Cauce, Gonzales, Hiraga, & Grove, 1994).

Mothers of children without disabilities that are financially disadvantaged rely upon social support to prevent against depression and parental incompetence. Silver, Heneghan, Bauman, and Stein (2006) examined perceived social support, depression, and parental sense of competence (which consists of parental self-efficacy and parental satisfaction submeasures) among unmarried, predominantly minority, inner-city mothers of nondisabled children aged 6 months to 3 years of age. They found that 22 percent of the mothers scored above the criterion for major depressive disorder, 15 percent experienced low parental competence, and 42 percent reported little or no social support. Interestingly, low parental sense of competence combined with high stress and low perceived social support were distinctly and significantly related to clinical levels of depression. Silver et al. (2006) observed that previously recognized mental health risk factors such as lower education, poverty, and unemployment can be less useful as indicators of increased susceptibility for psychological distress in inner-city regions because of the elevated rates of prevalence in such areas. Rather, they recommended that practitioners focus on parenting stress and social support as useful indicators for detecting mothers who are at high risk for psychological distress and depression. However, Woody and Woody (2007) found only a relationship of statistically “minimal” significance between social support and parental satisfaction and perceived parental success. Nevertheless, the presence of a child with a disability among mothers in similar settings and situations as those in the Silver et al. (2006) study may exacerbate such relationships.

Social Support and Parents of Children that are Disabled

Social support has been demonstrated to ameliorate the stress for parents of children with disabilities (Boyce, Behl, Mortenson, & Akers, 1991). Social support is critical for parents of children with developmental disabilities. Weiss (2002) conducted a study on the relationships between social support and hardiness, and also stress in the form of depression, anxiety, and burnout among mothers (the vast majority of whom had husbands) of children with autism and mental retardation, as well as mothers of nondisabled children between the ages of 2 and 7 years. There were 40 mothers in each group, the vast majority were married (97.5 percent), middle-class, Caucasian women ranging in age from 24 to 48 years. Weiss (2002) found that mothers of children with autism experienced more negative effects from stress than mothers of mentally retarded children, who experienced more negative effects than mothers of children without disabilities. Moderate depressive symptoms were generally found among mothers of children with autism, mild depressive symptoms were generally found among mothers of children with mental retardation, and no depressive symptoms were found among mothers of nondisabled children. This pattern appeared to be consistent across all of the dependent measures.

Elements of social support were negatively related to depressive symptoms and positively related to parental efficacy as well. Mothers who expressed attitudes that were considered hardy also perceived social support as an available resource. Weiss (2002) indicated that perceived availability of support is more important in ameliorating stress than actually receiving support. These findings are consistent with those of Kazak and Marvin (1984) and Kazak and Wilcox (1984), who found that multiple sources of perceived support can bolster the sense of efficacy and coping needed to meet the demands of stressful circumstances. Weiss (2002) noted that a limitation to this study is the use of predominantly intact families of middle-class status, and

indicated that the stress variables utilized would likely be higher among single parent families and those with lower socioeconomic status.

Bristol (1984) conducted a series of studies on mothers of children with autism and found that mothers who experienced the least amounts of stress were those who were receiving the greatest amount of support, particularly from their spouses and relatives. Indeed, the support given by partners can buffer against the stress of raising a child with a disability (Kazak & Marvin, 1984). However, the challenges of raising a child that is developmentally disabled are often greater for single mothers (Armstrong, Fraser, Dadds, & Morris, 1999; Marcenko & Meyers, 1991). Bromley, Hare, Davison, and Emerson (1994) found that single mothers of children with autism reported less family support, formal support, and total support than mothers who were living with a partner.

Even mothers of children with non-psychiatric disabilities may rely on social support. Manuel, Naughton, Balkrishnan, Smith, and Koman (2003) examined the disability severity and functional status of children with cerebral palsy and the relationships they had with social support, depression, and appraisal of their child's illness among mothers. Maternal depression was not predicted by the severity of the child's disability or functional status, but social support moderated the relationship between the functional status of the child and maternal depression. Few studies have examined the moderating effects of social support on children's level of functioning and maternal depression (Manuel, et al., 2003). Social support in this study was not only informal, such as family and friends, but also formal. This is evidenced by the fact that the parents of children with cerebral palsy were recruited through an orthopedic clinic and were assisted by orthopedic surgeons and physical therapists, who completed the functional status and disability severity assessments for the study. It is important to consider formal sources of social support in studies of people with developmental disabilities and other populations when

assessing social support, as research participants are often recruited through facilities that are providing services. The present study considered both informal and formal sources of social support.

Skok, Harvey, and Reddinough (2006) also examined mothers (of whom 77 percent were living with a partner) of children aged 5 to 12 years with cerebral palsy, for the effects of perceived stress, perceived social support, and severity of the child's disability on maternal psychological well-being. Child disability severity, which was based solely on physical criteria and not behavior or intellectual ability, was not related to maternal well-being, but perceived social support was significantly related to maternal well-being, as was perceived stress in a negative direction. Perceived stress and social support also accounted for 55 percent of the variance in maternal well-being. These results are similar to those of Wallander et al. (1989), who found that family support, availability of a larger social network, and marital satisfaction predicted 57 to 68 percent of the variance of mental and social functioning of mothers of children with cerebral palsy or spina bifida. Other studies have indicated a negative relationship between social support and maternal distress among mothers of children with chronic physical conditions (Horton & Wallander, 2002). However, some studies have shown no effects for social support on posttraumatic stress disorder symptoms among parents of children who are ill or disabled (Pelcovitz et al., 1996; Best, Streisand, Catania, & Kazak, 2001). Additionally, among mothers of children diagnosed with cancer, social support had a negligible effect on maternal psychological functioning or level of distress experienced over a 5 year period (Wijnberg-Williams, Kamps, Klip, and Hoekstra-Weebers, 2006).

The distinction between formal and informal supports is made in most studies, with informal support consisting of family, friends, and spouses, for example, while formal support would consist of professional support services usually provided in a hospital or clinic, or at

school. Duvdevany and Abboud (2003) examined the stress and well-being levels among mothers of children with intellectual disability and the use of welfare (formal) services and informal services. Mothers who reported higher informal support had lower marital and economic stress and a greater sense of well-being. Formal support was not significantly related to stress levels among these mothers. However, the mothers who frequently used formal supports had significantly higher parental and marital stress than mothers who rarely ask for help, but no significant differences were found between the groups in well-being. The authors concluded by commenting on the importance of informal supports when raising a child with a disability and its moderating role in reducing stress and increasing maternal well-being, which is partly due to cultural expectations and ineffective social service policy.

Evidence for the importance of informal supports has been found elsewhere, particularly for single mothers (Bromley, Hare, Davison, & Emerson, 2004). Some mothers prefer informal support over formal support (Soya, 1997). Other work has focused on the use of both formal and informal supports by parents of children with disabilities according to child diagnostic type and has dichotomized the services into “parent-centered” and “child-centered” (Siklos & Kerns, 2006). The authors compared children afflicted with autism to those with Down syndrome and found that the families did not differ on the amount of important needs they had or the number of needs getting adequately served. However, Siklos and Kerns (2006) did discover that the *types* of support needed differed significantly between the groups, as parents of children with autism reported a greater number of child-centered needs when compared to parents of children with Down’s syndrome. No significant differences were found on scores of parent-centered needs, and the majority of the participants in each group were members of two-parent homes.

There are two theoretical explanations that attempt to explain how social support is helpful in coping with stress. The first is the “buffering” model (Cohen & Wills, 1985), in which

social support is seen as a protective factor against stressful events which intervenes between the stressful event and a stress reaction by preventing or reducing the stress appraisal response. The stress may also be alleviated by social support through reducing the severity or importance of the problem, reappraisal, or providing a solution. The “main effects” model (Berkman, 1984) proposes that, irrespective of the particular situation or level of stress, social support will have a beneficial effect for an individual by satiating basic intimacy needs, fostering a sense of acceptance and reinforcement of one’s worth. Both models have found empirical support and they are reportedly complementary as opposed to competitive theories because of the direct and indirect effects of social support on stress (Skok, Harvey, & Reddihough, 2006).

Summary

The majority of the research conducted has shown that social support can be a critical factor in the adaptation of people to various types of stressors. Social support has been shown to have numerous benefits, such as maintaining and promoting mental health and increasing the psychological adjustment of parents and, in turn, their children. Certain groups, such as single, low-income mothers, appear to be particularly vulnerable to less social support than comparison groups. This may be particularly pronounced in single mothers of children that are developmentally disabled, who often appear to be more stressed and show more depressive symptoms than married mothers of children with and without disabilities. Informal supports such as friends and family are paramount for social support. The buffering model and main effects model of coping with stress appear to be complementary and have empirical support.

Parental Self Efficacy

Overview

Parental self-efficacy (PSE) is presumed to be a specific area within the more general constructs associated with personal efficacy (Bandura, 1997; Jones & Prinz, 2005). Bandura

(1997) has linked personal efficacy, the belief that a person's actions will produce the desired outcomes, with human agency, intentional acts reflective of a person's perception that they are exerting an influence over what they do. PSE has been defined as parental beliefs in his or her abilities to influence his or her child and the environment in ways that will promote the child's success and development (Ardelt & Eccles, 2001). However, the term "parental self efficacy", or parental self-competence, appears to have several meanings in the literature. There have been studies (e.g., Jackson, 2000) that have examined the concept of a vague, generalized form of self-efficacy among mothers and called it "domain-general" PSE. In other words, self efficacy was not assessed with specific reference to parental ability, but was used as a measure of mothers' perceptions of their general competency across all life domains. If such a study were conducted among singers, for example, it would be akin to simply labeling the construct "singer self-efficacy" because the measure was being used on singers.

However, there have been more studies that have applied the term "domain-specific" PSE to parents' feelings of competence in their role specifically as parents (e.g., Raver & Leadbeater, 1999; Cinamon, Weisel, & Tzuk, 2007), which is more consistent with the definition of "maternal self-efficacy" that was utilized in the present study. Specifically, the definition of maternal self-efficacy used in the present study is consistent with Johnston and Mash's (1989) conception, by which self-efficacy is referred to as an instrumental dimension reflecting problem-solving ability, capability, and competence in the parental role. Similarly, domain-specific PSE has been defined as parents' "self-referent estimations of competence in the parental role" or "parents' perceived ability to positively influence the behavior and development of their children" (Coleman & Karraker, 2003, p. 128).

Other researchers have used both of the PSE definitions mentioned above while differentiating a third distinct construct of PSE called "task-specific" (Jones & Prinz, 2005). This

third component focuses on parents' perceptions of their competence at specific tasks within parenting, such as feeding their child or putting him or her to bed. Nevertheless, PSE has been convincingly found to be related to actual parental competence and, to a somewhat lesser degree, parental psychological functioning (Jones & Prinz, 2005).

There have been numerous studies highlighting the positive attributes of PSE. High levels of parental stress have been correlated with low levels of PSE (Wells-Parker, Miller & Topping, 1990), but low PSE may not be a necessary prerequisite of insufficient parenting. Strong parental self-efficacy has generally been found to translate into positive parenting behaviors (Coleman & Karraker, 2000). High parenting self-efficacy has been found to predict parental responsiveness to children's needs (Donovan, Leavitt & Walsh, 1997) and greater satisfaction with parenting (Coleman & Karraker, 2000). Bandura (1997) noted that people become personally interested in and derive fulfillment from activities in which they feel efficacious, as well as experience self-satisfaction from pursuing these activities, even when the activities themselves are not inherently enjoyable.

High PSE has been linked to positive and competent parenting practices, behaviors, and strategies (Coleman & Karraker, 1998). PSE has been positively associated to positive parenting practices and negatively associated to maladaptive parenting practices (Hill & Bush, 2001), and parental social support and PSE have been predictive of parental warmth and control (Izzo, Weiss, Shanahan, & Rodriguez-Brown, 2000). Elder, Eccles, Ardel, and Lord (1995) found that PSE was an indicator of how much parents in a large African-American sample engaged in promotive and preventive strategies with their children. Promotive strategies were efforts to create positive child experiences and helping their child develop skills and interests, while preventive strategies were focused upon reducing risk and adverse outcomes for their children.

Parents with low PSE have been found to report engagement in more severe aversive parenting techniques and have children with more behavior problems.

Importance of PSE

Parental self-efficacy, as is obvious from the research indicated above, is an important theoretical construct that warrants empirical investigation due to the potential positive implications for the health of parents and their children. However, there are also negative implications for parents and their children when parents have deficiencies in PSE, as low PSE has been found to be related to parental depression (Teti & Gelfand, 1991), child behavioral problems (Gibaud-Wallston & Wandersman, 1978, cited in Johnston & Mash, 1989), high parental stress (Wells-Parker, Miller, & Topping, 1990), and controlling and defensive parental behaviors (Donovan, Leavitt, & Walsh, 1990), as well as parental focusing on relationship difficulties, elevated autonomic arousal, feelings of helplessness as a parent, negative affect, and punitive disciplinary methods (Bugental & Cortez, 1988). Parents lacking self-efficacy in their ability to parent often have difficulty applying parental knowledge to parenting practice, lack persistence in parenting, experience elevated emotional arousal, and become preoccupied with themselves as opposed to focusing on the needs of their children (Grusec, Hastings, & Mammone, 1994). Although the direction of causality has not been firmly established up to this point between PSE and behavioral, social, and emotional factors, there is evidence of strong correlational relationships among many of the factors being investigated. However, there are a few exceptions.

Null Findings

There have been some studies that have not found a relationship between PSE and parenting. However, all of these studies only included families with young children and relied on observation as a main source of measurement (Jones & Prinz, 2005), as opposed to strict reliance

on standardized instruments. Coleman and Karraker (2003) did not find a significant relation between parental competence and a task-related or general measure of PSE, and Corapci and Wachs (2002) also found no support for a relationship between PSE and parenting behavior or parenting practices (Brody, Flor, & Gibson, 1999). Additionally, Bohlin and Hagekull (1987) found that the relationship between PSE and maternal intrusive parenting was not statistically significant. Sanders and Woolley (2005) did not find any significant differences in PSE between parents of children diagnosed with conduct disorder and parents of nonclinical children, and parenting practices were also not predicted by PSE. However, the majority of the research on parental self-efficacy demonstrates its significant relationships to parenting practices and parental psychological functioning.

Parental Self Efficacy and Mothers

Parental self-efficacy, or PSE, appears to be a highly relevant construct that has considerable implications for parent-child relations, regardless of the direction of causality, which may certainly be multi-directional between related variables. Coleman and Karraker (2003) found that maternal PSE was positively related to less emotional and more sociable children, as well as mothers' experience with children other than their own. Socioeconomic status, education, and parental satisfaction were also positively related. It appears that the vast majority of the PSE research mentioned thus far has been with middle-class, Caucasian, married mothers. Nevertheless, there are exceptions.

Raver and Leadbeater (1999) examined PSE in relation to environmental risks and child temperament in a culturally diverse sample of 34 low-income mothers of nondisabled toddlers 2 year olds. Twenty-seven percent of the mothers were married and an additional 22 percent were living with a partner or engaged to be married. Fifty-four percent of the women were African-American, 23 percent were Caucasian, 9 percent were Latina, and the remaining 14 percent had

mixed racial heritage. However, comparisons were not made between cultural groups or between single versus married groups. Results indicated that self-efficacy was significantly and inversely related to difficult child temperament and environmental risks, such as high stress, low levels of social support, being a young parent, and not having a high school diploma, but not the level of observed conflict between mother and child. Mothers who had higher PSE had temperamentally easier children, though this was not a clear relationship when conflict was high. The authors suggested that varying levels of stressors and child temperament problems, and also dyadic conflict, succeeded in differentiating levels of PSE. Twenty-nine percent of the variance in PSE was explained by environmental risk, child temperament and dyadic conflict, as well as the interactions between conflict and risk and conflict and temperament. Being a single parent and having a child that is developmentally disabled may contribute more to the variance in PSE among mothers.

Another study of self-efficacy among a group of participants that were not the predominantly Caucasian group of subjects used in most studies was conducted by Jackson (2000). She examined general self-efficacy among a group of low-income, urban, single, African-American mothers of nondisabled preschoolers 3 to 4 years of age. Jackson (2000) examined general perceived self-efficacy, social support, child behavior, and maternal parenting, as she claimed that these potential relationships had heretofore not been examined among low-income, single, African-American mothers. She found that significant negative relationships existed between self-efficacy and parental stress and self-efficacy and child behavior problems. A positive relationship was found between self-efficacy and involved, supportive parenting. Parenting stress was most accounted for by child behavior problems. However, lower self-efficacy, being nonemployed, and having less social support were also significant. These variables accounted for 42 percent of the variance in parenting stress. Higher self-efficacy was

found to buffer the adverse effects of child behavior problems on quality of parenting as well. Jackson's (2000) results appear to support Bandura's (1997) contention that self-efficacy is created and fostered by mastery of challenging situations, such as being a single, low-income mother. Mothers with higher self-efficacy may have greater optimism in the face of difficult situations, such as having a child with behavioral problems, as general self-efficacy among mothers seems to moderate the relationship between children's and mother's behaviors.

Parental Self-Efficacy and Children with Disabilities

Parenting a child with a disability can be a challenging task, particularly if the child has a behavioral problem. Hastings and Brown (2002) examined PSE, anxiety, and depression levels among parents of children with autism with an average age of 12 years. The teachers of the children rated the behavioral problems of the children while the parents reported on their levels of PSE, depression, and anxiety. PSE acted as a mediator variable between child behavioral problems and maternal levels of depression and anxiety. PSE was identified as a compensatory factor reducing the impact that child behavior problems had on mothers' anxiety and depression levels. In a similar study among mothers of younger children with autism between 2.4 to 10.8 years of age, parenting stress, guilt, and depression were negatively correlated with PSE (Kuhn & Carter, 2006). Some mothers had a second child with a disability, which was found to lower PSE more than among mothers with only one disabled child.

In addition to autism, Asperger's syndrome has been examined in relation to parental self-efficacy. Sofronoff and Farbotko (2002) examined the effectiveness of a parent management training program aimed at treating behavior problems associated with Asperger's syndrome. Mothers and fathers of children diagnosed with Asperger's syndrome aged 6 to 12 years were exposed to one of three possible treatment conditions. In the first, a one-day workshop was conducted specifically designed for parents of children with Asperger's syndrome. In the

second group the exact same material was covered over a six week period on an individual basis. Both groups were given manuals that were used in the training and as a reference at home. A control group of parents received no intervention to assist them with their children diagnosed with Asperger's syndrome. Data were collected again four weeks after the intervention programs, and Sofronoff and Farbotko (2002) discovered that both treatment programs led to significant decreases in problem behaviors reported by mothers and a reported increase in parental self-efficacy in the management of the problem behaviors. Fathers showed no change in parental self-efficacy at any time point. The results held after 3 months, though the one-day workshop mothers showed a slight decrease in PSE as measured by the *Parental self-efficacy in the management of Asperger syndrome questionnaire* developed by the authors. The control group parents showed no change over time, though their levels of PSE dropped further during the study. This study further demonstrates the relationship between parental self-efficacy and the psychiatric problems of children.

Self-efficacy has also been examined among low-income, urban parents of children aged 5 to 8 years with various chronic illnesses, such as asthma, cleft lip and palate, congenital heart disease, sickle cell disease, cancer, epilepsy, spina bifida, endocrine disorders, and a small percentage of other congenital conditions (Silver, Bauman, & Ireys, 1995). The authors of this study examined whether general self-efficacy moderated the relationship between the functional status of the child and maternal psychological adjustment. They found that the functional status of the children, which was the mothers' perception of the extent to which the condition was limiting their child's age-appropriate social, cognitive, physical, and emotional behaviors, correlated significantly with mothers' distress. Additionally, mothers with greater self-esteem and generalized self-efficacy had less distress. Therefore, when the children had illness-related functional limitations and general maternal self-efficacy was low, mothers experienced greater

distress. The literature related to functional limitations of children and parental distress has generally been equivocal, but a significant relationship was demonstrated in the Silver, Bauman, and Ireys (1995) study, as well as the importance of efficacy in relation to maternal mental health when parenting a child with a developmental disability.

Summary

The research on PSE, or parental self-efficacy, has generally found it to be a meaningful construct, as it has been demonstrated to be related to positive parenting behaviors, parental depression and stress, and child behavioral problems, though with a few exceptions. Some studies have found no significant relation between PSE and parenting behavior, practices, or competence, or child behavioral problems. PSE has been defined in three different domains, and it is the “general” definition of PSE as defined by Coleman and Karraker (2003) that will be utilized for the purposes of the present study. The majority of research on PSE has been conducted on middle-class, Caucasian parents. There is a scant literature base on PSE and disabled children with physical and mental limitations that needs to be expanded.

Parental Satisfaction

The term “parental satisfaction” should be defined more specifically as “parenting satisfaction”, as it defines mothers’ feelings of satisfaction in their role as parents. This should be contrasted with the concept of parental satisfaction that includes parents’ satisfaction with anything outside their role as parents, much in the same way that parental self-efficacy for the purposes of this study refers to parental estimations of competence in the parental role as opposed to any other measure of the efficacy of parents outside of parenting. Parenting satisfaction has been defined by Johnston and Mash (1989) as an affective dimension of parental competence that reflects parenting frustration, motivation, and anxiety. This is consistent with the concept of parenting satisfaction used in the present study, as Johnston and Mash’s (1989)

instrument, *The Parenting Sense of Competence (PSOC) Scale*, will be utilized to measure parental satisfaction and parental self-efficacy. The following section explores the relation of parenting satisfaction to other variables used in the present study among various populations.

Parenting satisfaction was explored as a potential intervening variable for parental stress, along with parental self-efficacy, child characteristics, and family support, in a study conducted by Hassall, Rose, and McDonald (2005) on 46 mothers of children with “intellectual disability”, or cognitive impairment, aged 6 to 16 years old. The majority of the variance in parenting stress was explained by parental locus of control, followed by parenting satisfaction, which on its own accounted for 10 percent of the variance. Additionally, parenting satisfaction contributed to the variance in parenting stress independently of parental locus of control. Hassall, Rose, and McDonald (2005) used Johnston and Mash’s (1989) PSOC scale to measure parental self-efficacy and parental satisfaction. Interestingly, parental self-efficacy did not significantly contribute to the variance in parenting stress in this study. However, child behavioral problems were found to contribute significantly to stress variance among mothers. Similar results were found by Ohan, Leung, and Johnston (2000), who found negative correlations for parents on measures of parental satisfaction and their children’s internalizing and externalizing behavior problems.

Role satisfaction, or parenting satisfaction, has also been explored among parents of children with psychiatric diagnoses such as ADHD. Podolski and Nigg (2001) examined role satisfaction and coping skills among parents of children aged 7 to 11 years of age diagnosed with ADHD combined and inattentive subtypes compared to control group parents of children with no diagnoses. Parents of both ADHD groups expressed greater role dissatisfaction than control group parents, and there were no differences between the two groups of parents of ADHD children in role satisfaction levels. Role dissatisfaction for mothers was related significantly to

oppositional-conduct problems and child inattention separately, but not hyperactivity. For fathers, role dissatisfaction was not related to ADHD symptom severity, but to oppositional behaviors. Use of positive reframing for mothers and fathers was associated with higher levels of parenting satisfaction.

Parenting satisfaction has also been explored among parents of children with physically debilitating conditions, such as cerebral palsy. As has been previously noted, a child with a physical disability can impose demands on parents that include physical care, financial costs, finding appropriate care, feelings of worry, frustration, and helplessness, and loss of social contacts and leisure time. Wanamaker and Glenwick (1998) found that high levels of parenting satisfaction were positively related to high levels of social support satisfaction and that high levels of depression were related to low levels of parenting satisfaction and high levels of stress among mothers of children aged 3 to 6 years of age diagnosed with cerebral palsy.

Summary of Previous Research

The research cited above shows some general trends that pervade the literature, yet there are some ideas that have not been fully explored. Indeed, there are often contradictory findings in the research that call for more work to be done in these areas. Clearly, having a child with a developmental disability is often a source of stress that can challenge parents physically, emotionally, socially, and economically. Much research needs to be conducted on parents of developmentally disabled children, particularly mothers without a stable partner to assist them.

The research on stress and parenting has been inconsistent in showing mothers of children with disabilities to be more stressed than mothers of normally-developing children, though the majority of the research indicates that there is evidence to substantiate such a claim. Child behavioral problems are the most commonly cited culprit in parental stress among parents of children with disabilities, though diagnosis type has also been found to contribute to variance

in parental stress on occasion. Stress has also been differentiated into child-related and parent-related stress, as well as total stress, yet few studies make this distinction. Parents of children with autism generally appear to experience higher stress levels than parents of children with other disabilities.

Depression is quite commonly diagnosed, particularly among women. Maternal depression has potentially negative consequences for parents, children, and parent-child interactions. Single mothers have higher risk and prevalence than married mothers, yet there appears to be some discrepant findings about depression and parents of children that are developmentally disabled. Nevertheless, mothers of children with disabilities have more commonly been found to be more at risk and have higher rates of depression, and show more depressive symptomatology than mothers of children that are not disabled. However, there appears to be a paucity of research regarding single mothers of children with disabilities and no available research that makes direct comparisons between single mothers with and without these children. There has not been convincing empirical evidence for the etiological role of stress in depression as of yet, but some research has shown that significant stress does make one more vulnerable to subsequent episodes of depression. However, precise causality has not been demonstrated.

Social support can be an invaluable source of comfort that has multiple psychological and health benefits for parents and their children, with few exceptions. It seems that the perception of social support is more relevant than the quantifiable amount of support. Social support has generally been found to be of great value for single mothers, though unfortunately they often seem to have a lack of social support. Single mothers facing great adversity, such as those with a child that is disabled, may have very limited access to resources and be particularly dependent upon social supports in the form of friends and family in order to maintain a sense of comfort.

Social support appears to help by preventing or reducing stress appraisal responses and by fostering a sense of belonging and acceptance.

Research Questions and Hypotheses

The research review on parental self-efficacy has generally shown that parental self-efficacy, or PSE, is related to various positive parenting behaviors and psychological benefits for the parent and child. PSE is inversely related to parental stress, parental depression, and child behavior problems. However, there are exceptional studies that have found no evidence of relationships between PSE and parental practices and behavior, parental competence, or child behavioral problems. There is limited research on PSE and children that are developmentally disabled. More research is required to add to this deficient literature base. Parenting satisfaction is related to satisfaction with perceived social support, and negatively related to depression and stress among parents, as well as child behavior problems among various samples. Based upon the review of the literature, this study attempted to answer the following research questions:

1. Do single mothers who report higher levels of stress and depression also report lower levels of parental self-efficacy, parenting satisfaction, and social support?

H₁: Single mothers who report higher levels of stress and depression will report lower levels of parental self-efficacy, parenting satisfaction, and social support than single mothers who report lower levels of stress and depression.

H_{1a}: Single mothers who report higher levels of stress will report lower levels of parental self-efficacy than single mothers who report lower levels of stress.

H_{1b}: Single mothers who report higher levels of stress will report lower levels of parenting satisfaction than single mothers who report lower levels of stress.

H_{1c}: Single mothers who report higher levels of stress will report lower levels of social support than single mothers who report lower levels of stress.

H_{1d}: Single mothers who report higher levels of depression will report lower levels of parental self-efficacy than single mothers who report lower levels of depression.

H_{1e}: Single mothers who report higher levels of depression will report lower levels of parenting satisfaction than single mothers who report lower levels of depression.

H_{1f}: Single mothers who report higher levels of depression will report lower levels of social support than single mothers who report lower levels of depression.

2. Do single mothers of children with a developmental disability report higher levels of stress and depression and lower levels of parental self-efficacy and parenting satisfaction than single mothers of children without a developmental disability?

H₂: There are differences in stress, depression, parental self-efficacy, and parenting satisfaction between single mothers of children with developmental disabilities and single mothers of nondisabled children.

H_{2a}: Single mothers of children with developmental disabilities will report higher levels of stress than single mothers of nondisabled children.

H_{2b}: Single mothers of children with developmental disabilities will report higher levels of depression than single mothers of nondisabled children.

H_{2c}: Single mothers of children with developmental disabilities will report lower levels of parental self-efficacy than single mothers of nondisabled children.

H_{2d}: Single mothers of children with developmental disabilities will report lower levels of parenting satisfaction than single mothers of nondisabled children.

H_{2e}: Single mothers of children with developmental disabilities will report lower levels of social support than single mothers of nondisabled children.

3. Does the presence of a child that is developmentally disabled moderate the relationships between stress and parental self-efficacy, parenting satisfaction, social support, and depression?

H₃: Having a child that is developmentally disabled will moderate the relationships between stress and parental self-efficacy, parenting satisfaction, social support, and depression.

H_{3a}: Having a child that is developmentally disabled will moderate the relationship between stress and parental self-efficacy.

H_{3b}: Having a child that is developmentally disabled will moderate the relationship between stress and parenting satisfaction.

H_{3c}: Having a child that is developmentally disabled will moderate the relationship between stress and social support.

H_{3d}: Having a child that is developmentally disabled will moderate the relationship between stress and depression.

4. Does the presence of a child that is developmentally disabled moderate the relationships between depression and parental self-efficacy, parenting satisfaction, social support, and stress?

- H₄: Having a child that is developmentally disabled will moderate the relationships between depression and parental self-efficacy, parenting satisfaction, social support, and stress.
- H_{4a}: Having a child that is developmentally disabled will moderate the relationship between depression and parental self-efficacy.
- H_{4b}: Having a child that is developmentally disabled will moderate the relationship between depression and parenting satisfaction.
- H_{4c}: Having a child that is developmentally disabled will moderate the relationship between depression and social support.
- H_{4d}: Having a child that is developmentally disabled will moderate the relationship between depression and stress.
5. Does the presence of a child that is developmentally disabled moderate the relationships between social support and parental self-efficacy, parenting satisfaction, stress, and depression?
- H₅: Having a child that is developmentally disabled will moderate the relationships between social support and parental self-efficacy, parenting satisfaction, depression, and stress.
- H_{5a}: Having a child that is developmentally disabled will moderate the relationship between social support and parental self-efficacy.
- H_{5b}: Having a child that is developmentally disabled will moderate the relationship between social support and parenting satisfaction.
- H_{5c}: Having a child that is developmentally disabled will moderate the relationship between social support and depression.
- H_{5d}: Having a child that is developmentally disabled will moderate the relationship between social support and stress.
6. Can stress, depression, parental self-efficacy, and parenting satisfaction for single mothers with and without children with disabilities be predicted from socioeconomic status, social support, age of the mother, age of the selected child, total number of children in the home, history of psychiatric or psychological care within the last 12 months, diagnosis type of the child with a disability, maternal rating of the severity of the child's disability, and years of formalized services for the child with a disability?
- H₆: Stress, depression, parental self-efficacy, and parenting satisfaction can be predicted from selected demographic variables (SES, social support, age of mother, age of selected child, total number of children in the home, and history of maternal psychological or psychiatric treatment. Additionally, for mothers of children with developmental disabilities, diagnosis of the child- cognitive impairment/ cognitive impairment with a diagnosed psychiatric condition/ cognitive impairment with a

diagnosed medical condition/ and cognitive impairment with a diagnosed psychiatric and medical condition, maternal ratings of the severity of their child's disability, and number of years of receiving formal services for their child.

H_{6a}: Stress levels of single mothers can be predicted from the predictor variables listed relative to H6.

H_{6b}: Depression levels of single mothers can be predicted from the predictor variables listed relative to H6.

H_{6c}: Parental self-efficacy levels of single mothers can be predicted from the predictor variables listed relative to H6.

H_{6d}: Parenting satisfaction of single mothers can be predicted from the predictor variables listed relative to H6.

CHAPTER 3

METHODOLOGY

Participants

Participants were 192 single (never married, divorced, legally separated, or widowed, with no romantic partner living in the home), biological mothers of children ranging in age from 5 to 17 years of age residing in the Metropolitan Detroit area. Mothers who were diagnosed as developmentally disabled, were not the biological parent of the child whose data was used in the study, had their parental rights terminated, or required the use of a court-appointed legal guardian were excluded from participation. Single mothers of children that were developmentally disabled were recruited through a clinic in Detroit that provided services for individuals with developmental disabilities. Mothers of these children must have had at least one biological child living in the home that had been diagnosed as developmentally disabled by a qualified mental health professional or physician. Single mothers of children without a disability were recruited through word-of-mouth and “snowball” recruiting through local businesses with the assistance of a research assistant. These participants could not have any children that were developmentally disabled. The age range requirement for mothers was 18 to 60 years of age.

Materials

Perceived Stress Scale-10 (PSS-10). The instrument utilized to assess stress levels among these mothers was the Perceived Stress Scale-10 (Cohen 1983), reportedly the most widely used instrument for assessing perceived stress (Cohen, 1994). The PSS-10 is a 10-item instrument used to measure the degree to which one appraises situations in one’s life as uncontrollable, overloading, unpredictable, and generally stressful. It was designed for use on community samples with at least a junior high school education. Each item queries about thoughts and feelings during the last month (e.g., “In the last month, how often have you felt

difficulties were piling up so high that you could not overcome them?") and are generalized in nature, thereby not restricting the instrument for use to any subpopulation group. Respondents are asked to choose a response to each of the 10 items from five choices. The choices range for each item from "Never" (score of 0) to "Very Often" (score of 4), with the highest possible total stress score being 40 and the least possible total stress score being 0. Responses are then reversed (0=4, 1=3, 2=2, 3=1, & 4=0) to score the positively stated items (items 4, 5, 7, & 8), and are summed with the remaining item scores to yield a total stress score, with higher total scores indicating higher levels of overall perceived stress. The PSS-10 has shown relative item invariance to gender, race, and education, making it applicable to a wide range of subjects (Cole, 1999). Additionally, the PSS-10 has been translated into Spanish (Remor, 2006), Hungarian (Adrienne & Barna, 2006), and Japanese (Mimura & Griffiths, 2004) versions, all of which have good psychometric properties.

Cohen and Williamson (1988) reported high internal consistency alphas ranging from .75 to .86 for the PSS as well as test-retest reliability of .85. The test-retest reliability of the PSS over two 12-month periods was also examined among a group of women diagnosed with breast cancer and estimates for this sample ranged from .53 to .61 (Golden-Kruetz, Browne, Frierson, & Andersen, 2004). Reliability coefficients using Cronbach's alpha in this study also ranged from .86 to .92. The PSS has also accounted for 33% of the variance in parental well-being among mothers of school-age children with cerebral palsy (Skok, Harvey, & Reddihough, 2006).

The construct validity and reliability of the PSS-10 were also examined among a sample of college undergraduates from three different universities (Roberti, Harrington, & Storch, 2006). The PSS-10 had a Cronbach's alpha reliability coefficient of .89 for the total score. Significant convergent validity with the State-Trait Anxiety Inventory-Trait Version (STAI-T; Spielberger, 1983) total score (.73), STAI-T Anxiety Factor (.59), STAI-T Depression Factor

(.72) was found for the PSS-10. The Chance and Powerful Others subscales of the Multidimensional Health Locus of Control (MHLC; Wallston, Wallston, & Devellis, 1978) also had significant convergent validity with the PSS-10, with Pearson product-moment correlations of .20 and .18 respectively. The Chance subscale of the MHLC measures the extent to which one thinks health is based on chance factors such as fate, while the Powerful Others subscale of the MHLC measures the beliefs that one's health is dependent upon the actions of "powerful others" such as doctors and health professionals.

Beck Depression Inventory-II (BDI-II). The instrument used to measure depression was the Beck Depression Inventory-II (Beck, A.T., Steer, R.A., & Brown, G.K., 1996). The BDI-II is a revised version of the original Beck Depression Inventory (BDI; Beck & Steer, 1993) and has been shown to demonstrate excellent reliability and validity measures in a variety of populations (Arnau, Meagher, Norris, & Bramson, 2001) and is one of the most widely used instruments in the study of depression. The BDI-II is a 21-item, self-report instrument used to measure the severity of depressive symptomatology in respondents. Each item is rated on a scale from 0 to 3, with 0 being the least severe and 3 being the most severe rating. The ratings of all of the items are summed, which yield a score that can range from 0 to 63. Total scores ranging from 0 to 13 are considered Minimal, scores ranging from 14 to 19 are considered Mild, scores ranging from 20 to 28 are considered Moderate, and scores ranging from 29 to 63 are considered Severe.

Arnau, Meagher, Norris, and Bramson (2001) found the BDI-II to have an excellent internal reliability coefficient of .94 and a -.65 correlation with the Mental Health subscale of the Medical Outcomes Study Short-Form General Health Survey (SF-20; Stewart, Hayes, & Ware, 1988), thereby demonstrating respectable divergent validity. The BDI-II also demonstrated excellent criterion related validity in this study, which utilized 340 primary care medical patients ranging in age from 18 to 54 years, by successfully differentiating between patients who were

diagnosed as depressed according to DSM-IV criteria versus those who were not. The average BDI-II score of the nondepressed group was 6.7 (SD=7.1) and for the depressed group it was 28.0 (SD=9.7). This difference was statistically significant at $p < .001$.

More recent psychometric support for the BDI-II was obtained by Segal, Coolidge, Cahill, and O'Riley (2008), who used the BDI-II on a group of community-dwelling adults ranging in age from 17 to 90 years. Internal reliability for the instrument was .90 and respectable convergent and divergent validity were found for the BDI-II in relation to numerous other psychological instruments. The BDI-II had a correlation of .68 with the Center for the Epidemiologic Studies Depression Scale (Radloff, 1977), .67 with the Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983), and Coolidge Axis II Inventory (CATI; Coolidge, 2004) subscales including Depression (.58), Depressive Personality (.57), and Anxiety (.53). Divergent validity in this study for the BDI-II was obtained through statistically significant negative correlations of the BDI-II total score with several of the Short Psychological Well-Being Scale (SPWB; Ryff, 1989) subscales, including Self Acceptance (-.66), Total Psychological Well-Being (-.65), Environmental Mastery (-.62), Purpose In Life (-.60), and Positive Relations With Others (-.50), among others.

Parenting Sense of Competence- Parental Self-Efficacy and Parental Satisfaction subscales. This study utilized a domain-specific approach to maternal self-efficacy in order to assess mothers' feelings of competence in the parental role. The instrument utilized to assess maternal self-efficacy was the Efficacy subscale of Gibaud-Wallston and Wandersman's (1978) *Parenting Sense of Competence* (PSOC) scale. The PSOC Efficacy subscale consists of 8 items utilizing a 6-point Likert scale, ranging from Strongly Disagree ("6") to Strongly Agree ("1"). The items on the Efficacy subscale are scored in reverse so that higher scores indicate greater parental self-efficacy. The scoring range is from 8 to 48, with higher scores representing stronger

parental self-efficacy. Johnston and Mash (1989) have provided construct validation of the PSOC with a sample exceeding 500 subjects, as well as sufficient internal consistency reliability for the Efficacy subscale (Cronbach's $\alpha=.76$). Coleman and Karraker (2003) obtained a Cronbach's α of .81 utilizing the Efficacy subscale of the PSOC. An example of an Efficacy subscale item is "If anyone can find the answer to what is troubling my child, I am the one."

The Satisfaction subscale of the PSOC was used to assess maternal parenting satisfaction, "an affective dimension reflecting parenting frustration, anxiety, and motivation" (Johnston & Mash, 1989, p. 167). This subscale consists of 9 items that also utilizes a Likert-style format with choices ranging from "Strongly Disagree" (6) to "Strongly Agree" (1). The scoring range is from 9 to 54, with higher scores indicating greater parenting satisfaction. Gibaud-Wallston & Wandersman (1978) reported an alpha coefficient of .82 for the Satisfaction subscale. An example of a Satisfaction subscale is "My talents and interests are in other areas, not in being a parent."

Rogers and Matthews (2004) examined the factor structure, validity, and reliability of the PSOC. They found three factor structures that accounted for 51.6% of the variance among mothers- Efficacy (28.2%), Satisfaction (14.6%) and a third factor, Interest (8.8%). The authors found internal consistency values of .77 for the Satisfaction subscale, .78 for Efficacy, and .58 for the Interest subscale among mothers. They also found the Satisfaction subscale of the PSOC to be significantly negatively correlated with all of the subscales of the Eyberg Child Behavior Inventory (ECBI; Eyburg & Pincus, 1999), the Depression Anxiety Stress Scale (DASS; Lovibond & Lovibond, 1995), and the Parenting Scale (Arnold, O'Leary, Wolff, & Acker, 1993) for parents while utilizing a significance level of .01. Additionally, the Efficacy subscale was significantly negatively correlated with the Intensity subscale of the ECBI and the Overreactivity subscale of the Parenting Scale, thus providing evidence of concurrent validity.

Ohan, Leung, and Johnston (2000) also examined the psychometric properties of the PSOC and found that a two-factor structure was most appropriate for the instrument. The first factor accounted for 31.80% of the variance among mothers of children aged 5 to 12, and the second factor accounted for 11.44% of the variance. The internal consistency of both of the PSOC subscales, Efficacy and Satisfaction, was .80. For both mothers and fathers, the Satisfaction subscale was significantly correlated with the Child Behavior Checklist (Achenbach, 1991), Child-Rearing Practices Report (Block, 1965), and the Dyadic Adjustment Scale (Spanier, 1976) after the variance due to the Efficacy subscale was controlled. The Efficacy subscale was significantly correlated to an easy-going parenting style after the variance due to the Satisfaction subscale was controlled. The results of this study provide evidence for internal consistency, as well as convergent and divergent validity of the PSOC. Additional psychometric support for the PSOC can be found in the work of Ngai, Chan, and Holroyd (2007), who reported a Cronbach's alpha coefficient of .85 and test-retest reliability of .87.

Family Support Scale (FSS). Social support was assessed with the Family Support Scale (Dunst, Jenkins, & Trivette, 1984). The FSS is a 19-item instrument that also leaves space for two additional items to be listed at the respondent's discretion regarding sources of social support. Respondents answer items by choosing from a list of six choices that range from "Not at All Helpful" (1) to "Extremely Helpful" (5). There is a sixth choice, "Not Available" (0) for sources of social support that are not available to the family. Higher scores indicate a greater amount of reported social support. The FSS assesses how helpful people and groups have been to the respondent's family during the past 3 to 6 months. The FSS assesses social support from both informal and formal sources, five in all, including Kinship (Parents, relatives), Spouse/Partner (Spouse/partner, spouse/partner's parents, spouse/partner's relatives), Informal Support (Friends, spouse/partner's friends, own children, neighbors, other parents, church members/minister),

Programs/Organizations (Coworkers, parent/group members, social groups/clubs, school/day care), and Professional Services (Family/child's physician, early intervention program, professional helpers, professional agencies).

The FSS has shown respectable psychometric properties, including an internal consistency reliability coefficient alpha of .77, a Spearman-Brown split-half reliability of .75, and a test-retest reliability of .75 for the average correlation among all of the items and a .91 correlation for the total scale scores over a one-month interval (Dunst, Trivette, & Jenkins, 1984). Dunst, Trivette, and Jenkins (1984) also found that the FSS had concurrent predictive validity with the Questionnaire on Resources and Stress (QRS; Holroyd, 1974), indicating that higher levels of support on the FSS were negatively related to family and personal problems on the QRS.

Hanley, Tasse, Aman, and Pace (1998) examined the psychometric properties of the FSS on 244 low-income families in a Head Start program and found that the five subscales of the FSS possessed moderate to high internal consistency, ranging from .60 to .78, with a total scale Cronbach's alpha of .85 and a total score split-half reliability of .72. Test-retest reliability over a two week period was .73 and ranged from .60 to .78 for the subscales, all of which were statistically significant at $p < .001$. Dunst, Trivette, and Hamby (1993b) reported a test-retest reliability coefficient of .91 over a one-month interval. Taylor, Crowley, and White (1993; as cited in Tasse, Aman, & Pace, 1988) found a similar total scale alpha value of .80 for the FSS, as well as .35 to .76 across subscales. Taylor (1995) also obtained a split-half reliability coefficient of .75 and .77 for the total score on the use of the FSS with children with disabilities.

Hollingshead's Four-Factor Index of Social Status. The instrument used to measure socioeconomic status for the purposes of this study was Hollingshead's (1975) Four-Factor Index of Social Status. The Index consists of four factors: gender, marital status, highest level of

education achieved, and occupation. Information on each of these four factors was gathered from each participant as part of the demographic instrument. Each participant was given an overall social status score that potentially ranged from 8 to 66, with higher scores indicating higher socioeconomic status. The participants in this study were single, divorced, separated, or widowed and therefore the mothers were always considered the heads of the household and their occupation and education were utilized to estimate socioeconomic status. However, if a participant was not gainfully employed and was receiving income or support payments from a deceased spouse or had been legally separated or divorced from the participant, the education and occupation of the absent spouse was utilized to calculate socioeconomic status.

Procedure

Participants for the present study were recruited through a clinic that provides services to children that are developmentally disabled in the Metropolitan Detroit area and also through local businesses and settings with the assistance of a research assistant who aided in the data-collection process for mothers of children without a disability. Gift card raffles for \$50 to Target for both groups of participants (one for each group of mothers) were used to encourage participation from prospective research participants. There were 192 willing participants (93 mothers of children that are developmentally disabled and 99 mothers of nondisabled children) recruited over a 5-month period who were given the research packet in person by the principal researcher or his assistant or had the packet mailed to their home.

Participants recruited at the clinic providing services for their children that are developmentally disabled filled out the questionnaires in a designated area of the clinic to ensure privacy. They also had the option of having the materials and instructions read to them by the principal researcher if they did not possess adequate reading and comprehension skills or were otherwise unable to independently read and fill out the materials. The principal researcher

answered any questions or concerns the participants may have had after they reviewed the Information Form before proceeding to the actual research instruments. Completed packets at the clinic were sealed in a large, plain envelope and given to the receptionist at the front desk or placed in the principal researcher's mailbox at the clinic. The principal researcher also met participants at their homes to complete the packet if they did not have available transportation.

Participants with a child with a disability were recruited via information from the electronic database at the clinic providing services to their child. These prospective participants were read a standard script over the phone that was read to all prospective research participants who had a child receiving services at the clinic. This script included an introduction and a general description of the study while assuring prospective participants that their decision to participate or not participate would not affect the services they receive at the clinic. If they agreed to participate, the principal researcher mailed them a packet containing the instruments and all related materials as well as a self-addressed, postage-paid return envelope to return the packet to the clinic. They also had the option of returning the packet on their next visit to the clinic or having the principal investigator bring it to their home to be completed.

Mothers of children without disabilities were recruited through local settings and businesses in the Metropolitan Detroit area with the help of a research assistant who aided in the data-collection process via word-of-mouth and snowball recruiting techniques. In most instances the packets were completed in person or left for pick-up at a later pre-arranged date. In some cases the principal researcher made arrangements to mail the research packet to their home with a self-addressed, stamped, return envelope for them to mail the packet back once it was completed. If the prospective participants were willing but unable to independently read and comprehend the materials or needed assistance for other reasons that did not exclude them from participation, the principal researcher arranged to meet them at the clinic providing services for

children with developmental disabilities if they were able to attend, or the principal investigator took the packet to their home to be completed.

The research packet included an Information Sheet, a Demographic Questionnaire, the Perceived Stress Scale, the Beck Depression Inventory-II, the Parenting Self-Efficacy subscale of the Parenting Sense of Competence Scale and the Parental Satisfaction subscale of the Parenting Sense of Competence Scale, and the Family Support Scale. Information for the Hollingshead Four Factor Index will be obtained from the demographic sheet. The Information Sheet was always placed first followed by the Demographic Questionnaire. The remaining four instruments were counterbalanced to subjects so that each possible order of instruments was given in equal number to both groups of participants. The data was examined for missing responses. Items that had not been answered were completed with the average item score of the instrument. Any participants with more than three unanswered items on any instrument were omitted from any statistical analyses. The time it took to complete the entire packet was approximately 20 to 30 minutes, on average. Data were entered into the SPSS 17.0 statistical program for appropriate analyses. Figure 1 presents the statistical analyses that will be used to address each of the research questions.

Figure 1

Hypotheses, Variables, and Statistical Analyses

| Hypotheses | Variables | Statistical Analysis |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Do single mothers who report higher levels of stress and depression also report lower levels of parental self-efficacy, parenting satisfaction, and social support? | | |
| <p>H₁: Single mothers who report higher levels of stress and depression will report lower levels of parental self-efficacy, parenting satisfaction, and social support than single mothers who report lower levels of stress and depression.</p> <p>H_{1a}: Single mothers who report higher levels of stress will report lower levels of parental self-efficacy than single mothers who report lower levels of stress.</p> <p>H_{1b}: Single mothers who report higher levels of stress will report lower levels of parenting satisfaction than single mothers who report lower levels of stress.</p> <p>H_{1c}: Single mothers who report higher levels of stress will report lower levels of social support than single mothers who report lower levels of stress.</p> <p>H_{1d}: Single mothers who report higher levels of depression will report lower levels of parental self-efficacy than single mothers who report lower levels of depression.</p> <p>H_{1e}: Single mothers who report higher levels of depression will report lower levels of parenting satisfaction than single mothers who report lower levels of depression.</p> <p>H_{1f}: Single mothers who report higher levels of depression will report lower levels of social</p> | <p><u>Independent Variables:</u></p> <ul style="list-style-type: none"> • Stress (Nominal scale) • Depression (Nominal scale) <p><u>Dependent Variables:</u></p> <ul style="list-style-type: none"> • Parental self-efficacy (Interval scale) • Parenting satisfaction (Interval scale) • Social support (Interval scale) | <p>2x2 MANOVA will be conducted on the listed independent and dependent variables.</p> <p>If a significant result is obtained then univariate ANOVA tests will be conducted on the main effects of stress and depression to determine which of the dependent variables are contributing to the statistically significant difference on the omnibus F test.</p> <p>If a significant interaction is obtained between the factors a new factor will be created based upon pairwise combinations of all of the groups. A one-way ANOVA will be used on the dependent variables which had significant interactions to determine which combination(s) of groups significantly contributed to the interaction term.</p> <p>Partial eta squared values will be reported for each factor to show the effect size of each factor on the dependent variables.</p> |

| Hypotheses | Variables | Statistical Analysis |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| support than single mothers who report lower levels of depression. | | |
| 2. Do single mothers of children with a developmental disability report higher levels of stress and depression and lower levels of parental self-efficacy and parenting satisfaction than single mothers of children without a developmental disability? | | |
| <p>H₂: There are differences in stress, depression, parental self-efficacy, and parenting satisfaction between single mothers of children with developmental disabilities and single mothers of nondisabled children.</p> <p>H_{2a}: Single mothers of children with developmental disabilities will report higher levels of stress than single mothers of nondisabled children.</p> <p>H_{2b}: Single mothers of children with developmental disabilities will report higher levels of depression than single mothers of nondisabled children.</p> <p>H_{2c}: Single mothers of children with developmental disabilities will report lower levels of parental self-efficacy than single mothers of nondisabled children.</p> <p>H_{2d}: Single mothers of children with developmental disabilities will report lower levels of parenting satisfaction than single mothers of nondisabled children.</p> <p>H_{2e}: Single mothers of children with developmental disabilities will report lower levels of social support than single mothers of nondisabled children.</p> | <p><u>Independent Variable:</u> Type of child:</p> <ul style="list-style-type: none"> • Developmentally disabled vs. nondisabled <p><u>Dependent Variables:</u></p> <ul style="list-style-type: none"> • Stress • Depression • Parental self-efficacy • Parenting satisfaction | <p>One-way MANOVA will be conducted on the listed independent and dependent variables.</p> <p>If a significant result is obtained then univariate ANOVA tests will be conducted as a follow-up to determine which of the dependent variables are contributing to the statistically significant differences on the dependent variables.</p> <p>To determine the direction of the statistically significant differences, the mean scores will be examined for each level of the independent variable.</p> <p>Partial eta squared values will be reported for each factor to show the effect size of each factor on the dependent variables.</p> |
| 3 Does the presence of a child that is developmentally disabled moderate the relationships between stress and parental self-efficacy, parenting satisfaction, social support, and depression? | | |
| H ₃ : Having a child that is developmentally disabled will moderate the relationships between stress and parental self- | <p><u>Moderating Variable:</u></p> <ul style="list-style-type: none"> • Having a child that is developmentally disabled | Test of moderation through multiple regression will be implemented for the predictor variable and each criterion variable with stress |

| Hypotheses | Variables | Statistical Analysis |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>efficacy, parenting satisfaction, social support, and depression.</p> <p>H_{3a}: Having a child that is developmentally disabled will moderate the relationship between stress and parental self-efficacy.</p> <p>H_{3b}: Having a child that is developmentally disabled will moderate the relationship between stress and parenting satisfaction.</p> <p>H_{3c}: Having a child that is developmentally disabled will moderate the relationship between stress and social support.</p> <p>H_{3d}: Having a child that is developmentally disabled will moderate the relationship between stress and depression.</p> | <p><u>Predictor Variable:</u></p> <ul style="list-style-type: none"> • Stress <p><u>Criterion Variables:</u></p> <ul style="list-style-type: none"> • Parental self-efficacy • Parenting satisfaction • Social support • Depression | <p>associated with having a child that is developmentally disabled as the moderating variable.</p> <p>Four separate multiple regressions will be conducted to determine if having a child that is developmentally disabled has a significantly moderating effect on the relationships between the independent and dependent variables.</p> |
| <p>4. Does the presence of a child that is developmentally disabled moderate the relationships between depression and parental self-efficacy, parenting satisfaction, social support, and stress?</p> | | |
| <p>H₄: Having a child that is developmentally disabled will moderate the relationships between depression and parental self-efficacy, parenting satisfaction, social support, and stress.</p> <p>H_{4a}: Having a child that is developmentally disabled will moderate the relationship between depression and parental self-efficacy.</p> <p>H_{4b}: Having a child that is developmentally disabled will moderate the relationship between depression and parenting satisfaction.</p> <p>H_{4c}: Having a child that is developmentally disabled will moderate the relationship between depression and social support.</p> | <p><u>Moderating Variable:</u></p> <ul style="list-style-type: none"> • Having a child that is developmentally disabled <p><u>Predictor Variable:</u></p> <ul style="list-style-type: none"> • Depression <p><u>Criterion Variables:</u></p> <ul style="list-style-type: none"> • Parental self-efficacy • Parenting satisfaction • Social support • Stress | <p>Tests of moderation through multiple regression will be implemented for the predictor variable and each criterion variable with having a child who is developmentally disabled as the moderating variable.</p> <p>Four separate multiple regressions will be conducted to determine if having a child who is developmentally disabled has a significant moderating effect on the relationships between the independent and dependent variables.</p> |

| Hypotheses | Variables | Statistical Analysis |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| H _{4d} : Having a child that is developmentally disabled will moderate the relationship between depression and stress. | | |
| 5. Does the presence of a child that is developmentally disabled moderate the relationships between social support and parental self-efficacy, parenting satisfaction, stress, and depression? | | |
| <p>H₅: Having a child that is developmentally disabled will moderate the relationships between social support and parental self-efficacy, parenting satisfaction, depression, and stress.</p> <p>H_{5a}: Having a child that is developmentally disabled will moderate the relationship between social support and parental self-efficacy.</p> <p>H_{5b}: Having a child that is developmentally disabled will moderate the relationship between social support and parenting satisfaction.</p> <p>H_{5c}: Having a child that is developmentally disabled will moderate the relationship between social support and depression.</p> <p>H_{5d}: Having a child that is developmentally disabled will moderate the relationship between social support and stress.</p> | <p><u>Moderating Variable:</u></p> <ul style="list-style-type: none"> • Having a child that is developmentally disabled <p><u>Predictor Variable:</u></p> <ul style="list-style-type: none"> • Social support <p><u>Criterion Variables:</u></p> <ul style="list-style-type: none"> • Parental self-efficacy • Parenting satisfaction • Depression • Stress | <p>Tests of moderation through multiple regression will be implemented for the predictor variable and each criterion variable with having a child who is developmentally disabled as the moderating variable.</p> <p>Four separate multiple regressions will be conducted to determine if having a child who is developmentally disabled has a significant moderating effect on the relationships between the independent and dependent variables.</p> |
| 6. Can stress, depression, parental self-efficacy, and parenting satisfaction for single mothers with and without children with disabilities be predicted from socioeconomic status, social support, age of the mother, age of the selected child, total number of children in the home, history of psychiatric or psychological care within the last 12 months, diagnosis type of the child with a disability, maternal rating of the severity of the child's disability, and years of formalized services for the child with a disability? | | |
| H ₆ : Stress, depression, parental self-efficacy, and parenting satisfaction can be predicted from selected demographic variables (SES, social support, age of mother, age of selected child, total number of children in the home, and history of maternal psychological or psychiatric treatment. | <p><u>Criterion Variables:</u></p> <ul style="list-style-type: none"> • Stress • Depression • Parental self-efficacy • Parenting satisfaction <p><u>Predictor Variables:</u></p> <ul style="list-style-type: none"> • Socioeconomic status • Social support • Age of mother | <p>Stepwise multiple regressions will be implemented for each criterion variable in both groups of mothers to determine which explanatory variables can significantly account for the variation in each outcome variable.</p> <p>Prior to the stepwise multiple linear regression analyses, Pearson product</p> |

| Hypotheses | Variables | Statistical Analysis |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Additionally, for mothers of children with developmental disabilities, diagnosis of the child-cognitive impairment/ cognitive impairment with a diagnosed psychiatric condition/ cognitive impairment with a diagnosed medical condition/ and cognitive impairment with a diagnosed psychiatric and medical condition, maternal ratings of the severity of their child's disability, and number of years of receiving formal services for their child.</p> <p>H_{6a}: Stress levels of single mothers can be predicted from the predictor variables listed relative to H6.</p> <p>H_{6b}: Depression levels of single mothers can be predicted from the predictor variables listed relative to H6.</p> <p>H_{6c}: Parental self-efficacy levels of single mothers can be predicted from the predictor variables listed relative to H6.</p> <p>H_{6d}: Parenting satisfaction of single mothers can be predicted from the predictor variables listed relative to H6.</p> | <ul style="list-style-type: none"> • Age of child • Number of children • Psychological or psychiatric history of mother • Additional for mothers of disabled children: • Child diagnosis type • Severity rating of child's disability • Years of receiving formal services for child | <p>moment correlations will be used to determine which of the predictor variables are significantly related to the criterion variables. Only those predictor variables that are significantly correlated with the criterion variables will be used in the stepwise multiple linear regression analyses.</p> |

CHAPTER 4

RESULTS

This chapter presents results of the data analyses that were used to describe the sample and test the hypotheses that were developed for this study. The chapter is divided into three sections. The first section provides a description of the sample using crosstabulations and measures of central tendency and dispersion. The second section of the chapter provides a description of the scaled variables. Results of the inferential statistical analyses used to test the hypotheses and address the research questions are presented in the third section of the chapter.

The aim of the present research was to obtain a better understanding of the relationships between social support, stress, depression, parental self-efficacy, and parenting satisfaction among single mothers both with and without children who are developmentally disabled.

A total of 192 single biological mothers participated in the study, including 93 (49.4%) mothers of children with developmental disabilities and 99 (51.6%) mothers of children without disabilities. These mothers in both groups met the criteria for inclusion in the study.

Description of the Sample

The mothers completed a short demographic survey. The responses to the questions regarding their age and the age of their child were summarized using descriptive statistics. The results of the t-tests for independent samples are presented in Table 1.

Table 1

t-Tests for Independent Samples – Age of Mother and Child by Group Membership (N = 192)

| Age | Number | Mean | SD | Range | | t-Value | Sig |
|----------------------------|--------|-------|------|-------|-------|---------|-------|
| | | | | Min | Max | | |
| Mother | | | | | | | |
| Child with disabilities | 92 | 40.19 | 7.53 | 22.75 | 60.99 | 4.69 | <.001 |
| Child without disabilities | 98 | 34.64 | 8.71 | 20.25 | 59.50 | | |
| Child | | | | | | | |
| Child with disabilities | 93 | 12.92 | 3.63 | 5.00 | 18.00 | 5.56 | <.001 |
| Child without disabilities | 94 | 9.88 | 3.85 | 5.00 | 18.00 | | |

The mothers of children with disabilities ($m = 40.19$, $sd = 7.53$) were significantly older than the mothers of children without disabilities ($m = 34.53$, $sd = 8.71$); $t(188) = 4.69$, $p < .001$. The comparison of children whose mothers were included in the study was statistically significant, $t(185) = 5.56$, $p < .001$. The children with disabilities had a mean age of 12.92 ($sd = 3.63$), while the mean age of children without disabilities was 9.88 ($sd = 3.85$).

The mothers reported their ethnicity on the demographic survey. Their responses were crosstabulated by group membership for presentation in Table 2.

Table 2

Crosstabulations – Ethnicity of Mother by Group Membership

| Ethnicity | Group Membership | | | | | |
|------------------|-------------------------|-------|----------------------------|-------|-------|-------|
| | Child with Disabilities | | Child without Disabilities | | Total | |
| | N | % | N | % | N | % |
| African American | 86 | 93.5 | 45 | 45.9 | 131 | 68.9 |
| Other | 6 | 6.5 | 53 | 54.1 | 59 | 31.1 |
| Total | 92 | 100.0 | 98 | 100.0 | 190 | 100.0 |

 $\chi^2(1) = 50.13$, $p < .001$

The majority of mothers were African American (n = 131, 68.9%). Eighty-six (93.5%) mothers with a child with disabilities and 45 (45.9%) mothers of a child without disabilities were African American. To determine if ethnicity was independent of group membership, a chi-square test for independence was completed. The results of this analysis were statistically significant, $\chi^2(1) = 50.13, p < .001$. This finding indicated that ethnicity was not independent of group membership.

The mothers reported their highest level of education. Their responses were crosstabulated by group membership for presentation in Table 3.

Table 3

Crosstabulations – Educational Level of Mother by Group Membership

| Educational Level | <u>Group Membership</u> | | | | | |
|-----------------------|--------------------------------|-------|-----------------------------------|-------|--------------|-------|
| | <u>Child with Disabilities</u> | | <u>Child without Disabilities</u> | | <u>Total</u> | |
| | N | % | N | % | N | % |
| Less than high school | 18 | 19.6 | 14 | 14.1 | 32 | 16.8 |
| High school grad/GED | 31 | 33.7 | 30 | 30.3 | 61 | 31.9 |
| Some college | 36 | 39.1 | 44 | 44.4 | 80 | 41.8 |
| College graduate | 7 | 7.6 | 11 | 11.2 | 18 | 9.5 |
| Total | 92 | 100.0 | 99 | 100.0 | 191 | 100.0 |

$\chi^2(3) = 1.95, p = .583$

The largest group of mothers (n = 80, 41.8%) reported they had completed some college. Included in this number were 36 (39.1%) mothers of children with disabilities and 44 (44.4%) mothers of children without disabilities. Seven (7.8%) mothers of children with disabilities and 11 (11.2%) mothers of a child without disabilities reported they had completed either undergraduate or graduate degrees. The results of the chi-square test for independence used to determine if educational level was associated with group membership was not statistically

significant, $\chi^2 (3) = 1.95$, $p = .583$. Based on this finding, educational level of the mothers appears to be independent of group membership.

The socioeconomic status of the mothers was obtained using the Hollingshead Four-Factor Index of Social Status. The educational levels and type of occupation of the mothers and fathers were weighted using the values recommended by Hollingshead separately. If data were available for both parents, the scores were averaged. If data were available for either the mother or the father, but not both, the socioeconomic status of the parent with data was used. The scores were then categorized into five levels for presentation in Table 4.

Table 4

Crosstabulations – Socioeconomic Status by Group Membership

| Socioeconomic Status | <u>Group Membership</u> | | | | | |
|----------------------|--------------------------------|-------|-----------------------------------|-------|--------------|-------|
| | <u>Child with Disabilities</u> | | <u>Child without Disabilities</u> | | <u>Total</u> | |
| | N | % | N | % | N | % |
| Lower class | 32 | 34.4 | 15 | 15.6 | 47 | 24.9 |
| Lower middle class | 32 | 34.4 | 34 | 35.4 | 66 | 34.9 |
| Middle class | 16 | 17.2 | 23 | 24.0 | 39 | 20.6 |
| Upper middle class | 11 | 11.8 | 20 | 20.8 | 31 | 16.4 |
| Upper class | 2 | 2.2 | 4 | 4.2 | 6 | 3.2 |
| Total | 93 | 100.0 | 96 | 100.0 | 189 | 100.0 |

$\chi^2 (4) = 10.70$, $p = .030$

The largest group of mothers ($n = 66$, 34.9%) were in the lower middle socioeconomic class. This number included 32 (34.4%) mothers of a child with disabilities and 34 (35.4%) mothers of a child without disabilities. Of the 47 (24.9%) mothers who were included in the lower socioeconomic class, 32 (34.4%) were mothers of children with disabilities and 15 (15.6%) were mothers of children without disabilities. To determine if an association existed

between the socioeconomic class and group membership, a chi-square test for independence was completed. The results of this analysis were statistically significant, $\chi^2 (4) = 10.70$, $p = .030$, providing support that socioeconomic status was not independent of group membership.

The mothers were asked if they had received psychiatric services within the past year. Their responses were crosstabulated by group membership, with the results presented in Table 5.

Table 5

Crosstabulations – Mother Received Psychiatric/Psychological Services in Last Year by Group Membership

| Mother Received Psychiatric/Psychological Services in Last Year | <u>Group Membership</u> | | | | <u>Total</u> | |
|-----------------------------------------------------------------------|--------------------------------|-------|-----------------------------------|-------|--------------|-------|
| | <u>Child with Disabilities</u> | | <u>Child without Disabilities</u> | | N | % |
| | N | % | N | % | | |
| Yes | 11 | 11.8 | 12 | 12.1 | 23 | 12.0 |
| No | 82 | 88.2 | 87 | 87.9 | 169 | 88.0 |
| Total | 93 | 100.0 | 99 | 100.0 | 192 | 100.0 |

$\chi^2 (1) = 0.01$, $p = .950$

Of the 23 (12.0%) mothers who indicated they had received psychiatric/psychological services in the last year, 11 (11.8%) had a child with disabilities and 12 (12.1%) had a child without disabilities. The results of the chi-square test for independence used to determine if the mother had received psychiatric/psychological services in the last year was independent of group membership were not statistically significant, $\chi^2 (1) = 0.01$, $p = .950$. This finding provided evidence that the two variables were independent of each other.

The mothers were asked to indicate the number of children in the home. Their responses were summarized using descriptive statistics. The results of the t-tests for two independent samples used to compare the two groups on the number children in the home are presented in Table 6.

Table 6

t-Tests for Independent Samples – Number of Children in Home by Group Membership (N = 192)

| Number of Children in Home | Number | Mean | SD | Range | | t-Value | Sig |
|----------------------------|--------|------|------|-------|-----|---------|------|
| | | | | Min | Max | | |
| Child with disabilities | 93 | 2.46 | 1.39 | 1 | 6 | 2.84 | .005 |
| Child without disabilities | 97 | 1.95 | 1.09 | 1 | 6 | | |

The results of the comparison of the number of children in the home by group membership was statistically significant, $t(188) = 2.84$, $p = .005$. This result indicated that mothers of children with disabilities ($m = 2.46$, $sd = 1.39$) had a statistically significant greater mean number of children than mothers of children without disabilities ($m = 1.95$, $sd = 1.09$).

The mothers were asked to indicate the diagnosis of their child with a disability. Their responses were summarized using frequency distributions. Table 7 presents results of this analysis.

Table 7

Frequency Distributions – Diagnosis of Child with Disability

| Diagnosis | Number | Percent |
|------------------------------------------|--------|---------|
| Cognitive Impairment/Psychiatric | 39 | 41.9 |
| Cognitive Impairment/Psychiatric/Medical | 28 | 30.1 |
| Cognitive Impairment/Medical | 18 | 19.4 |
| Cognitive Impairment | 8 | 8.6 |
| Total | 93 | 100.0 |

The most common diagnosis was cognitive impairment/psychiatric ($n = 39$, 41.9%), with cognitive impairment without a secondary diagnosis the least common ($n = 8$, 8.6%). Twenty-eight (30.1%) participants indicated their child with a disability had been diagnosed as

cognitively impaired, psychiatric, and medical. Eighteen (19.4%) had a dual diagnosis of cognitive impairment and medical.

The mothers were asked to rate the severity of the disability of the child with a disability using a scale from 1 to 10, with 1 to 3 indicating mild and 8 to 10 indicating severe. Their responses were summarized using frequency distributions. Table 8 presents results of this analysis.

Table 8

Frequency Distributions – Self-reported Ratings of Severity of Disability

| Self-Reported Rating of Severity of Disability | Number | Percent |
|------------------------------------------------|--------|---------|
| Mild (1-3) | 7 | 7.6 |
| Moderate (4 -7) | 42 | 45.1 |
| Severe (8-10) | 44 | 47.3 |
| Total | 93 | 100.0 |

The largest group of mothers ($n = 44$, 47.3%) rated their child's disability as severe, with 42 (45.1%) indicating the rating for their child's disability was moderate. Seven (7.6%) mothers rated their child's disability as mild.

Description of the Scaled Variables

The instruments measuring the scaled variables, depression, stress, parent self-efficacy, parenting satisfaction, and social support, were scored using the author's protocols. To provide baseline information regarding the variables, descriptive statistics were obtained for each variable. The results of this analysis are presented in Table 9.

Table 9

Descriptive Statistics – Scaled Variables

| Scaled Variable | N | Mean | SD | Median | Actual Range | | Possible Range | |
|----------------------------|-----|-------|-------|--------|--------------|---------|----------------|---------|
| | | | | | Minimum | Maximum | Minimum | Maximum |
| Depression | 191 | 13.02 | 10.20 | 11.00 | 0 | 45 | 0 | 63 |
| Child with disabilities | 93 | 13.18 | 9.82 | 11.00 | 0 | 38 | | |
| Child without disabilities | 98 | 12.87 | 10.60 | 11.00 | 0 | 45 | | |
| Stress | 191 | 19.36 | 7.46 | 19.00 | 1 | 40 | 0 | 40 |
| Child with disabilities | 93 | 19.05 | 7.28 | 19.00 | 4 | 33 | | |
| Child without disabilities | 98 | 19.65 | 7.67 | 20.00 | 1 | 40 | | |
| Parental Self-Efficacy | 192 | 31.74 | 5.63 | 32.00 | 14 | 47 | 8 | 48 |
| Child with disabilities | 93 | 31.14 | 5.58 | 32.00 | 14 | 42 | | |
| Child without disabilities | 98 | 32.31 | 5.64 | 33.00 | 20 | 47 | | |
| Parenting Satisfaction | 192 | 36.99 | 8.05 | 38.00 | 9 | 54 | 9 | 54 |
| Child with disabilities | 93 | 35.61 | 8.70 | 37.00 | 9 | 54 | | |
| Child without disabilities | 98 | 38.29 | 7.18 | 39.00 | 16 | 54 | | |
| Social Support | 192 | 33.20 | 15.91 | 30.50 | 2 | 82 | 19 | 95 |
| Child with disabilities | 93 | 34.90 | 17.27 | 31.00 | 2 | 82 | | |
| Child without disabilities | 98 | 31.61 | 14.43 | 29.00 | 4 | 75 | | |

Depression. The mean score for the Beck Depression Scale was 13.02 (sd = 10.20), with a median of 11.00. Mothers of a child with disabilities had a mean score of 13.18 (sd = 9.82), which was comparable to the mean score of 12.87 (sd = 10.60) for mothers of children without disabilities. The actual range of scores for depression was from 0 to 45. Possible scores on this scale could range from 0 to 63, with higher scores indicating greater depression. Scores ranging from 0 to 13 are considered minimal, scores ranging from 14 to 19 are considered mild, scores ranging from 20 to 28 are considered moderate, and scores ranging from 29 to 63 are considered severe.

Stress. The range of actual scores on the Perceived Stress Scale – 10 was from 1 to 40, with a median of 19.00. The mean score on this instrument was 19.36 (sd = 7.46). Mothers of children with disabilities had a mean score of 19.05 (sd = 7.28), while mothers of children without disabilities had a mean score of 19.65 (sd = 7.67). Possible scores on the Perceived Stress Scale could range from 0 to 40, with higher scores indicating greater stress.

Parental Self-Efficacy. The mean score for the Parental Self-Efficacy scale was 31.74 (sd= 5.63), with a median of 32. The mothers of children with disabilities had a mean score of 31.14 (sd = 5.58). In comparison, the mothers of children without disabilities had a mean score of 32.31 (sd = 5.64). The range of actual scores on this scale was from 14 to 47, with possible scores ranging from 8 to 48. Higher scores on this scale are indicative of greater parental self-efficacy.

Parenting Satisfaction. Actual scores for parenting satisfaction ranged from 9 to 54, with a median of 38.00. The mean score on this scale was 36.99 (sd = 8.05). The mean score for mothers of children with disabilities was 35.61 (sd = 8.70). Mothers of children without disabilities had a higher mean score (m = 38.29, sd = 7.18). Possible scores could range from 9 to 54, with higher scores indicating greater parenting satisfaction.

Social Support. The mean score for the Family Support Scale as a measure of social support was 33.20 (sd = 15.91), with a median of 30.50. The mean score for mothers of children with disabilities was 34.90 (sd = 17.27), while mean scores for mothers of children without disabilities had a mean score of 31.61 (sd = 14.43). Actual scores on this scale ranged from 2 to 82, with possible scores ranging from 19 to 95. Higher scores on this scale indicated greater social support.

Research Questions and Hypotheses

Six research questions and related hypotheses were developed for this study. Each hypothesis was tested using inferential statistical procedures, with all decisions on the statistical significance of the findings being based upon a .05 criterion alpha level.

Research Question 1. Do single mothers who report higher levels of stress and depression also report lower levels of parental self-efficacy, parenting satisfaction, and social support?

H₁: Single mothers who report higher levels of stress and depression will report lower levels of parental self-efficacy, parenting satisfaction, and social support than single mothers who report lower levels of stress and depression.

H_{1a}: Single mothers who report higher levels of stress will report lower levels of parental self-efficacy than single mothers who report lower levels of stress.

H_{1b}: Single mothers who report higher levels of stress will report lower levels of parenting satisfaction than single mothers who report lower levels of stress.

H_{1c}: Single mothers who report higher levels of stress will report lower levels of social support than single mothers who report lower levels of stress.

Scores on the three scales measuring parental self-efficacy, parenting satisfaction, and social support were used as dependent variables in a one-way multivariate analysis of covariance (MANCOVA). The independent variable in this analysis was level of stress. Age of the mother, age of the child, number of children and socioeconomic status were used as covariates in this analysis. Stress was dichotomized into high and low levels using a median split of the continuous scores. Table 10 presents the results of the MANCOVA.

Table 10

Multivariate Analysis of Covariance – Parental Self-Efficacy, Parenting Satisfaction, and Social Support by Low and High Stress

| Hotelling's Trace | F Ratio | DF | Sig | Effect Size |
|-------------------|---------|--------|-------|-------------|
| .22 | 13.22 | 3, 177 | <.001 | .18 |

The Hotelling's trace of .22 obtained on the comparison of parental self-efficacy, parenting satisfaction, and social support was statistically significant, $F(3, 177) = 13.22$, $p < .001$, $D = .17$. The effect size of .18 was moderate, indicating that this finding has some practical significance. This finding indicated that a statistically significant difference was found among the three dependent variables between mothers with high and low stress. Age of the child was a statistically significant covariate. Age of the mother, number of children, and socioeconomic

status were not statistically significant as covariates. To determine which of the three dependent variables were contributing to the statistical significance, the univariate F tests were examined.

Table 11 presents results of this analysis.

Table 11

Univariate F Tests - Parental Self-Efficacy, Parenting Satisfaction, and Social Support by Low and High Stress

| Scale | Sum of Squares | DF | Mean Square | F Ratio | Sig | Effect Size |
|------------------------|----------------|--------|-------------|---------|-------|-------------|
| Parental Self-Efficacy | 359.32 | 1, 179 | 359.32 | 12.30 | .001 | .06 |
| Parenting Satisfaction | 1592.62 | 1, 179 | 1592.62 | 30.22 | <.001 | .14 |
| Social Support | 527.70 | 1, 179 | 527.70 | 2.34 | .127 | .01 |

The results of the univariate F test for parental self-efficacy was statistically significant, $F(1, 179) = 12.30, p = .001, D = .06$. While the finding was statistically significant, the small effect size provided evidence that the finding had little practical significance. The comparison of parenting satisfaction between mothers with low and high stress was statistically significant, $F(1, 179) = 30.22, p < .001, D = .14$. The moderate effect size of .14 indicated that the results of this comparison had some practical significance. The finding on the univariate F test for social support was not statistically significant, $F(1, 179) = 2.34, p = .127, D = .01$. To determine the direction of the differences, descriptive statistics were obtained for the three subscales by low and high stress. Table 12 presents results of these analyses.

Table 12

Descriptive Statistics - Parental Self-Efficacy, Parenting Satisfaction, and Social Support by Low and High Stress (Adjusted for Covariates)

| Scale | Number | Mean | SEM |
|------------------------|--------|-------|------|
| Parental Self-Efficacy | | | |
| Low Stress | 83 | 33.25 | .62 |
| High Stress | 108 | 30.37 | .53 |
| Parenting Satisfaction | | | |
| Low Stress | 83 | 40.22 | .83 |
| High Stress | 108 | 34.16 | .72 |
| Social Support | | | |
| Low Stress | 83 | 34.64 | 1.71 |
| High Stress | 108 | 31.15 | 1.48 |

The mean score for parental self-efficacy was significantly higher for mothers with low stress ($m = 33.25$, $sem = .62$) than for mothers with high stress ($m = 30.37$, $sem = .53$). Mothers with low stress ($m = 40.22$, $sem = .83$) had significantly higher scores for parenting satisfaction than mothers with high stress ($m = 34.16$, $sem = .72$). While the difference for social support was not statistically significant, mothers with low stress ($m = 34.64$, $sem = 1.71$) had higher scores than mothers with high stress ($m = 31.15$, $sem = 1.47$). Based on these findings, Hypotheses 1a and 1b are retained and Hypothesis 1c is not retained.

H_{1d}: Single mothers who report higher levels of depression will report lower levels of parental self-efficacy than single mothers who report lower levels of depression.

H_{1e}: Single mothers who report higher levels of depression will report lower levels of parenting satisfaction than single mothers who report lower levels of depression.

H_{1f}: Single mothers who report higher levels of depression will report lower levels of social support than single mothers who report lower levels of depression.

A one-way MANCOVA was used to determine if parental self-efficacy, parenting satisfaction, and social support differed among the mothers relative to their levels of depression. Using the cut-off points for the Beck's Depression Inventory (BDI), the mothers were divided into four groups, from mild to severe. The age of the mother, age of the child, number of

children, and socioeconomic status were used as covariates in this analysis. The results of the MANCOVA are presented in Table 13.

Table 13

Multivariate Analysis of Covariance – Parental Self-Efficacy, Parenting Satisfaction, and Social Support by Levels of Depression

| Hotelling's Trace | F Ratio | DF | Sig | Effect Size |
|-------------------|---------|--------|-------|-------------|
| .26 | 4.99 | 9, 524 | <.001 | .08 |

The Hotelling's trace of .27 obtained on the comparison of parental self-efficacy, parenting satisfaction, and social support by the four levels of depression was statistically significant, $F(9, 524) = 4.99, p < .001, D = .08$. This finding indicated that the three dependent variables differed significantly among the four levels of depression. The effect size of .08 provided evidence that the finding had little practical significance, although the finding was statistically significant. The age of the child was a statistically significant covariate, while the age of the mother, number of children, and socioeconomic status were not statistically significant covariates. To determine which of the dependent variables were contributing to the statistically significant result, the univariate F tests were examined. Results of these analyses are presented in Table 14.

Table 14

Univariate F Tests - Parental Self-Efficacy, Parenting Satisfaction, and Social Support by Levels of Depression

| Scale | Sum of Squares | DF | Mean Square | F Ratio | Sig | Effect Size |
|------------------------|----------------|--------|-------------|---------|-------|-------------|
| Parental Self-Efficacy | 554.49 | 3, 178 | 184.83 | 6.53 | <.001 | .10 |
| Parenting Satisfaction | 1344.29 | 3, 178 | 448.09 | 8.19 | <.001 | .12 |
| Social Support | 148.94 | 3, 178 | 616.32 | 2.81 | .041 | .05 |

The comparison of parental self-efficacy among the four levels of depression was statistically significant, $F(3, 178) = 6.53, p < .001, D = .10$. The results of the analysis comparing parenting satisfaction by levels of depression were statistically significant, $F(3, 178) = 8.19, p < .001, D = .12$. When social support was compared across the four levels of depression, the result was statistically significant, $F(3, 187) = 2.81, p = .041, D = .05$. While parental self-efficacy and parenting satisfaction differed significantly among the four levels of depression, the small effect sizes indicated the findings had little practical significance. To determine which of the levels of depression were contributing to the statistical significant findings, all possible pairwise comparisons were made using Scheffé a posteriori tests. Table 15 provides results of these analyses.

Table 15

Descriptive Statistics - Parental Self-Efficacy, Parenting Satisfaction, and Social Support by Levels of Depression (Adjusted for Covariates)

| Scale | Number | Mean | SEM |
|------------------------|--------|------------------------|------|
| Parental Self-Efficacy | | | |
| Minimal | 107 | 33.02 _{a,b} | .53 |
| Mild | 39 | 29.81 _a | .85 |
| Moderate | 26 | 31.23 | 1.05 |
| Severe | 19 | 28.11 _b | 1.23 |
| Parenting Satisfaction | | | |
| Minimal | 107 | 39.08 _{a,b,c} | .74 |
| Mild | 39 | 35.47 _a | 1.19 |
| Moderate | 26 | 33.96 _b | 1.46 |
| Severe | 19 | 31.33 _c | 1.71 |
| Social Support | | | |
| Minimal | 107 | 34.91 | 1.48 |
| Mild | 39 | 32.63 | 2.38 |
| Moderate | 26 | 30.03 | 2.92 |
| Severe | 19 | 25.75 | 3.41 |

Note: Means in a column sharing a subscript are significantly different. For all measures, higher scores indicate higher scores for parental self-efficacy, parenting satisfaction, and social support.

When the scores for parental self-efficacy were compared, statistically significant differences were found between the minimal level of depression ($m = 33.02$, $sem = .53$) and the mild level of depression ($m = 29.81$, $sem = .85$). A statistically significant difference was also found between the minimal level of depression and the severe level of depression ($m = 28.11$, $sem = 1.23$). Mothers whose depression was considered moderate ($m = 31.23$, $sem = 1.05$) did not differ from the other three levels.

The mothers who had a minimal level of depression ($m = 39.08$, $sem = .74$) had higher mean scores for parenting satisfaction than mothers with a mild level of depression ($m = 35.47$, $sem = 1.19$), mothers with a moderate level of depression ($m = 33.96$, $sem = 1.46$), and mothers with a severe level of depression ($m = 31.33$, $sem = 1.71$). The pairwise comparisons between mild, moderate, and severe levels of depression were not statistically significant.

Although the univariate F tests provided evidence of statistically significant differences for social support, the results of the Scheffé a posteriori tests did not provide any indication of statistically significant differences on the pairwise comparisons. Based on the findings of these analyses, Hypotheses 1d, 1e, and 1f are not retained.

Research Question 2. Do single mothers of children with a developmental disability report higher levels of stress and depression and lower levels of parental self-efficacy, parenting satisfaction, and social support than single mothers of children without a developmental disability?

H₂: There are differences in stress, depression, parental self-efficacy, and parenting satisfaction between single mothers of children with developmental disabilities and single mothers of nondisabled children.

H_{2a}: Single mothers of children with developmental disabilities will report higher levels of stress than single mothers of nondisabled children.

H_{2b}: Single mothers of children with developmental disabilities will report higher levels of depression than single mothers of nondisabled children.

H_{2c}: Single mothers of children with developmental disabilities will report lower levels of parental self-efficacy than single mothers of nondisabled children.

H_{2d}: Single mothers of children with developmental disabilities will report lower levels of parenting satisfaction than single mothers of nondisabled children.

H_{2e}: Single mothers of children with developmental disabilities will report lower levels of social support than single mothers of nondisabled children.

A one-way MANCOVA was used to determine if a statistically significant difference existed between single mothers of children with developmental disabilities and single mothers of nondisabled children on depression, stress, parental self-efficacy, parenting satisfaction, and social support. The covariates in this analysis were age of the mother, age of the child, number of children, and socioeconomic status. The results of this analysis are presented in Table 16.

Table 16

Multivariate Analysis of Covariance – Depression, Stress, Parental Self-Efficacy, Parenting Satisfaction, and Social Support by Group Membership

| Hotelling's Trace | F Ratio | DF | Sig | Effect Size |
|-------------------|---------|--------|------|-------------|
| .04 | 1.36 | 5, 175 | .243 | .04 |

The Hotelling's trace of .04 obtained on the comparison of depression, stress, parental self-efficacy, parenting satisfaction, and social support between single mothers of children with developmental disabilities and single mothers of nondisabled children was not statistically significant, $F(5, 175) = .24, p = .243, D = .04$. This finding indicated no differences in the dependent variables by group membership. The age of the mother and number of children were statistically significant covariates, with the age of the child and socioeconomic status not statistically significant. To further examine the lack of statistically significant differences, descriptive statistics were obtained for the variables included in the analysis. Results of these analyses are presented in Table 17.

Table 17

Descriptive Statistics – Depression, Stress, Parental Self-Efficacy, Parenting Satisfaction, and Social Support by Group Membership (Adjusted for Covariates)

| Scale | Number | Mean | SEM |
|------------------------------------------------------------|--------|-------|------|
| Depression | | | |
| Single mothers of children with developmental disabilities | 93 | 31.52 | .62 |
| Single mothers of nondisabled children | 97 | 31.69 | .62 |
| Stress | | | |
| Single mothers of children with developmental disabilities | 93 | 19.02 | .81 |
| Single mothers of nondisabled children | 97 | 19.90 | .81 |
| Parental Self-Efficacy | | | |
| Single mothers of children with developmental disabilities | 93 | 13.21 | 1.13 |
| Single mothers of nondisabled children | 97 | 13.46 | 1.13 |
| Parenting Satisfaction | | | |
| Single mothers of children with developmental disabilities | 93 | 35.89 | .86 |
| Single mothers of nondisabled children | 97 | 37.63 | .75 |
| Social Support | | | |
| Single mothers of children with developmental disabilities | 93 | 34.20 | 1.66 |
| Single mothers of nondisabled children | 97 | 31.09 | 1.66 |

The differences in the mean scores between the two groups of mothers were minimal.

Based on the findings of these analyses, Hypotheses 2a, 2b, 2c, 2d, and 2e were not retained.

Research Question 3. Does the presence of a child that is developmentally disabled moderate the relationships between stress and parental self-efficacy, parenting satisfaction, social support, and depression?

H₃: Having a child that is developmentally disabled will moderate the relationships between stress and parental self-efficacy, parenting satisfaction, social support, and depression.

Separate multiple regressions were performed to determine if there was a statistically significant moderating effect by Group (mothers of a child with a disability and mothers of a child with no disability) using the interaction between Group and the predictor variables. A significant interaction term in any of the regression equations provided evidence of a significant moderation effect.

H_{3a}: Having a child that is developmentally disabled will moderate the relationship between stress and parental self-efficacy.

H_{3b}: Having a child that is developmentally disabled will moderate the relationship between stress and parenting satisfaction.

H_{3c}: Having a child that is developmentally disabled will moderate the relationship between stress and social support.

H_{3d}: Having a child that is developmentally disabled will moderate the relationship between stress and depression.

The first set of moderating analyses used parental self-efficacy, parenting satisfaction, social support, and depression as the criterion variables. Stress was used as the predictor variable, with group membership used as the moderating variable. Table 18 presents the results of the moderating analyses using stress as the moderating variable.

Table 18

Moderation Analysis – Stress as the Predictor Variable

| Group moderates stress, predicting | b | SE _b | β |
|------------------------------------|------|-----------------|---------|
| Parental self-efficacy | .07 | .04 | .20 NS |
| Parenting Satisfaction | .18 | .05 | .34** |
| Social Support | -.17 | .11 | -.17NS |
| Depression | -.03 | .05 | -.05 NS |

** $p \leq .01$, * $p \leq .05$

The results of the moderating analysis provided evidence of a statistically significant moderation effect of group and stress on parenting satisfaction, $b = .18$, $SE_b = .05$, $\beta = .34$, $p < .001$. The other analyses were not statistically significant, indicating that group membership was not moderating the relationship between the criterion and predictor variables. Based on these findings, Hypothesis 3b is retained and null hypotheses 3a, 3c, and 3d are not retained.

Research Question 4. Does the presence of a child that is developmentally disabled moderate the relationships between depression and parental self-efficacy, parenting satisfaction, social support, and stress?

- H₄: Having a child that is developmentally disabled will moderate the relationships between depression and parental self-efficacy, parenting satisfaction, social support, and stress.
- H_{4a}: Having a child that is developmentally disabled will moderate the relationship between depression and parental self-efficacy.
- H_{4b}: Having a child that is developmentally disabled will moderate the relationship between depression and parenting satisfaction.
- H_{4c}: Having a child that is developmentally disabled will moderate the relationship between depression and social support.
- H_{4d}: Having a child that is developmentally disabled will moderate the relationship between depression and stress.

Group membership was used as the moderating variable in the multiple regression analyses used to test the relationship between the criterion variables (parental self-efficacy, parenting satisfaction, social support, stress) and depression as the predictor variable. Table 19 presents results of this analysis.

Table 19

Moderation Analysis – Depression as the Predictor Variable

| Group moderates depression, predicting | b | SE _b | β |
|----------------------------------------|------|-----------------|---------|
| Parental self-efficacy | -.21 | .14 | -.23 NS |
| Parenting Satisfaction | .04 | .05 | .10 NS |
| Social Support | .07 | .05 | .22 NS |
| Stress | .11 | .06 | .24 NS |

** $p \leq .01$, * $p \leq .05$

The results of the moderating analyses were not statistically significant, indicating that group membership was not moderating the relationships between depression and the four criterion variables, parental self-efficacy, parenting satisfaction, social support or stress. Based on these findings, the four Hypotheses (4a, 4b, 4c, and 4d) were not retained.

Research Question 5. Does the presence of a child that is developmentally disabled moderate the relationships between social support and parental self-efficacy, parenting satisfaction, stress, and depression?

H₅: Having a child that is developmentally disabled will moderate the relationships between social support and parental self-efficacy, parenting satisfaction, depression, and stress.

H_{5a}: Having a child that is developmentally disabled will moderate the relationship between social support and parental self-efficacy.

H_{5b}: Having a child that is developmentally disabled will moderate the relationship between social support and parenting satisfaction.

H_{5c}: Having a child that is developmentally disabled will moderate the relationship between social support and depression.

H_{5d}: Having a child that is developmentally disabled will moderate the relationship between social support and parental stress.

Social support was used as the predictor variable in a set of moderating analyses. The criterion variables included parental self-efficacy, parenting satisfaction, depression, and stress. The results of these analyses are presented in Table 20.

Table 20

Moderation Analysis – Social Support as the Predictor Variable

| Group moderates social support, predicting | b | SE _b | β |
|--------------------------------------------|------|-----------------|---------|
| Parental self-efficacy | .05 | .02 | .24* |
| Parenting Satisfaction | .08 | .03 | .29** |
| Depression | -.04 | .04 | -.11 NS |
| Stress | -.01 | .03 | -.03 NS |

** $p \leq .01$, * $p \leq .05$

Two of the four regression analyses testing the moderating effect of group membership on the relationship between the criterion variables and social support as the predictor variable were statistically significant. Group membership was significantly moderating the relationship

between social support and parental self-efficacy, $b = .05$, $SE_b = .02$, $\beta = .24$, $p = .028$. The relationship between social support and parenting satisfaction was also significantly moderated by group membership, $b = .08$, $SE_b = .03$, $\beta = .29$, $p = .008$. Based on these findings, Hypotheses 5a and 5b were retained and Hypotheses 5c and 5d were not retained.

Research Question 6. Can stress, depression, parental self-efficacy, and parenting satisfaction for single mothers with and without children with disabilities be predicted from socioeconomic status, social support, age of the mother, age of the selected child, total number of children in the home, history of psychiatric or psychological care within the last 12 months, diagnosis type of the child with a disability, maternal rating of the severity of the child's disability, and years of formalized services for the child with a disability?

- H₆: Stress, depression, parental self-efficacy, and parenting satisfaction can be predicted for single mothers with and without children with disabilities from socioeconomic status, social support, age of the mother, age of the selected child, total number of children in the home, history of psychiatric or psychological care within the last 12 months, diagnosis type of the child with a disability, maternal rating of the severity of the child's disability, and years of formalized services for the child with a disability.
- H_{6a}: Stress levels of single mothers can be predicted from the predictor variables listed relative to H₆.
- H_{6b}: Depression levels of single mothers can be predicted from the predictor variables listed relative to H₆.
- H_{6c}: Parental self-efficacy levels of single mothers can be predicted from the predictor variables listed relative to H₆.
- H_{6d}: Parenting satisfaction of single mothers can be predicted from the predictor variables listed relative to H₆.

Pearson product moment correlations were used to determine which of the predictor variables (socioeconomic status, social support, age of the mother, age of the selected child, total number of children in the home, history of psychiatric or psychological care within the last 12 months, diagnosis type of the child with a disability, maternal rating of the severity of the child's disability, and years of formalized services for the child with a disability) were significantly related to the criterion variables, depression, stress, parental self-efficacy, and parenting satisfaction. Because three of the predictor variables (diagnosis type of the child with a disability,

maternal rating of the severity of the child's disability, and years of formalized services for the child with a disability) were specific to the mothers of children with disabilities, each of the groups was analyzed separately. Table 21 presents the results of the correlations for mothers of children with disabilities.

Table 21

Pearson Product Moment Correlations: Stress, Depression, Parental Self-Efficacy, and Parenting Satisfaction with Predictor Variables (Mothers of Children with Disabilities)

| Predictor Variables | <u>Stress</u> | | <u>Depression</u> | | <u>Parental Self-efficacy</u> | | <u>Parenting Satisfaction</u> | |
|--------------------------------------------------------|---------------|------|-------------------|------|-------------------------------|------|-------------------------------|------|
| | r | p | r | p | r | p | r | p |
| Social support | -.10 | .321 | -.16 | .121 | .11 | .296 | .11 | .278 |
| Socioeconomic status | -.06 | .563 | -.17 | .107 | -.05 | .636 | .17 | .097 |
| Age of mother | -.07 | .537 | -.02 | .826 | -.01 | .910 | -.01 | .924 |
| Age of disabled child | -.16 | .122 | -.07 | .525 | -.02 | .830 | .03 | .749 |
| Total number of children in home | .25 | .014 | .12 | .237 | -.15 | .150 | -.29 | .006 |
| Received psychiatric services in last year | -.32 | .002 | -.23 | .030 | -.05 | .670 | .24 | .022 |
| Diagnosis groups | .09 | .391 | .14 | .181 | -.10 | .350 | -.03 | .763 |
| Mother's perceptions of severity of child's disability | .16 | .118 | .14 | .193 | -.11 | .299 | -.01 | .897 |
| Number of years receiving formalized services | -.34 | .001 | -.15 | .142 | .15 | .153 | .21 | .045 |

Three of the predictor variables, total number of children in home ($r = .25$, $p = .014$), received psychiatric services in last year ($r = .32$, $p = .002$), and number of years receiving formalized services ($r = -.34$, $p = .001$), were significantly correlated with stress. A statistically significant correlation was obtained for the relationship between depression and received psychiatric services in last year ($r = -.23$, $p = .030$). None of the predictor variables were correlated with parental self-efficacy. Statistically significant correlations were found between

parenting satisfaction and total number of children in home ($r = -.29, p = .006$), received psychiatric services in last year ($r = .24, p = .023$), and number of years receiving formalized services ($r = .21, p = .045$). These variables will be used in stepwise multiple linear regression analysis to test the associated hypotheses.

Pearson product moment correlations were used to test the relationship between the same set of predictor variables and stress, depression, parental self-efficacy, and parenting satisfaction among mothers of children without a developmental disability. The results of this analysis are presented in Table 22.

Table 22

Pearson Product Moment Correlations: Stress, Depression, Parental Self-Efficacy, and Parenting Satisfaction with Predictor Variables (Mothers of Children without Disabilities)

| Predictor Variables | <u>Stress</u> | | <u>Depression</u> | | <u>Parental Self-efficacy</u> | | <u>Parenting Satisfaction</u> | |
|--------------------------------------------|---------------|------|-------------------|------|-------------------------------|------|-------------------------------|------|
| | r | p | r | p | r | p | r | p |
| Social support | -.24 | .019 | -.29 | .004 | .28 | .005 | .23 | .023 |
| Socioeconomic status | -.15 | .155 | -.30 | .003 | -.04 | .726 | .21 | .036 |
| Age of mother | <.01 | .974 | .04 | .706 | -.20 | .049 | .01 | .909 |
| Age of child | -.02 | .818 | -.07 | .531 | -.09 | .380 | .02 | .818 |
| Total number of children in home | .07 | .510 | .07 | .520 | -.06 | .580 | <-.01 | .982 |
| Received psychiatric services in last year | .02 | .878 | -.17 | .100 | .03 | .797 | -.04 | .718 |

One statistically significant correlation was obtained between stress and social support ($r = -.24, p = .019$). When depression was correlated with the predictor variables, two statistically significant results were obtained. These significant correlations were for social support ($r = -.29, p = .004$) and socioeconomic status ($r = -.30, p = .003$). The relationships between parental self-efficacy and social support ($r = .28, p = .005$) and age of mother ($r = -.20, p = .049$) were

statistically significant. Parenting satisfaction was significantly related to social support ($r = .23$, $p = .023$ and socioeconomic status ($r = .21$, $p = .036$).

H_{6a}: Stress levels of single mothers can be predicted from the predictor variables listed relative to H6.

The statistically significant predictor variables were used in separate stepwise multiple linear regression analyses to test the hypotheses. Three predictor variables used in this analysis included number of years receiving formalized services, received psychiatric services within the last year, and total number of children in home. Table 23 presents results of the analysis for stress as the criterion variable.

Table 23

Stepwise Multiple Linear Regression Analysis – Stress (Mothers of Children with Developmental Disabilities)

| Predictor Variables | Constant | B | β | ΔR^2 | t | Sig |
|------------------------------------------------|----------|-------|---------|--------------|-------|------|
| <u>Included Variables</u> | | | | | | |
| Number years receiving formalized services | 31.33 | -.39 | -.23 | .11 | -2.34 | .021 |
| Received psychiatric services within past year | | -6.26 | -.28 | .06 | -2.90 | .005 |
| Total number of children in home | | 1.16 | .22 | .05 | 2.31 | .023 |
| Multiple R | .47 | | | | | |
| Multiple R ² | .22 | | | | | |
| F Ratio | 8.50 | | | | | |
| DF | 3, 89 | | | | | |
| Sig | <.001 | | | | | |

The three predictor variables entered the stepwise multiple linear regression equation, explaining 22% of the variance in stress, $R^2 = .22$, $F(3, 89) = 8.50$, $p < .001$. Number of years receiving formalized services entered the stepwise multiple linear regression equation first, accounting for 11% of the variance in stress, $r^2 = .11$, $\beta = -.23$, $t = -2.34$, $p = .021$. An additional 6% of the variance in stress was explained by received psychiatric services within the past year,

$r^2 = .06$, $\beta = -.28$, $t = -2.90$, $p = .005$. The total number of children in the home was accounting for 5% of the variance in stress, $r^2 = .05$, $\beta = .22$, $t = 2.31$, $p = .023$. Stress was negatively related to number of years receiving formalized services, indicating that lower stress levels were associated with more years of receiving formalized services. The negative relationship between receiving psychiatric services within the past year and stress indicated that mothers of children with disabilities who had received psychiatric services within the past year were more likely to have higher levels of stress. The positive relationship between stress and the number of children in the home provided support that mothers who had more children were more likely to have higher levels of stress.

One statistically significant correlation was obtained between stress reported by mothers of nondisabled children and social support ($r = -.24$, $p = .019$). Social support was accounting for 4% of the variance in stress for these mothers.

H_{6b}: Depression levels of single mothers can be predicted from the predictor variables listed relative to H6.

One statistically significant correlation was obtained between depression as the criterion variable and received psychiatric services in last year for mothers of children with developmental disabilities ($r = -.23$, $p = .030$). Based on this finding, 5% of the variance in depression was accounted for by receiving psychiatric services in the last year.

Two predictor variables, social support and socioeconomic status, were used in a stepwise multiple linear regression analysis. The criterion variable was depression as reported by mothers of nondisabled children. Table 24 provides results of this analysis.

Table 24

Stepwise Multiple Linear Regression Analysis – Depression (Mothers of Nondisabled Children)

| Predictor Variables | Constant | B | β | ΔR^2 | t | Sig |
|---------------------------|----------|------|---------|--------------|-------|------|
| <u>Included Variables</u> | | | | | | |
| Socioeconomic status | 27.30 | -.26 | -.29 | .09 | -3.07 | .003 |
| Social support | | -.20 | -.28 | .07 | -2.96 | .004 |
| Multiple R | .41 | | | | | |
| Multiple R ² | .16 | | | | | |
| F Ratio | 9.42 | | | | | |
| DF | 2, 96 | | | | | |
| Sig | <.001 | | | | | |

The two predictor variables, socioeconomic status and social support, entered the stepwise multiple linear regression analysis for mothers of nondisabled children, accounting for 16% of the variance in depression, $R^2 = .16$, $F(2, 96) = 9.42$, $p < .001$. Socioeconomic status entered the stepwise multiple linear regression equation first, explaining 9% of the variance in depression, $r^2 = .09$, $\beta = -.29$, $t = -3.07$, $p = .003$. The negative relationship indicated that higher scores on depression were associated with lower socioeconomic levels. Social support entered the regression equation, accounting for an additional 7% of the variance in depression. Higher scores for social support were indicative of lower levels of depression. As a result of these findings the null hypothesis of no relationship was rejected.

H_{6c}: Parental self-efficacy levels of single mothers can be predicted from the predictor variables listed relative to H6.

None of the predictor variables were correlated with parental self-efficacy for mothers of children with developmental disabilities. As a result, the planned stepwise multiple linear regression analysis could not be completed.

Two predictor variables, social support and age of the mother, were significantly correlated with the criterion variable, parental self-efficacy for mothers of nondisabled children.

These predictor variables were used in a stepwise multiple linear regression analysis, with parental self-efficacy used as the criterion variable. Table 25 presents results of these analyses.

Table 25

Stepwise Multiple Linear Regression Analysis – Parental Self-Efficacy (Mothers of Nondisabled Children)

| Predictor Variables | Constant | B | β | ΔR^2 | t | Sig |
|---------------------------|----------|------|---------|--------------|-------|------|
| <u>Included Variables</u> | | | | | | |
| Social support | 33.54 | .12 | .30 | .08 | 3.11 | .002 |
| Age of mothers | | -.14 | -.22 | .05 | -2.27 | .025 |
| Multiple R | .36 | | | | | |
| Multiple R ² | .13 | | | | | |
| F Ratio | 6.93 | | | | | |
| DF | 2, 96 | | | | | |
| Sig | .002 | | | | | |

The two predictor variables, social support and age of mother, entered the stepwise multiple linear regression equation, accounting for 13% of the variance in parental self-efficacy, $R^2 = .13$, $F(2, 96) = 6.93$, $p = .002$. Social support entered the stepwise multiple linear regression equation first, accounting for 8% of the variance in parental self-efficacy for mothers of nondisabled children, $r^2 = .08$, $\beta = .30$, $t = 3.11$, $p = .002$. Higher levels of social support were associated with higher levels of parental self-efficacy. An additional 5% of the variance in parental self-efficacy was explained by age of the mother, $r^2 = .05$, $\beta = -.22$, $t = -2.27$, $p = .025$. Based on this finding, it appears that younger mothers had higher levels of parental self-efficacy.

As a result of nonsignificant findings for mothers of children with developmental disabilities and statistically significant findings for mothers of nondisabled children, no decision could be made on the null hypothesis of no relationship between the predictor variables and parental self-efficacy.

H_{6d}: Parenting satisfaction of single mothers can be predicted from the predictor variables listed relative to H6.

Three predictor variables, total number of children in the home, received psychiatric services in last year, and number of years receiving formalized services, were used as predictor variables in a stepwise multiple linear regression analysis. Parenting satisfaction was used as the criterion variable in this analysis. Table 26 presents results of this analysis.

Table 26

Stepwise Multiple Linear Regression Analysis – Parenting Satisfaction (Mothers of Children with Disabilities)

| Predictor Variables | Constant | B | β | ΔR^2 | t | Sig |
|------------------------------------------------|----------|-------|---------|--------------|-------|------|
| <u>Included Variables</u> | | | | | | |
| Total number of children in home | 27.49 | -1.87 | -.30 | .08 | -3.06 | .003 |
| Received psychiatric services within last year | | 6.77 | .25 | .06 | 2.59 | .011 |
| <u>Excluded Variables</u> | | | | | | |
| Number of years receiving formalized services | | | .10 | | .99 | .327 |
| Multiple R | .38 | | | | | |
| Multiple R ² | .14 | | | | | |
| F Ratio | 7.65 | | | | | |
| DF | 2, 90 | | | | | |
| Sig | .001 | | | | | |

Two predictor variables, total number of children in the home and received psychiatric services within the last year, entered the stepwise multiple linear regression equation, accounting for 14% of the variance in parenting satisfaction, $R^2 = .14$, $F(2, 90) = 7.65$, $p = .001$. The total number of children in the home entered the stepwise multiple linear regression equation first, accounting for 8% of the variance in parenting satisfaction, $r^2 = .08$, $\beta = -.30$, $t = -3.06$, $p = .003$. This finding provided support that mothers of children with developmental disabilities who had more children were less likely to have high scores for parenting satisfaction. An additional 6% of

the variance in parenting satisfaction was explained by receiving psychiatric services within the last year, $r^2 = .06$, $\beta = .25$, $t = 2.59$, $p = .011$. This finding indicated that mothers of children with developmental disabilities who had not received psychiatric services within the past year were more likely to have higher levels of parenting satisfaction. The number of years receiving formalized services did not enter the stepwise multiple linear regression equation, indicating it was not a statistically significant predictor of parenting satisfaction.

Parenting satisfaction of mothers with nondisabled children was used as the criterion variable in a stepwise multiple linear regression analysis. Social support and socioeconomic status were used as the predictor variables in this analysis. The result of the analysis are presented in Table 27.

Table 27

Stepwise Multiple Linear Regression Analysis – Parenting Satisfaction (Mothers of Nondisabled Children)

| Predictor Variables | Constant | B | β | ΔR^2 | t | Sig |
|---------------------------|----------|-----|---------|--------------|------|------|
| <u>Included Variables</u> | | | | | | |
| Social support | 30.94 | .11 | .22 | .05 | 2.27 | .025 |
| Socioeconomic status | | .13 | .20 | .04 | 2.08 | .040 |
| Multiple R | .31 | | | | | |
| Multiple R ² | .09 | | | | | |
| F Ratio | 4.93 | | | | | |
| DF | 2, 96 | | | | | |
| Sig | .009 | | | | | |

A total of 9% of the variance in parenting satisfaction for mothers of nondisabled children was explained by social support and socioeconomic status, $R^2 = .09$, $F(2, 96) = 4.93$, $p = .009$. Social support entered the stepwise multiple linear regression equation first, accounting for 5% of the variance in parenting satisfaction, $r^2 = .05$, $\beta = .22$, $t = 2.27$, $p = .025$. Mothers of nondisabled children who had higher levels of social support were more likely to higher levels of

parenting satisfaction. Socioeconomic status entered the regression equation accounting for an additional 4% of the variance in parenting satisfaction, $r^2 = .04$, $\beta = .20$, $t = 2.08$, $p = .040$. Mothers of nondisabled children with higher socioeconomic statuses were more likely to have higher levels of parenting satisfaction.

The results of these analyses provided support to reject the null hypothesis of no relationship between the predictor variables and parenting satisfaction for both mothers of children with developmental disabilities and mothers of nondisabled children.

Summary

The findings of the statistical analyses that were used to provide a description of the sample and address the research questions have been presented in this chapter. A discussion of the findings and recommendations for further study are included in Chapter 5.

CHAPTER 5

SUMMARY, DISCUSSION, LIMITATIONS, IMPLICATIONS, AND RECOMMENDATIONS

Summary of the Study

The majority of previous research has found that parents of children with disabilities are generally more stressed than parents of children without disabilities (e.g., Scott, Atkinson, Minton, & Bowman, 1997; Singer & Irvin, 1991). Previous research on single mothers has also demonstrated that single mothers are generally more prone to stress and depression than married mothers (Wang, 2004; Peden, Rayens, Hall, & Grant, 2005). There has been comparatively little research conducted within the area of single mothers of children with developmental disabilities, particularly when comparing them to single mothers of children without developmental disabilities. The purpose of the present study was to ascertain whether having a child with a disability made a measurable difference among single mothers among the variables studied. The primary objective was to obtain a better understanding of the influence of having a child with a developmental disability among single mothers on measures of stress, depression, social support, parental self-efficacy, and parenting satisfaction. Relationships among the variables were examined using the sample of single mothers as a single group before dichotomizing the sample into single mothers of children with developmental disabilities and single mothers of children without developmental disabilities. Comparisons were then made between the two groups on measures of stress, depression, parental self-efficacy, and parenting satisfaction. Parenting a child with a developmental disability was then used as a moderating variable to examine the relationships between the predictor variables and the various criterion variables. Finally, numerous predictor variables were used in stepwise multiple regressions to predict stress, depression, parental self-efficacy and parenting satisfaction among single mothers with and without children with developmental disabilities.

This study sought to add information to a scant literature base regarding single mothers of children with developmental disabilities by comparing them to single mothers with children that are not developmentally disabled. A strength of this study was its use of an economically diverse sample, as opposed to most studies that rely on predominantly middle-class, Caucasian participants. This study also had a fairly large sample size (N=192) and examined variables (parental self-efficacy and parenting satisfaction) not commonly studied among single mothers or mothers of children with developmental disabilities. In this chapter, important findings are described, as well as their implications. This chapter concludes by pointing out the limitations of the present study and suggesting related areas for future research.

Six instruments were used in this study. Stress levels were measured using the Perceived Stress Scale-10 developed by Cohen (1983). The Beck Depression Inventory-Second Edition (BDI-II) developed by Beck, Steer, and Brown (1996) was used to assess the severity of depression symptoms of the participants in this study. Parental self-efficacy and parenting satisfaction were assessed using the Parenting Sense of Competence scale developed by Gibaud-Wallston and Wandersman (1978). Social support was measured using the Family Support Scale developed by Dunst, Jenkins, and Trivette (1984). An original demographic survey was developed by the researcher to obtain personal information about the participants. Some of the demographic information from this survey was used to formulate socioeconomic scores for the participants utilizing the Four-Factor Index of Social Status developed by Hollingshead (1975).

Discussion

A total of 192 single mothers with and without children with developmental disabilities participated in this study, including 93 mothers of children with a developmental disability and 99 mothers of children without a developmental disability. Mothers of children with a developmental disability were recruited from a clinic in Detroit, Michigan providing services to

developmentally disabled individuals and their families. Mothers of children without developmental disabilities were recruited through local settings and businesses in the Metropolitan Detroit area with the aid of a research participant via snowball recruiting techniques. The name and phone number of the principal researcher was also provided on the information sheet within the packets given to potential participants so that interested parties could contact the researcher and address any questions or concerns. The principal researcher made arrangements to mail the research packet to their home with a self-addressed, stamped, return envelope for them to mail the packet back once it was completed if a face-to-face meeting to fill out the packet was not possible.

In order to be considered “single” for the purposes of the present study, participants had to be never married, or divorced, separated, or widowed, with no live-in romantic partner. Furthermore, they had to be living with at least one biological child between the age of 5 and 17 years in the home. Mothers of children with developmental disabilities had to have a biological child with a disability that met the age criterion living at home.

There were two main groups of participants used in this study: single mothers of children with developmental disabilities and single mothers with children without developmental disabilities. These two groups were compared on each of the demographic variables, including age, age of their child upon which their responses are based, marital status, ethnicity, educational level, socioeconomic status as measured by Hollingshead categories, reception of psychiatric/psychological services, and number of children in their home. The two groups were also compared on stress, depression, parental self-efficacy, parenting satisfaction, and social support.

Group Demographic Comparisons

Participants were placed into two groups based upon whether or not they were the mother of a child with a developmental disability. The mean age of the group with a developmentally disabled child was 40.19 (sd=7.53) years, with the ages ranging from 22.75 to 60.99 years. The mean age of the group without a child with a developmental disability was 34.64 (sd=8.71) years, with ages ranging from 20.25 to 59.50 years. The mean age of the child for the group of mothers with a child with a developmental disability was 12.92 (sd=3.63) years, with ages ranging from 5.00 to 17.99 years. The mean age of the child for the group of mothers with a child without a developmental disability was 9.88 (sd=3.85) years, with ages ranging from 5.00 to 17.99 years. The majority of the participants were African-American (68.9%), including 93.5% of the group with a child with a developmental disability and 45.9% of the group with a child without a developmental disability. The majority of the participants had at least some college in their educational background, with 41.8% reporting taking at least one college-level course. The majority of the participants, 34.9%, were in the lower middle class of socioeconomic status. The majority of the participants did not receive psychiatric or psychological services within the last 12 months, with 88% reporting not receiving services. No statistically significant differences were found between the two groups for educational level or receiving psychiatric or psychological services within the last 12 months.

Group membership was significantly associated with the age of the mother and the age of the child, indicating that mothers with children with developmental disabilities were significantly older than mothers of children without developmental disabilities, and children with developmental disabilities were significantly older than children without developmental disabilities. Ethnicity was not independent of group membership, as there were significantly more African-Americans in the group of mothers with children with developmental disabilities

as compared to the group of mothers of children without developmental disabilities. Socioeconomic status was not independent of group membership, as significantly more mothers of children with developmental disabilities fell into the lower class of socioeconomic status than mothers of children without developmental disabilities. Group membership was significantly associated with number of children in the home, as mothers of children with disabilities reported more children in the home for whom they were responsible than mothers of children without developmental disabilities. Because of the significant differences between the groups in age of the mother, age of the child, number of children in the home, and socioeconomic status, these four variables were used as covariates to take into account their differences when considering the significance of the results obtained.

Research Questions and Hypotheses

The first research question focused on identifying differences in parental self-efficacy, parenting satisfaction, and social support between the mothers who reported higher levels of stress and depression versus those who scored lower on stress and depression, among mothers with and without a child with a developmental disability. Because of the significant differences between the two groups of mothers in regard to age of the mother, age of the child, number of children in the home, and socioeconomic status, these four variables were used as covariates. The first three hypotheses maintained that single mothers who scored higher in stress would score lower in parental self-efficacy, parenting satisfaction, and social support than single mothers who scored lower in stress. The MANCOVA computed for differences in parental self-efficacy, parenting satisfaction, and social support showed both statistical and practical significance. Age of the child was found to be a significant covariate, but not the age of the mother, socioeconomic status, or the number of children in the home. Findings for the first hypothesis indicated that the difference in parental self-efficacy between mothers high in stress

versus those low in stress was statistically significant. Other studies have supported a significant link between stress and parenting self-efficacy (Wells-Parker, Miller, & Topping, 1990). The second hypothesis was statistically and practically significant, with mothers high in stress having lower parenting satisfaction than mothers low in stress. This is not entirely surprising, as previous research (Hassall, Rose, & McDonald, 2005) has shown that parenting satisfaction can have a significant impact upon stress among parents. The third hypothesis found that there was not a significant difference in social support between mothers high in stress compared to mothers low in stress, which was not expected, considering the findings of previous research that has linked stress and social support (Armstrong, Fraser, Dadds, & Morris, 1999; Cairney, Boyle, Offord, & Racine, 2003). However, in this particular study social support could not account for differences in stress. Parental self-efficacy and parenting satisfaction were more relevant to stress levels among single mothers than social support.

Interestingly, the multiple regressions for the sixth set of hypotheses indicated that social support was not a significant predictor of stress (or any other of the criterion variables) among mothers of children with developmental disabilities, but it was the only significant predictor of stress for mothers of nondisabled children, despite the fact that it only accounted for 4% of the variance. Social support was in fact a significant predictor of depression, parental self-efficacy, and parenting satisfaction among the group of mothers with no disabled children as well for the sixth hypothesis. It may very well be the case that single mothers, particularly single mothers of children with disabilities, are more accustomed to their level of social support and therefore higher stress levels are not readily associated with social support but rather more interpersonal variables such as parenting satisfaction and parental self-efficacy. The data collected from both groups of mothers combined for the first hypothesis may have nullified any significant result that would have indicated that single mothers with higher stress levels have less social support. Stress

levels may have been more dependent upon levels of social support for mothers of children without disabilities.

The second set of hypotheses pertaining to the first research question maintained that single mothers who scored higher in depression would score lower in parental self-efficacy, parenting satisfaction, and social support than single mothers who scored lower in depression. Once again, age of the mother, age of the child, socioeconomic status, and number of children in the home were used as covariates and only the age of the child was a significant covariate. Findings indicated that overall differences for parental self-efficacy, parenting satisfaction, and social support had statistical significance but little practical significance. Findings for the fourth hypothesis indicated that parental self-efficacy was significantly different among the levels of depression, with differences found when comparing the lowest level of depression (Minimal) to the second lowest level of depression (Mild) and the highest level of depression (Severe). The small effect size indicated little practical significance for this finding, however there has been research that has shown adverse effects of depression on parenting capabilities (Hays, Well Sherbourne, Rogers, & Spitzer, 1995), as well as maternal depression being linked to child behavior problems (Abbeduto, Seltzer, Shattuck, Kraus, Orsmond, & Murphy, 2004), which could negatively impact parental self-efficacy. Results for the fifth hypothesis also found significant differences in parenting satisfaction between the levels of depression (Minimal compared to Mild, Moderate, and Severe), but again with a small effect size with little practical significance. Findings for the sixth hypothesis did not yield significant differences in social support across the four designated levels of depression, which is not consistent with previous research (Manuel, Naughton, Balkrishnan, Smith, & Koman, 2003). It appears that among single mothers, differences in parental self-efficacy and parenting satisfaction were more relevant to depression and stress levels than social support. Because mothers of children with developmental

disabilities had to specifically use the age of their child with a disability for participation in this study as opposed to another child in the household, the age of the child with a disability may also be a relevant variable in determining depression and stress as a result of being a significant covariate.

The results indicated that there was at least partial support for some of the hypotheses related to the first research question. Parental self-efficacy and parenting satisfaction were found to be significantly lower among single mothers with and without children with developmental disabilities who reported higher levels of stress and depression. Interestingly, social support was not significantly related to either stress or depression levels. This seemed to imply that social support is not as strongly related to stress and depression as parenting satisfaction and parental self-efficacy among single mothers. This may have partially been due to the sense of resignation single mothers feel regarding their limited social opportunities and the exaggerated role they assume as caregivers of their children. This also seemed to imply that single mothers lower in stress and depression had a better chance of having higher levels of perceived capabilities as parents, as well as higher levels of satisfaction derived from their role as parents.

The second research question examined differences in stress, depression, parental self-efficacy, parenting satisfaction, and social support between single mothers with a child with a developmental disability and single mothers with a child that does not have a developmental disability. Age of the mother, age of the child, and number of children in the home were used as covariates due to the significant differences between the groups on these variables. The five hypotheses predicted that single mothers of children with developmental disabilities would report higher levels of stress (H_{2a}), higher levels of depression (H_{2b}), lower levels of parental self-efficacy (H_{2c}), lower levels of parenting satisfaction (H_{2d}), and lower levels of social support (H_{2e}) than single mothers of children without a developmental disability. No significant

differences were found between the two groups on these measures. The age of the mother and the number of children in the home were statistically significant covariates, but not the age of the child. This would suggest that among single mothers, their age and the number of children in the home have more influence on levels of stress, depression, parental self-efficacy, parenting satisfaction, and social support than whether or not one of the children in the home has a developmental disability. Any differences on these measures would be better accounted for by the age of mother and the number of children in the home rather than the age of the child(ren) or whether or not he or she has a developmental disability.

The findings that single mothers of children with developmental disabilities are not significantly more stressed or depressed, and do not have less parental self-efficacy, parenting satisfaction, or social support than single mothers of children without disabilities was noteworthy, as the majority of previous research would suggest otherwise. There have been numerous studies that have demonstrated that mothers of children with disabilities have higher levels of stress than mothers of nondisabled children (Beck, Hastings, Daly, & Stevenson, 2004; Hastings, 2002; Scott, Atkinson, Minton, & Bowman, 1997; Singer and Irvin, 1991) and are more depressed (Olsson & Hwang, 2001; Singer, 2006; Veisson, 1997).

Results of the current study also indicated that mothers of children with developmental disabilities have similar levels of parental self-efficacy as mothers of children without disabilities. This would seemingly be as expected, as there were no differences in stress or depression between these two groups of mothers either. These variables have been shown to negatively impinge upon parental self-efficacy (Hays, Well, Sherbourne, Rogers, & Spitzer, 1995; Wells-Parker, Miller, & Topping, 1990). The lack of any significant differences in parenting satisfaction and social support may also help to explain the lack of significant differences in stress and depression between the two groups. However, as indicated in the

findings related to the first research question of this study, social support was not found to be related to stress or depression levels. It may be entirely plausible, based upon the findings of this study, that being a single mother explains the majority of the variance in depression and stress among mothers when making comparisons to married mothers, and that being a single mother of a child with a developmental disability adds little more to the variance in stress and depression among single mothers. Unfortunately, this study did not include married mothers of children with and without developmental disabilities to make these comparisons. The lack of any significant difference in parenting satisfaction between the two groups was also not expected, particularly if one considers that children with developmental disabilities are often less emotionally and physically responsive to caregivers, often lack the cognitive and emotional capabilities to formulate meaningful relationships, require more monitoring, care, and attention than nondisabled children, more severely limit caregivers' social opportunities, and often require life-long care.

The third research question examined whether or not having a child with a developmental disability moderated the relationships between stress and parental self-efficacy, parenting satisfaction, social support, and depression. The use of moderating variables is common in research, and their use has been employed in numerous studies involving people with developmental disabilities (Duvdevany & Aboud, 2003; Jackson, 2000; Manuel, Naughton, Balkrishnan, Smith, & Koman, 2003; Silver, Bauman, & Ireys, 1995). The results of the first hypothesis indicated that having a child with a developmentally disability did not moderate the relationship between stress and parental self-efficacy. The results of the second hypothesis indicated that having a child with a developmental disability moderated the relationship between stress and parenting satisfaction. The third hypothesis resulted in findings in which having a child with a developmental disability did not moderate the relationship between stress and social

support. The fourth hypothesis indicated that having a child with a developmental disability did not moderate the relationship between stress and depression. Therefore, group membership (having a child with a developmental disability versus having a child without a developmental disability) only had a significant moderating effect on the relationship between stress and parenting satisfaction. The result that the only relationship moderated as a function of child type was between stress and parenting satisfaction is consistent with the first hypothesis wherein higher stress levels were found to be significantly correlated to lower parenting satisfaction among single mothers. Furthermore, the second hypothesis found no significant differences between mothers with and without children with a developmental disability on measures of stress, depression, parenting satisfaction, or parental self-efficacy, which helps to explain why the majority of the relationships tested as a function of child type were not significantly moderated in the third, fourth, or fifth hypotheses.

The fourth research question examined whether or not having a child with a developmental disability moderated the relationships between depression and parental self-efficacy, parenting satisfaction, social support, and stress. The results of all four related hypotheses indicated that group membership (having a child with a developmental disability versus having a child without a developmental disability) did not moderate the relationships between depression and parental self-efficacy, parenting satisfaction, social support, or stress. There was not a significant difference between mothers in each group in the second set of hypotheses in regard to mean depression score (mothers of children with developmental disabilities=13.18, mothers of children without developmental disabilities=13.00), and the finding that the relationships between depression and parenting parental self-efficacy, parenting satisfaction, social support, and stress were not significantly moderated as a function of group underscores this. Depression may not be as viable of a variable to explore among these groups,

as the average depression score of all the participants in this study was 13.02, which falls within the “minimal” range of depression on the BDI-II, according to the authors (Beck, Steer, & Brown, 1996). Depression may play a more significant factor in studies where the average level of depression is greater. Interestingly, there were significant differences in parental self-efficacy and parenting satisfaction as a function of depression severity when examining all of the participants. However, these differences were not significant when the subjects were dichotomized into groups based upon whether or not they had a child with a developmental disability.

The fifth research question examined whether or not having a child with a developmental disability moderated the relationships between social support and parental self-efficacy, parenting satisfaction, depression, and stress. The results of the first hypothesis indicated that that group membership (having a child with a developmental disability versus having a child without a developmental disability) did moderate the relationship between social support and parental self-efficacy. The results of the second hypothesis also indicated a moderating effect of group membership, which was on the relationship between social support and parenting satisfaction. The results of the third and fourth hypotheses indicated that group membership did not moderate the relationships between social support and depression or stress, respectively.

The finding that group membership significantly moderated the relationships between social support and parental self-efficacy and parenting satisfaction seemed to imply that the strength of these relationships between these variables were significantly altered based upon whether or not the mother had a child with a developmental disability. The findings also indicated that the relationships between social support and stress and depression are not meaningfully altered as a function of whether or not single mothers had a child with a developmental disability. This suggests that parenting satisfaction and parental self-efficacy may

be useful variables for future studies involving social support among single mothers both with and without a child with a developmental disability.

The sixth research question examined the predictive ability of various factors that included socioeconomic status, social support, age of the mother, age of the child, total number of children in the home, history of psychiatric or psychological care within the past year and, additionally for mothers of children of developmental disabilities, the diagnostic type of the child, maternal rating of the child's disability, and years of formalized services, on the criterion variables stress, depression, parental self-efficacy, and parenting satisfaction. The results of the first hypothesis for mothers of children with developmental disabilities indicated that total number of children in the home, reception of psychiatric or psychological services within the past year, and number of years of receiving formalized services for their child were significantly correlated with stress. Stress was positively correlated with number of children in the home, and negatively correlated with mothers' reception of mental health services within the last year and years of receiving formalized services for their children with disabilities. This implied, not surprisingly, that mothers of children with developmental disabilities had more stress when they had more children. It also indicated that mothers with less stress did not receive mental health services within the last 12 months and had more years of formalized services for their child with a disability. This highlighted the importance of formalized services and early interventions for disabled individuals and their families. These three variables explained 22% of the variance in stress, with number of years the child has been receiving services explaining 11% of the variance, receiving mental health services explaining 6%, and number of children in the home explaining 5%. Therefore, stress levels were lower for mothers of children with developmental disabilities who had fewer children and had more years of receiving formalized services for their child with a disability. It also implied that stress levels were higher for mothers who had received

or were receiving mental health services within the past year, which seemingly justified their seeking services in the first place. Additionally, it may have implied that mothers who had lower levels of stress had utilized mental health services appropriately in the past and had less psychiatric or psychological symptomatology as a result of receiving services.

The results of the first hypothesis for the sixth research question for mothers of children without developmental disabilities indicated that stress was negatively correlated with social support, indicating that higher social support was associated with lower stress. However, social support only accounted for 4% of the variance in stress. Despite this minimally meaningful result, it lends support to the finding from the first set of hypotheses that indicated mothers with low stress had higher scores in social support than mothers with high stress, despite the differences not being statistically significant. As mentioned earlier, social support was a significant predictor for all of the predictor variables in the sixth set of hypotheses. The finding that social support was a significant predictor of stress in the sixth hypothesis and not the first hypothesis may have been due to the combining of both groups in the first hypothesis as compared to the dichotomization of the two groups in the sixth hypothesis, as social support was not a significant predictor of any of the criterion variables for mothers of children with a developmental disability in the sixth hypothesis. As indicated earlier, this would suggest that single mothers of children without a disability are more dependent upon social support in relation to stress, depression, parental self-efficacy, and parenting satisfaction and/or more keenly feel the effects of social support levels than mothers of children with developmental disabilities, who may be more accustomed to the level of social support they receive. It should be recalled that there were no significant differences between the two groups of mothers in social support as reflected in the findings of the second group of hypotheses.

The second criterion variable was depression and the results regarding the second hypothesis indicated that reception of mental health services within the last year was significantly correlated with depression for mothers of children with disabilities, accounting for 5% of the variance in depression. The finding that receiving mental health services was negatively correlated with depression implied that higher depression was correlated with obtaining mental health services, which again seemingly justified their reception of services and that they were using the resources available to them to get assistance. It also implied that mothers who were not seeking mental health services tended to have lower levels of depression, which would again imply that mental health resources were being used appropriately as circumstances dictated. For mothers of children without developmental disabilities, social support and socioeconomic status were negatively correlated with depression, which is consistent with previous research (Brissette, Scheier, & Carver, 2002; Silver, Heneghan, Bauman, and Stein, 2006). This seems plausible, as having less accessibility to resources and less perceived support from others can have detrimental effects, particularly among single mothers. Socioeconomic status explained 9% and social support explained 7% of the variance in depression.

Findings for the third hypothesis indicated that none of the predictor variables for parental self-efficacy were significant for mothers of children with developmental disabilities. This is fairly consistent with earlier analyses, which found significant but not practical relationships between parental self-efficacy and high versus low levels of depression and stress. For mothers of children without developmental disabilities parental self-efficacy was predicted by social support and age of the mother, with higher social support and younger age being related to higher levels of parental self-efficacy. Social support accounted for 8% of the variance and age of the mother accounted for another 5% of the variance in parental self-efficacy. The finding that older mothers had less parental self-efficacy among nondisabled children may at

least partially be explained by the natural progression that occurs as children become more independent as they enter their teen years. Furthermore, research has highlighted the importance of social support, particularly among single mothers, who often have to face heavy parental responsibilities, social isolation, and are more prone to distress (Ceballo & McLoyd, 2007).

The fourth hypothesis examined parenting satisfaction as a criterion variable among mothers of children with developmental disabilities and found that the total number of children in the home and the reception of mental health services significantly predicted parenting satisfaction. There was a negative relationship between the total number of children in the home and parenting satisfaction. The total number of children in the home accounted for 8% of the variance in parenting satisfaction, indicating that more children were related to less parenting satisfaction. There was a positive relationship between receiving mental health services and parenting satisfaction. Receiving mental health services within the last year accounted for an additional 6% of parenting satisfaction, indicating that parenting satisfaction was higher among mothers who had not received mental health services within the past year. Higher stress and depression were found to be significantly related to parenting satisfaction in earlier analyses, and mothers of children with developmental disabilities were found to have significantly less parenting satisfaction and significantly more children in their homes than mothers of children without disabilities. Therefore this finding was consistent with earlier analyses within this study. Among mothers of children without disabilities, social support and socioeconomic status significantly predicted parenting satisfaction. Social support accounted for 5% of the variance and socioeconomic status accounted for 4% of the variance in parenting satisfaction among mothers of children without disabilities. This was certainly not surprising, as these variables have commonly been found to be of significant importance in previous research (Silver, Heneghan,

Bauman, & Stein, 2006; Wanamaker & Glenwick, 1998). However, it also left 91% of the variance in parenting satisfaction unexplained.

Interestingly, diagnosis type of their child was not a significant predictor of stress, depression, parental self-efficacy, or parenting satisfaction among mothers of children with developmental disabilities. Previous research has found that diagnosis type has been related to parenting stress (Duis, Summers, & Summers, 1997; Podolski & Nigg, 2001; Tomanik, Harris, & Hawkins, 2004; Pisula, 2007), while others have found that severity of symptoms (Hastings, 2002; Beck, Hastings, Daley, & Stevenson, 2004; Konstantareas & Papageorgiou, 2006) and behavioral problems (Tomanik, Harris, & Hawkins, 2004) are related to parental stress. The relatively weak relationships found among diagnosis type of the children with disabilities and levels of stress, depression, parental self-efficacy, and parenting satisfaction of their mothers were in the expected directions, with stress and depression being positively correlated with more severe diagnoses (cognitive impairment with comorbid psychiatric and/or medical diagnoses as opposed to just cognitive impairment) and parental self-efficacy and parenting satisfaction being negatively correlated with more severe diagnoses of the children. However, it may be that specific psychiatric diagnoses such as autism, schizophrenia, and ADHD yield more meaningful differences in such measures as opposed to being clustered into one group. For example, previous research has found that behavioral problems specific to autism are significantly related to parental stress levels (Podolski & Nigg, 2001; Tomani, Harris, & Hawkins, 2004). The same may or may not be true of medical disorders (Blacher & McIntyre, 2006; Duis, Summers, & Summers, 1997).

Limitations of the Study

One of the primary limitations of this study was the geographic area utilized to recruit subjects. While mothers of children with developmental disabilities were recruited primarily

within the city of Detroit, mothers of children without developmental disabilities were recruited throughout the Metropolitan Detroit area. Therefore, some of the findings may have statistical significance while lacking practical significance. However, any significant differences between the groups were controlled for in the statistical analyses. The findings of this study may not be generalized much further than beyond the group studied, as it was fairly homogenous in some respects. All of the participants were not married and were without a significant other living in their home. Furthermore, most of the participants were African-American. Conversely, as mentioned previously, there were some significant differences on some of the variables between the two groups, including socioeconomic status, number of children in the home, age of the mother, age of the child, ethnicity, and marital status. Future studies in this area may wish to use matched groups to increase the probability that any significant differences obtained are due primarily to the variables being studied.

The self-report methodology employed in this study is subjective, cannot be verified, and may be arguable (Uebelacker, Courtnage, & Whisman, 2003). The correlational nature of this study, like all correlational investigations, cannot assume causation. It can only infer relationships. Furthermore, some participants may have felt uncomfortable providing accurate information, based upon the sensitive nature of some of the items in the questionnaires. This may have led to answering items in a more “desirable” fashion via underreporting more serious problems.

Implications for Clinical Practice

These results call for professionals who work with families to be cognizant of the potentially deleterious factors among parents that could be playing a part in maladaptive family functioning. Parents should be a focus of clinical intervention as much as their children when providing services to families. It is important to note that these results were obtained by single

mothers in general, both whom had children with developmental disabilities and those who had children without developmental disabilities. It seems that too often among the work of those with developmental disabilities that the family is neglected or treated as simply the “backdrop” for the disabled individual. Intensive family therapy is needed for these families to help with coping, adjustment, and utilization of strategies to provide the highest quality of life possible for the individuals with disabilities as well as their families. Although there were not statistically significant differences between mothers with and without children with developmental disabilities on measures of stress, depression, social support, parental self-efficacy, or parenting satisfaction, it was found that there were significant differences in parental self-efficacy and parenting satisfaction between mothers who were high in stress versus those lower in stress. Additionally, mothers with higher levels of depression generally had lower parenting satisfaction and parental self-efficacy. Highlighting these findings as a topic for discussion among researchers, clinicians, practitioners, and mothers of children with developmental disabilities is the first step to addressing this issue. Parenting classes, fostering and supporting the development and maintenance of religion and spirituality, and adequate opportunities for family involvement within the community may help to increase parenting satisfaction while decreasing stress and depression symptoms, which will serve to increase positive parenting practices and overall quality of life. Individual and group therapy, support groups, and access to psychiatric services as needed for single parents of children with and without developmental disabilities would be quite helpful in addressing this problem.

Recommendations for Future Research

Future research in this area may wish to include single and married mothers of children with and without developmental disabilities. This would shed additional light on the contributions of marital status while simultaneously investigating the status of the child (with

and without disabilities) and the effects on parental functioning. Investigating the effects on fathers would also add to a rather meager literature base in this area. Studies involving mothers of children with and without disabilities who are adopted or in foster care may shed light on potential differences between foster parents versus biological parents, which may aid in the procurement of resources needed to guide future interventions in either setting. Using groups that are more closely matched on extraneous variables will help to increase the likelihood that observed differences are due to the variables being studied.

More specific utilization of diagnosis types among children should be a feature of future studies in this area. Using more specific medical and psychiatric diagnoses among children considered developmentally disabled and among children with diagnoses that are not considered disabled may yield more meaningful results regarding the effects on parents and help account for a greater portion of the variance in the variables being studied.

APPENDIX A

INSTRUMENTS

DEMOGRAPHIC QUESTIONNAIRE

Name: _____ Phone number: _____
 (Please provide this information if you wish to be in the raffle for the \$50 Target gift card)

1. Marital status (circle one):

Single Legally Separated Divorced Widowed

2. Your age: _____ years, _____ months

3. Age of one of your children that is between 5 and 17 years of age (If you have a child with a disability, write his/her age): _____ years, _____ months

4. Is this child male or female? _____

5. Does this child have a developmental disability? _____ (yes or no)

6. How many children do you have living in your home for whom you are responsible? _____

7. List your job type and how many hours per week you work at each one:

_____ for _____ hours per week.
 _____ for _____ hours per week.
 _____ for _____ hours per week.

8. If you are legally separated, divorced, or widowed and are receiving financial support from your former spouse or his estate, what was/is the occupation of your former spouse? _____

9. If you are divorced, widowed, or legally separated, what is the highest level of education attained by your former spouse? (Please circle one)

- A. Highest grade completed: _____
- B. High school graduate
- C. Some college
- E. College graduate
- F. Graduate degree (Masters, etc.)
- G. Other (please specify): _____

10. What is the highest level of education you have reached? (Please circle one)

- A. Highest grade completed: _____
- B. High school graduate

- C. Some college
- D. College graduate
- E. Graduate degree (Masters, etc.)
- F. Other (please specify): _____

11. What is your ethnicity (please circle):

- A. African-American
- B. Asian-American
- C. Caucasian/European-American
- D. Hispanic-American
- E. Native American
- F. Other (please specify): _____

12. Have you been treated by a psychologist or a psychiatrist within the last twelve months? _____ (yes or no) Were you hospitalized for psychiatric reasons during this time? _____ (yes or no)

**13. Does your child have any diagnosed psychiatric conditions? _____ (yes or no)
If so, what are they? _____**

(Examples include autism, Asperger's, schizophrenia, depression, ADHD, etc.)

**14. Does your child have any diagnosed medical conditions? _____ (yes or no)
If so, what are they? _____**

(Examples include seizures, muscular dystrophy, cerebral palsy, diabetes, fetal alcohol syndrome, Down's Syndrome, etc.)

**Would you like to be contacted about the results of this study when it is completed? _____ YES
_____ NO**

(If yes, make sure to give your name and phone number at the top of the first page)

DO NOT ANSWER THESE UNLESS YOU HAVE A CHILD THAT IS DISABLED

15. How many TOTAL years has your child been receiving formal services related to his/her disability, whether from a school, clinic, doctor, physical therapist, speech therapist, or some other form of professional assistance? _____

16. In your opinion, what is the overall rating you would give to describe the severity of the disability of your child? (please circle one number)

**1 2 3 4 5 6 7 8 9 10
---Mild-----Moderate-----Severe---**

Perceived Stress Scale

The questions in this scale ask you about your feelings and thoughts **during the last month**. In each case you will be asked to indicate by circling *how often* you felt or thought a certain way.

0=Never 1=Almost Never 2=Sometimes 3=Fairly Often 4=Very Often

1. In the last month, how often have you been upset because of something that happened unexpectedly? **0 1 2 3 4**
2. In the last month, how often have you felt that you were unable to control the important things in your life? **0 1 2 3 4**
3. In the last month, how often have you felt nervous and “stressed”? **0 1 2 3 4**
4. In the last month, how often have you felt confident about your ability to handle your personal problems? **0 1 2 3 4**
5. In the last month, how often have you felt that things were going your way? **0 1 2 3 4**
6. In the last month, how often have you found that you could not cope with all the things that you had to do? **0 1 2 3 4**
7. In the last month, how often have you been able to control the irritations in your life? **0 1 2 3 4**
8. In the last month, how often have you felt that you were on top of things? .. **0 1 2 3 4**
9. In the last month, how often have you been angered because of things that were outside of your control? **0 1 2 3 4**
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? **0 1 2 3 4**

Beck Depression Inventory-Second Edition
BDI-II
© 1996 by Aaron T. Beck
ψPsychCorp

Parenting Sense of Competence

Listed below are a number of statements. Please respond to each item, indicating your agreement or disagreement.
Please answer the questions using the following scale:

| Strongly Agree | Agree | Slightly Agree | Slightly Disagree | Disagree | Strongly Disagree |
|-------------------|-------|-------------------|----------------------|----------|----------------------|
| 1 | 2 | 3 | 4 | 5 | 6 |

- ___ 1. The problems of taking care of a child are easy to solve once you know how your actions affect your child, an understanding I have acquired.
- ___ 2. Even though being a parent could be rewarding, I am frustrated now while my child is at his/her present age.
- ___ 3. I go to bed the same way I wake up in the morning, feeling I have not accomplished a whole lot.
- ___ 4. I do not know why it is, but sometimes when I'm supposed to be in control, I feel more like the one being manipulated.
- ___ 5. My mother was better prepared to be a good mother than I am.
- ___ 6. I would make a fine model for a new mother to follow in order to learn what she would need to know in order to be a good parent.
- ___ 7. Being a parent is manageable, and any problems are easily solved.
- ___ 8. A difficult problem in being a parent is not knowing whether you're doing a good job or a bad one.
- ___ 9. Sometimes I feel like I'm not getting anything done.
- ___ 10. I meet my own personal expectations for expertise in caring for my child.
- ___ 11. If anyone can find the answer to what is troubling my child, I am the one.
- ___ 12. My talents and interests are in other areas, not in being a parent.
- ___ 13. Considering how long I've been a mother, I feel thoroughly familiar with this role.
- ___ 14. If being a mother of a child were only more interesting, I would be motivated to do a better job as a parent.
- ___ 15. I honestly believe I have all the skills necessary to be a good mother to my child.
- ___ 16. Being a parent makes me tense and anxious.
- ___ 17. Being a good mother is a reward in itself.

Family Support Scale

© Carol J. Dunst, Carol M. Trivette, and Vicki Jenkins

Winterberry Assessment Scales & Instruments

APPENDIX B**RESEARCH INFORMATION SHEET****A COMPARISON OF PARENTAL SELF-EFFICACY, PARENTING SATISFACTION,
AND OTHER FACTORS BETWEEN SINGLE MOTHERS WITH AND WITHOUT
CHILDREN WITH DEVELOPMENTAL DISABILITIES****Research Information Sheet**

Principal Investigator (PI): Raymond Small, MA,LLP
Educational Psychology, WSU

Purpose:

You are being asked to participate in a research study of parenting among single mothers in an urban setting. You have at least one biological child residing in your home between the age of 5 and 17 years of age and are either single, legally separated, widowed, or divorced. This study is being conducted through Wayne State University at Neighborhood Service Organization (NSO)-Life Choices. The estimated number of participants to be enrolled is about 200. **Please read this form and ask any questions you may have before agreeing to be in this study.**

This research will be examining parenting and motherhood among single mothers of disabled children and single mothers of nondisabled children. Depression, stress, and support systems of these mothers and how they relate to feelings and practices of parenting will be evaluated.

Study Procedures:

If you agree to take part in this research study, you will be asked to complete some information about yourself. There will be 4 surveys which examine issues that are often related with being a single mother. Some of the questionnaires may contain subject matter of a sensitive nature. Please remember your answers will not be shared with anyone except the Principal Investigator. Your participation will be kept confidential. Your participation should take no more than 40 minutes of your time. The packet includes:

- 1) Demographic Information
- 2) Survey on Stress
- 3) Survey on Depression
- 4) Survey on Parental Self-Efficacy and Parenting Satisfaction
- 5) Survey on Social Support

Benefits:

As a participant in this research study, there may be no direct benefit for you; however, information from this study may benefit other people now or in the future. Information from this research will provide insight for researchers into parenting among single mothers.

Risks:

By taking part in this study, you may experience the following risks:

A COMPARISON OF PARENTAL SELF-EFFICACY, PARENTING SATISFACTION, AND
OTHER FACTORS BETWEEN SINGLE MOTHERS WITH AND WITHOUT CHILDREN
WITH DEVELOPMENTAL DISABILITIES

* Slight emotional distress by answering some of the questions on the surveys. Referrals for psychological services will be made available to participants in case of significant distress as a result of participation.

Costs:

There will be no costs to you for participation in this research study.

Compensation:

You will not be paid for taking part in this study.

Confidentiality:

All information collected about you during the course of this study will be kept confidential to the extent permitted by law. You will not be identified in the research records. The Human Investigation Committee (HIC) at Wayne State University, or federal agencies with appropriate regulatory oversight [e.g., Office for Human Research Protections (OHRP), Office of Civil Rights (OCR), etc.] may review your records. When the results of this research are published or discussed, no information will be included that would reveal your identity.

Voluntary Participation /Withdrawal:

Taking part in this study is voluntary. You may choose not to take part in this study, or if you decide to take part, you can change your mind later and withdraw from the study. You are free to not answer any questions or withdraw at any time. Your decision will not change any present or future relationships with Wayne State University or its affiliates, or NSO-Life Choices.

Questions:

If you have any questions about this study now or in the future, you may contact Raymond Small at the following phone number . If you have questions or concerns about your rights as a research participant, the Chair of the Human Investigation Committee can be contacted at (313) 577-1628. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call (313) 577-1628 to ask questions or voice concerns or complaints.

Participation:

By completing the questionnaires you are agreeing to participate in this study.

APPENDIX C

**APPROVAL LETTER
PARTICIPATING AGENCY**



NSO LIFE CHOICES
8600 Woodward Avenue
Detroit, Michigan 48202

313.875.7601 (p) 313.875.7622 (f)

"Services to Persons with Developmental Disabilities"

February 16, 2009

To Whom It May Concern:

Raymond Small, a psychologist at NSO-Life Choices, has obtained our permission to utilize information from our consumer database for his doctoral dissertation. This includes client contact information, as well as any other relevant information that is needed for the sole purpose of collecting data for his dissertation. We are aware that this will also include research-related contact with our consumers and their mothers as laid out in his study design. We understand that he also has to follow the research and ethical guidelines as laid forth by Wayne State University and all of its related institutions. NSO is in full support of Mr. Small in satisfying those requirements.

If you have any questions, comments, or concerns, please feel free to contact me at 313-961-4890, ext. 1052.

A handwritten signature in black ink, appearing to read "Risarg Huff", is written over a horizontal line.

Risarg Huff, MSW, ACSW, LMSW
Director of Performance Improvement/Clinical Training

APPENDIX D

HUMAN INVESTIGATION COMMITTEE APPROVAL



HUMAN INVESTIGATION COMMITTEE
 101 East Alexandrine Building
 Detroit, Michigan 48201
 Phone: (313) 577-1628
 FAX: (313) 993-7122
<http://hic.wayne.edu>



NOTICE OF EXPEDITED APPROVAL

To: Raymond Small
 Psychology

From: Ellen Barton, Ph.D.
 Chairperson, Behavioral Institutional Review Board (B3)

Date: April 14, 2009

RE: HIC #: 043509B3E
 Protocol Title: On Stress, Depression, and Additional Factors Faced by Single Mothers of Developmentally Disabled Children in an Urban Setting

Sponsor:
 Protocol #: 0904006994

Expiration Date: April 13, 2010

Risk Level/Category: 45 CFR 46.404 - Research not involving greater than minimal risk

The above-referenced protocol and items listed below (if applicable) were **APPROVED** following *Expedited Review* (Category 7*) by the Chairperson/designee for the Wayne State University Behavioral Institutional Review Board (B3) for the period of 04/14/2009 through 04/13/2010. This approval does not replace any departmental or other approvals that may be required.

- Telephone Script for Phone Recruitment of Mothers of Developmentally Disabled Children
- Flyer
- Information Sheet (revised 4/13/09)

- Federal regulations require that all research be reviewed at least annually. You may receive a "Continuation Renewal Reminder" approximately two months prior to the expiration date; however, it is the Principal Investigator's responsibility to obtain review and continued approval *before* the expiration date. Data collected during a period of lapsed approval is unapproved research and can *never* be reported or published as research data.
- All changes or amendments to the above-referenced protocol require review and approval by the HIC **BEFORE** implementation.
- Adverse Reactions/Unexpected Events (AR/UE) must be submitted on the appropriate form within the timeframe specified in the HIC Policy (<http://www.hic.wayne.edu/hicpol.html>).

NOTE:

1. Upon notification of an impending regulatory site visit, hold notification, and/or external audit the HIC office must be contacted immediately.
2. Forms should be downloaded from the HIC website at *each* use.

*Based on the Expedited Review List, revised November 1998

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ABSTRACT**A COMPARISON OF PARENTAL SELF-EFFICACY, PARENTING SATISFACTION,
AND OTHER FACTORS BETWEEN SINGLE MOTHERS WITH AND WITHOUT
CHILDREN WITH DEVELOPMENTAL DISABILITIES**

by

RAYMOND PHILLIP SMALL

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Advisor: Dr. Barry Markman**Major:** Educational Psychology**Degree:** Doctor of Philosophy

Depression and stress occur among single mothers and raising a child with a developmental disability can be a difficult burden. The purpose of this study was to determine if having a child with a developmental disability was a source of stress and depression among single mothers, and if this impinged on parental self-efficacy, parenting satisfaction, and social support. The moderating potential of having a child with a disability was examined on relationships between stress, depression, parental self-efficacy, parenting satisfaction, and social support. Understanding these relationships could be useful in the service delivery system to single mothers and families of children with developmental disabilities.

A total of 192 single mothers were divided into two groups: mothers of children with developmental disabilities (n=93) and mothers of children without disabilities (n=99). Participants were unmarried with no live-in romantic partners who were residing with at least one biological child between the age of 5 and 17 years in the home. Basic demographics were used for inclusionary purposes and to calculate SES. Four instruments assessed stress (Perceived Stress Scale-10), depression (BDI-II), parental self-efficacy and parenting satisfaction (Parental Sense of Competence Scale), and social support (Family Support Scale).

Overall results indicated that single mothers who had higher stress and depression levels had lower parental self-efficacy and parenting satisfaction. After accounting for significant covariates, mother's age and number of children within the home, no statistically significant differences were found between the two groups on measures of stress, depression, parental self-efficacy, parenting satisfaction, and social support.

Having a child with a developmental disability did not moderate relationships between stress and parental self-efficacy, social support, or depression, but moderated the relationship between stress and parenting satisfaction. Having a child with a developmental disability did not moderate the relationships between depression and parental self-efficacy, parenting satisfaction, social support, and stress. Having a child with a developmental disability moderated the relationships between social support and parental self-efficacy and parenting satisfaction, but not depression or stress. Future research should examine single and married parents of children with and without developmental disabilities, and compare foster and adopted children with biological children.

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