Predicting Family Strength in Families Caring for Children with Disabilities

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PREDICTING FAMILY STRENGTHS IN FAMILIES
CARING FOR CHILDREN WITH DISABILITIES

by

Katrina J.F. Ericson

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

Predicting Family Strength in Families
Caring for Children with Disabilities

by

Katrina J.F. Ericson, Master of Science
Utah State University, 1998

Major Professor: Scot M. Allgood
Department: Family and Human Development

This research sought to identify factors that might be useful in helping to predict family strengths in families caring for a child with a disability. Based on the ABCX model designed for families in crisis, this research examined severity of child's disability (A); the family's existing resources of household income, education of the mother, and mother's marital status (B); the family's perception of family resources, family support, and parenting stress (C); and how these influence family strength (X) over time. In relation to the ABCX model, it was hypothesized that the aforementioned constructs would be associated with each other, and would significantly predict family strengths.

Results did not support the overall predictive value of severity of child's disability, household income, education of mother, or mother's marital status toward family strength. However, results indicated that the predictive value of the perception of family resources, family support, and parenting stress did
explain variability in family strengths as measured by the *Family Functioning Style Scale*.
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First of all I must thank my parents, Dennis and Betty Fuller, for their willingness to care for their grandchildren when I made trips to Logan. Words cannot express my gratitude and love.

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I also thank myself for enduring to the end, for there were many, many times when I questioned the benefits versus the costs. Prayers are answered. Selah.
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Theoretical ABCX model for predicting family strengths in families caring for children with disabilities.
CHAPTER I
INTRODUCTION

The birth of a child with a disability is usually an unexpected and devastating event (Meyerson, 1983). Upon hearing the diagnosis, the parents may experience grief, shock, fear, guilt, resentment, and sorrow (Markman & Leonard, 1984; Meyerson, 1983; Simons, 1987). Baxter, Cummins, and Polak (1995) found that the diagnosis of disability was the life event that the parents in their study recalled as being most stress-inducing.

Hauenstein (1990) stated that families must initiate a number of changes in family structure and function within a short time following the diagnosis of a child having a disability. Family situations where roles are involuntarily vacated through illness, or are not fulfilled as in the case of a child with mental retardation, bring marked changes in the configuration of a family (Hill, 1965), and these adjustments and realignments within families during times of change are often stressful (Batshaw & Perret, 1986). The caregiving responsibilities, depending on the severity of illness, require involvement on a day-to-day basis. Furthermore, these changes and responsibilities within the family are part of a dynamic process that changes over time.

The purpose of this study was to examine the influence of the severity of a child's disability; the demographics of household income, education, and marital status of mother; and perception of family resources, family support, and parenting stress over time on family strength.
Definitions

Following are definitions of the above-stated constructs beginning with severity of child's disability, which can be measured by using a developmental quotient.

Developmental quotient is a term used to define the combined level of cognitive development of a child as well as physical functioning. Brooks-Gunn (1985) reported that infants with a disability have special characteristics, rather than general delays, with regard to social and emotional competencies. She pointed out that specialized care, temperament more sensitive to stimulation, and irritability with less responsivity are three characteristics not accounted for by cognitive delays, which describe children with disabilities. Physical handicaps, developmental risk, or medical fragility (such as prematurity and/or other medical problems) are associated with the concept of developmental disability. The level of personal/social, adaptive, motor, communication, and cognitive skills of a child is assessed to determine the developmental quotient, or level of severity, of a child with disabilities.

Social support is defined as resources provided by others, including emotional, psychological, physical, information, and/or material assistance that help an individual adapt to different life events (Dunst, Cooper, & Bolick, 1987; Dunst & Trivette, 1988; Goldberg, Marcovitch, MacGregor, & Lojkasek, 1986; Schilling, Gilchrist, & Schinke, 1984). Existing resources, or resources within the family at the time of a stressor event, include such factors as time availability, employment, child care, housing, medical care, and so forth.

Stress is defined as having two dimensions, including the number of demands an individual is faced with as well as the individual's response to those
demands. When demands exceed the individual's capacity to meet them, symptoms of distress emerge (Felsten, 1994; Goldberg et al., 1986). Innocenti, Huh, and Boyce (1992) have stated that stress is difficult to assess because it involves both the occurrence of an event and the individual's perception of the event. The stressful aspect of any situation is directly related to what the individual perceives to be stressful (Friedrich, Cohen, & Wiltturner, 1987). Rapoport (1965) has suggested that a problem can be perceived to be a threat, a loss, or a challenge, and that if the problem is viewed as a challenge, it is more likely to be met with energy and a sense of purpose toward solving the problem.

Family strength, or family functioning, is a term used to describe a family's ability to cope and adjust to life's situations. Adaptability, communication skills, cohesiveness, flexibility, problem-solving skills, and an overall ability to deal with crises and stress are factors that help to determine whether or not a family is functioning positively. Olson and McCubbin (1982) defined family cohesion as the emotional bonding of family members and the degree of individual autonomy they experience. Adaptability is defined as the marital or family system's ability to change its power structure, role relationships, and relationship rules when responding to stressful situations (Olson & McCubbin, 1982). McCubbin and Patterson (1982) suggested that the process of family adaptation is a matter of weighing the costs and benefits. Families who have a child with a disability must determine how much change they will allow in the system to accommodate the challenges of their situation. It is helpful to note that adjustment is considered to be a short-term response
that changes the family's situation momentarily, while adaptation implies a change over time with long-term consequences (McCubbin & Patterson, 1982).

Conceptual Framework

Hill's ABCX (Crisis) formulation (Hill, 1965) provides a framework to organize the variables in this study. In its simplest form, Hill's model states that a stressor event (A) interacts with a family's existing resources (B), and this in turn interacts with the family's perception and definition of the stressor event (C) to create a crisis situation (X). This equation presupposes that the crisis (X) with its accompanying stress is dependent on both (B) and (C), the resources or strengths possessed by the family and how the family defines the event (Kingsbury & Scanzoni, 1993). Hill (1965) stated that a family's definition of the event is a reflection of the value system held by the family, partly due to the family's previous experience in meeting crises, as well as how the family came to previous definitions of particular events. The meaning aspect of the crisis, or the interpretation made of it, is of central importance to this model.

A crisis is defined as a period of disequilibrium where a situation cannot be handled by the family's commonly used problem-solving mechanisms (Parad & Caplan, 1965). Rapaport (1965) stated that a crisis is defined as an upset in the steady state of a family where the abilities utilized to solve problems in the past are not achieving a balanced state. This is not to say that a family cannot employ new patterns of problem-solving behavior. In fact, it is important to note that this model is founded on the principle that the stressor event is a variable rather than a constant in family crisis. In other
words, the family is adjusting and adapting in reaction to the event from the moment it occurs.

The four constructs of this study can be juxtaposed into the ABCX model. Hill (1965) stressed the interaction of severity of child's disability (A), with the family's existing resources (B). These resources (B) are utilized to help the family prevent the event (A) from disrupting the system. The demographic variables of household income, mother's education, and mother's marital status represent resources available at the time of a stressor event. In summary, the severity of the child's disability (A) interacts with the family's existing resources of household income, mother's education, and mother's marital status (B).

The event (A) combined with the family's resources (B) interacts with the family's perception and definition of the event (C). In the present study, three areas will be used to help show how a family perceives and defines their situation (C). These areas are (a) the perception of family resources, (b) family support, and (c) parenting stress. The analysis of these factors should help describe a family's pattern of managing hardships and the ability to adapt to the experience of having a child with a disability.

The crisis situation (X) is a continuum representing the amount of disruption or disorganization in the family. Family functioning, or family strength, is an indication of how the disruption has been dealt with by the family. Figure 1 illustrates how (A), (B), and (C) interact to help predict family strength (X). Remember that the crisis (X) and stress stemming from the stressor event (A) are dependent on both the resources of the family (B) and
Figure 1. Theoretical ABCX model for predicting family strengths in families caring for children with disabilities.

their perception of stress (C). The family's coping strategies provide a pattern of interaction and organization associated with adaptation. Once again, adaptation implies that the system, in this case the family, has resumed its ability to maintain relationships.

Purpose

The research in this area is potentially beneficial in many ways. Not only individual lives of children with a disability, but family members including siblings, parents, grandparents, and extended family members could benefit from information dealing with how to improve a family's ability to cope with a child who has a disability. Professional health care workers will be able to improve their services by formulating individual service plans and choosing
appropriate services (Boyce, Miller, White, & Godfrey, 1995) to help meet more specific needs of families. Hopefully, the public will be better educated in understanding the needs of individuals with a disability and their families. After all, the problems facing families are directly related to those problems that society must deal with as a whole. Furthermore, government costs can perhaps be lowered as more adequate services become accessible to families to help them better care for their loved ones in their own homes.

The purpose of this study was to examine the effects over time of severity of a child's disability; the demographic variables of household income, mother's education, and mother's marital status; and the perception of family resources, family support, and parenting stress on family strength. This study examines how these variables influence a family's ability to cope with the demanding task of caring for a child with a disability. The main research question addressed whether or not looking at the child's severity of disability; the specific demographic variables of household income, mother's education, and mother's marital status; perceptions of family resources, family support, and parenting stress, over time, helps to predict family strength.
CHAPTER II
LITERATURE REVIEW

The four variables integrated into the ABCX model will be more completely described in the following literature review. The severity of a child's disability (A); the family's existing resources, including household income, mother's education, and mother's marital status (B); the family's perception and definition of the stressor event, including the perception of family resources, family support, and parenting stress (C); and the family's ability to cope and adapt to life's situations, which is defined by family strength (X), will be integrated into the ABCX model.

Severity of Child's Disability

From the ABCX model, (A) represents the event and related hardships or stressors. In this analysis, the event is seen as the diagnosis of the child's disability. Also, part of the (A) factor is family hardships, which are defined as the demands on the family specifically associated with the stressor event (McCubbin & Patterson, 1983a). The severity of the child's disability is directly related to the amount and kind of care required for the child. It is therefore reasonable to translate the stressor event into the care of a child with disabilities and the related severity of the disability.

The systems approach shows that there are reciprocal interactions between the child with a disability and the family, or system. The birth and subsequent presence of a child with a disability affect the feelings, attitudes, and behavior of the parents and other children in the family; and, the child's feelings, attitudes, and behavior are influenced by his or her parents and
siblings (Black, 1991; Meyerson, 1983). This systemic approach includes larger societal impacts. Campbell and Ramey (1994) suggested that transactions between systems ranging from that of the child, the parents, the school, the community, and society as a whole can influence developmental outcomes.

Child characteristics such as the type and severity of disability will influence families in different ways (Goldberg et al., 1986; Holroyd & Guthrie, 1979). A child with more severe disabilities places greater time demands on family members to care for the child (Dunst et al., 1987). Not only time, but family disintegration, negative parental attitudes, pessimism toward the child, and parental perceptions that their child's behavior is both troublesome and difficult are related to the severity of the child's handicap. The level of the child's abilities is of significant influence to the mother's perception of the child's adaptiveness to change, the child's demands for attention and services, the need for behavioral management, and the mother's satisfaction in parent-child interaction (Boyce, Behl, Mortensen, & Akers, 1991).

It has been found that mothers with children who have more medical complications, and whose disabilities are more chronic, have greater problems coping with their children's care (Singer & Farkas, 1989). They also experience stress related to the characteristics of the child (Hanson & Hanline, 1990), and generally report measurable depression and poorer health (Dunst & Trivette, 1988; Eheart & Ciccone, 1982; Noh, Dumas, Wolf, & Fishman, 1989).

More recent studies have found that parents' perceptions of their child's impact on time and finances are determined by more than the severity of their child's disability (Henderson & Vandenb...
Wallander & Venters, 1995). Hanson and Hanline (1990) found that socioeconomic status, spousal relationships, and personal problems played a greater role in determining family difficulties (or level of stress) than did the presence of a child with a disability. Other researchers have also found additional factors such as mothers' unmet needs (Mahoney, O'Sullivan, & Robinson, 1992), and family factors and societal attitudes (Cobb & Hancock, 1984) play a significant role in contributing to a family's ability to adjust. Studies showing a more negative influence stemming from the child's disability are less likely to focus on the complexity of family interactions, and more likely to look at the relationship of parent to child. This is generally the pattern of scientific research. That is, the foundation is built with more general discoveries in order for more diversified and complex studies of family relationships to be added.

Research on families who have a child with a disability utilizes a combination of variables and emphasizes the interaction of child characteristics with demographics, family relationships, stress, and availability and utilization of resources. Overall, there appears to be a strong commitment to recognizing the complexity of family life and the use of a systems approach.

In summary, children with disabilities affect various elements of family functioning in different ways. By itself, the level of severity of a disability does not seem to contribute significantly to a family's ability to adjust. Instead there seem to be a number of influences at work such as the mother's perception of child characteristics, and interactions among family members.
Demographic Variables

The demographic factors of household income, mother's education, and mother's marital status play a role in helping to predict which families might be at risk for experiencing greater problems, and a lessened ability to adapt to the event of caring for a child with disabilities. Hill's ABCX model expresses the interaction of (A) with a family's resources (B). The family's resources are described as the family's ability to prevent change from disrupting the system. The three variables of socioeconomic status, education, and marital status/relationships provide insight into how available resources influence a family's ability to adjust to a stressor event.

Household Income

The literature regarding income and its relationship to a family's ability to care for a child with a disability shows that there is an advantage to having available financial resources (Carr, 1988; Eheart & Ciccone, 1982; Trivette & Dunst, 1992). For the most part, those families with a high socioeconomic status appear to have less stress (Dean & Lin, 1977; Mahoney et al., 1992), are more likely to utilize services (Ross, 1984; Singer & Farkas, 1989), and the children have been shown to make more progress when compared to those in lower socioeconomic groups (Dunst, Trivette, & Cross, 1986; Trivette & Dunst, 1992).

Mother's Education

When a child is disabled, a set of characteristics is introduced to the realm of parenting where there may be inadequate or nonexisting skills and information. A higher level of education appears to enhance the parent's
ability to better understand how to care for a child with disabilities (Dunst & Trivette, 1988; Sameroff, 1985). Additionally, education seems to play a role in how well parents are able to solve problems when their child is ill (Hauenstein, 1990; Melson, 1983).

In a study done to determine if play opportunities were affected by resources, Dunst and Trivette (1988) found that respondents from higher socioeconomic backgrounds and those who were more educated were found to be more likely to engage in responsive play and lap games with their children. In addition, Campbell and Ramey (1994) found that the biological mother's IQ was highly related to academic outcomes for the child. In contrast, however, one group of researchers found that parents with higher educational levels experienced more stress due to their understanding of the long-term consequences of neurological problems in their children (Singer & Farkas, 1989).

Mother's Marital Status/Relationship

Research has shown the significance of a supportive spouse in caring for a child with a disability (Friedrich et al., 1987; Herman & Thompson, 1995; McKinney & Peterson, 1987). Single mothers of children with disabilities generally have greater financial stress, feel more social isolation, and have a greater need for respite care than mothers of two-parent families (Wikler, Haack, & Intagliata, 1984). Married mothers reported more informal support from spouse and other close family members while nonmarried mothers reported more support from social agencies in a study by Trivette and Dunst (1992). A number of studies have analyzed the relationship of marital status and severity of disability and their effects on family life. Friedrich et al. (1987)
found that marital satisfaction was the best predictor of adequate coping in mothers of a child with a disability. Another study found that mothers whose children were rated higher on the disability dimension rated their marriage higher in terms of satisfaction (Rousey, Best, & Blacher, 1992). Additionally, Singer and Farkas (1989) found that family life was greatly affected by marital status and severity of disability.

Overall, there appears to be a moderating influence from a supportive spouse on how a mother perceives her situation. Positive family relations would most likely stem from greater marital satisfaction. An implication to the research on marital status in families who have a child with a disability is determining effective amounts of service for single mothers.

There seems to be an interaction among these three variables representing a family’s existing resources. For instance, Breslau and Davis (1986) reported a combined effect from socioeconomic status and education when they found that the chronic stress group in their study had a lower mean educational level, a higher proportion of single mothers, and a lower mean family income. Onufruk, Saylor, Taylor, Eyberg, and Boyce (1994) found that in their sample where economic conditions ranged from welfare status to wealth, a combination of disadvantages including low income, single parenthood, low maternal education, minority ethnic heritage, and young motherhood led to low maternal responsiveness.

In general, low income results in more financial problems, more depression among mothers, and less developmental progress for the child with a disability. Parents with a higher level of education seem to be better able to engage in stimulating games with their child, and experience less stress.
Marital status tends to demonstrate a moderating influence in caring for a child with a disability.

**Perception of Resources, Social Support, and Stress**

The event (A) combined with the family's existing resources (B) interacts with the family's perception and definition of the event (C). The factors (A) and (B) do not *cause* (C); rather, their interaction increases the degree of vulnerability toward the amount of influence a crisis has on developing a definition for the event. Three variables that temper vulnerability and a family's developing perception over time are family resources, family support, and parenting stress.

Hill (1965) stated that the effects of crisis on families may be "punitive or strengthening depending on the margin of health, wealth, and adequacy possessed by the family" (p. 49). Successful family adaptation involves two major kinds of family resources. The first resource is the internal resources of the family, which include such skills as coping adaptability and integration. The second is the family's ability to utilize services in the community and social supports, which can strengthen the organization and functioning of the family. An important factor in this area of research is the family's satisfaction with the support received.

**Family Resources**

Resources available to the family can be in the form of extended family support or from friends and other larger support networks. A study by Sandler, Warren, and Raver (1995) looked at the involvement of grandparents as providing support to families with a child with a disability. Babysitting was
the most frequent activity engaged in with some financial help provided. Researchers in another study found that parents reported using few external services to supplement their intrafamily resources, including time, money, and family and friend networks (Herman & Thompson, 1995). Other families draw support from extended networks. Family and friends were shown to be most helpful to parents (Stinnet, Knorr, DeFrain, & Rowe, 1981), particularly following the diagnosis of their child's disability (Baxter et al., 1995).

It has been found that mothers and fathers differ in their perception of support, with mothers focusing more than fathers on family cohesiveness (Patterson & McCubbin, 1983), and being more likely to be interested in opportunities to meet and interact with other parents of children with disabilities (Bailey, Blasco, & Simeonsson, 1992). These findings may help explain how families use their resources. If there is a supportive marital and extended family relationship, other resources may not be needed. If there is not a good marital relationship or extended family is not available, mothers may seek outside resources.

Families appear to function better if they have both internal and external support (Dunst & Trivette, 1988; Schilling et al., 1984). Combined, intrafamily role sharing and extrafamily support available to mothers can buffer the possible adverse effects of a child's developmental characteristics and their resulting influences (Trivette & Dunst, 1992).

**Family Support**

Sources of support available to the family provide another moderating influence for both the emotional and physical well-being of parents who have a child with a disability, particularly in reference to time demands (Dunst et al.,
The influence of social support has been shown to decrease psychiatric disorders (Parry & Shapiro, 1986), increase coping ability (Schilling et al., 1984), and enhance the adjustment to caring for a child with a disability by providing an important resource for parents (Henderson & Vandenberg, 1992). One such resource is connecting with other parents in a similar situation. A number of studies have shown the positive influence of meeting and interacting with other families of children with disabilities (Bailey et al., 1992; Herman & Thompson, 1995; McCubbin & Huang, 1989; McKinney & Peterson, 1987; Simons, 1987).

Early intervention programs for children with disabilities are one form of support coming from outside of the family that greatly influence the internal workings of a family. The basic tenet of early intervention is the understanding that a child’s development should be enhanced through strengthening the intellectual stimulus and developmental appropriateness of the early environment (Black, 1991; Campbell & Ramey, 1994).

Early childhood educational intervention has been shown to have benefits in terms of cognitive performance (Campbell & Ramey, 1994), and helping parents gain knowledge about their child’s disability (Vincent, 1992). In addition, home intervention in low-income families was shown to help with maternal involvement, thereby improving the child-rearing environment (Ross, 1984).

The family often defines success with various sources of support by how satisfied they are with the support and/or services they receive. Families indicating more satisfaction with support reported fewer time demands with regard to the care of their child (Dunst et al., 1986). Mahoney et al. (1992)
found that when mothers' need for support was high and satisfaction with support was low, they had a greater need for intervention services. It has also been shown that how a mother perceives her role restriction can be predicted by the support network that she believes to exist around her (Wallander & Venters, 1995). Social support encourages a more positive child-rearing attitude and more positive behavioral interactions between mother and child (Crnic, Greenberg, Ragozin, Robinson, & Basham, 1983b; Crnic, Greenberg, & Slough, 1986; Dunst & Trivette, 1988).

Hill (1965) has pointed out that family members reallocate roles and reorganize themselves in a crisis. Therefore, the family members changing needs, specifically in relation to time spent caring for the child with a disability, will influence individual ability to prevent a disruption in the system. External support influences the progress of the child and family relationships, when family members are temporarily relieved from the demands of childcare. Furthermore, the family members' perception of the quality of support is significant. When family members are satisfied with the support received in assisting them to better care for their child with a disability, they are more likely to be effective in their efforts to prevent change from disrupting the family system.

According to the research in this area, various sources of support can affect perception of time demands, coping ability, and parent-child interaction. Social support also appears to enhance child development, provides a source of emotional support to mothers, influences levels of stress, and is particularly valuable to families in the form of intervention services as well as family-to-family interaction. Overall, the amount of support, combined with satisfaction
from parents pertaining to how various efforts of support are delivered, seems to play a significant role in how a family perceives their experience of caring for a child with disabilities.

**Parenting Stress**

The work of parenting is intensified by having a child who has a disability, as are the parenting strains, stresses, and pressures (Thompson, 1986). Krauss (1993) defined child-related stress as the behavioral and temperamental qualities a child displays that make it difficult for parents to fulfill their parenting roles. Parenting stress refers to the parents' functioning that may compromise their ability to parent effectively, namely, depression, sense of competence, and relations with spouse. Parental stress exists over time in relation to specific life events and changing concerns. In fact, Hill (1965) cautioned that families are unique and stressor events must be seen as a variable rather than as a constant in research on families in crisis.

The role of chronic stress has been shown to play a significant role in how parents perceive their situation (Black, 1991; Breslau & Davis, 1986). Families who have a child with a disability encounter ongoing stress in a unique context, which may involve potentially stressful interactions (Baxter et al., 1995; Black, 1991; Crnic, Friedrich, & Greenberg, 1983a). The interactions within the family are mingled with the demands of caring for a child with a disability. The caregiving demands, such as feeding, bathing, and dressing the child, interact with parent stress that accompanies these demands and is added to in some cases by a lack of information and understanding about the child's condition as well as an uncertainty about the future (Baxter et al., 1995; Mahoney et al., 1992). The interactions outside of the family can be
frustrated by how family members feel they, and the child with a disability, are perceived by others (Batshaw & Perret, 1986).

Research regarding the influence of stress on families who have a child with a disability shows that parents feel more stress when they perceive they have little or no control over their child's health (Hauenstein, 1990). Innocenti et al. (1992) found that higher stress reported by parents of children with disabilities was related to issues dealing directly with the child rather than to parent-related factors. However, other research shows that a family's response to stress includes variables such as the individual, family, peer groups, social institutions, and interactions within and between these variables (Crnic et al., 1983a); that the mother's adjustment to the child's disability has more impact than the objective severity of the disability (Wallander & Venters, 1995); and that parental characteristics can influence the ability to cope with the stressor of caring for a child with a disability (Carr, 1988; Gallagher, Beckman, & Cross, 1983). A mother's coping ability was shown to be related to child health improvement (McCubbin & Huang, 1989), and to both the well-being of the family and the child (McCubbin et al., 1982). Additionally, one study found the strongest correlates and predictors of stress for parents involved aspects regarding the parents' perceptions of the family environment, social support network, and how they viewed professionals' control over their child's development (Krauss, 1993).

Stress not only influences family interactions, but the individuals as well. For example, mothers who report less stress report more pleasure in parenting roles (Crnic et al., 1983b), and individual perception of stress appears to influence coping ability (Felsten, 1994; Singer & Farkas, 1989).
There is a relationship between the three areas of family resources, family support, and parenting stress that lends itself to the verification of the intensity of how these areas influence family adaptability. Resources such as time, employment, and child care influence how a family perceives their situation. Social support, the number of resources, and satisfaction with resources influence family interactions and moderates stress. Various levels of stress are indicative of the meaning or definition a family gives to their situation, as well as their present, and perhaps future, efforts to adjust and cope effectively with their situation. In this study, the severity of disability (A) interacts with the existing resources of socioeconomic status, education, and marital status (B); and (A) and (B) combined interact with the definition or meaning the family gives to their situation (C). This definition (C) is a creation of the family's perceptions of family resources, family support, and parenting stress.

Family Strength

Family strength, or family functioning, describes a family's ability to cope and adapt to life's situations. The (X) factor could be labeled with the term "amount of crisis" as it denotes variation in the amount of disruptiveness, incapacitatedness, or disorganization of the family social system, and it varies continuously (Burr, 1982). Crisis is defined as a period of disequilibrium where the family's previous capabilities to solve problems are no longer adequate (Hill, 1965; Parad & Caplan, 1965; Rapoport, 1965). The severity of the stressor event is perhaps less meaningful than the manner in which the family
reacts and copes with their problem (Stinnet et al., 1981). Crisis includes an interaction of an event with its perception (McCubbin et al., 1980).

Families have been found to utilize strengths on behalf of their child with a disability (Haynes, 1983), and some have reported that their experience has brought them closer as a family able to manage and cope effectively (Batshaw & Perret, 1986; Mahoney et al., 1992; Parad & Caplan, 1965; Singer & Farkas, 1989). Coping involves efforts to manage various dimensions of family life while learning to compromise and accept the best possible outcome (McCubbin & Patterson, 1983b).

Researchers have emphasized the role of internal family support in helping the family reach a level of adaptation (Baxter et al., 1995; Hanline & Daley, 1992; Mahoney et al., 1992; Stinnett et al., 1981). Past research has also shown that adequate coping is predicted by marital satisfaction (Friedrich et al., 1987; Garmezy, 1985; Hill, 1965), well-educated parents (Garmezy, 1985), and availability of medical resources (Friedrich et al., 1987; Garmezy, 1985).

Families and their health-related concerns change over time (Haynes, 1983). The adjustment process for families may become more difficult because of developmental or educational services and basic care-giving needs that arise over the years with a growing child (Hanson & Hanline, 1990). Time affects both family functioning (Bailey et al., 1992; Batshaw & Perret, 1986), and parental coping strategies (Cobb & Hancock, 1984; Crnic et al., 1983a; McCubbin et al., 1980). The length of time needed to reach acceptance of their situation varies with each family (Calhoun, Calhoun, & Rose, 1989; Lyon & Preis, 1983). Families change over time, and generally are better able to cope
as they learn to deal with the experience of caring for a child with a disability (Simons, 1987). Coping then becomes a process of achieving balance over time.

Parents of children with disabilities face a variety of tasks unique to their situations. Most parents develop positive relationships with their child (Cobb & Hancock, 1984) and show stability over time in adapting to parenting challenges (Hanson & Hanline, 1990). In summary, it appears that a large percentage of families caring for a child with a disability adapt and function adequately.

Summary

Overall, the findings of various studies on families who have a child with a disability are quite diverse—as are the families themselves. Hill's ABCX model provides a framework to organize the influence of the severity of a child's disability, combined with a family's existing resources (household income, mother's education, and mother's marital status) interacting with family resources, family support, and parenting stress to help predict family strength.

A theme weaving through much of the literature on families who have a child with a disability is the meaning the families give to their situation. More specifically, stressors become crises in relation to the definition, or meaning, the family makes of the event. Hill (1965) stated that a family's definition of an event is a reflection of the value system held by the family as well as the family's previous experience in meeting crisis. McCubbin et al. (1980) stated that the difference between events that may lead to dysfunction or not, may depend upon whether or not the family has an explanation for what happened, why it happened, and how the family's social environment can be utilized to
help overcome the undesirable situation. In other words, how the family comes to develop a meaning for what happens has impact on the family's ability to cope with certain events.

There is no evidence to support the assumption that a disability alone has a negative effect on families. However, it is apparent that families who have a child with a disability have the challenge of maintaining a positive environment in the midst of great caregiving demands.

Hypotheses

Over time, how well do severity of disability; the demographic variables of household income, mother's education, and mother's marital status; perceptions of family resources, family support, and parenting stress help to predict family strength? Or, in other words, how useful are (A), (B), and (C) in predicting (X)? The following hypotheses demonstrate a more specific approach to the ABCX model.

1. Severity of child's disability (A) will have a negative association with existing resources (B), which include household income, mother's education, and mother's marital status.

2. Severity of child's disability (A) and existing resources (B) will have a positive association with the family's perception of family resources and family support, and a negative association with parenting stress (C).

3. Severity of disability (A) and existing resources (B) combined with the family's perception of family resources, family support, and parenting stress (C), over time, will be related to family strength (X).
CHAPTER III
RESEARCH METHODOLOGY

The Early Intervention Research Institute (EIRI), based at Utah State University in Logan, has conducted a series of studies involving families of children with a developmental disability or who were at serious risk for a disability (e.g., low birthweight with intraventricular hemorrhage). Sixteen research sites were selected on the basis of their ability to randomly assign subjects, provide a sufficient number of children, provide cost information, participate in child assessment on a longitudinal basis, show staff interest in the project, and fund expanded services necessary for comparison of two alternative treatments.

Casto and White (1993) outlined the study elements providing internal validity to the EIRI's research project. The children were randomly assigned to groups (each child had an equal chance of being assigned to either group and service providers or parents could not influence the decision about group assignment). Data collectors were unaware of the purpose of the experiment and to which group subjects were assigned for impartial data collection. All of the longitudinal studies were conducted using ongoing service programs, which were visited frequently by EIRI staff and/or independent evaluators. An account for costs was made by looking at costs and benefits rather than the budget of program divided by number of children; treatment verification was established by the data from one source being verified or confirmed by data from other sources. Finally, assessing the impact of early intervention and treatment was enhanced by collecting additional information focusing on goals and activities of the intervention program.
Sample

In this study, data from 2 of these 16 sites, Des Moines, Iowa, and Salt Lake City, Utah, were utilized. These two sites were chosen because of their completion of a family strength measurement (FFSS) in 1992, and because they experienced the same intervention program. In Des Moines, the subjects were 76 randomly assigned children with mild to severe disabilities participating in an early intervention preschool program through the public school system. The intervention included classroom-based, half-day, 5-days-per-week services for the children, while parents were offered parents meetings organized and designed to help with conceptual and hands-on experience in child development. This involved observing and recording behavior, teaching decision making, targeting intervention behaviors, and communicating with professionals. Only parents participating in these parents meetings were included as subjects. Assessment data were collected when the study began and at eight reassessment periods. The first reassessment occurred at the end of the academic year in which the intervention took place, with subsequent reassessments occurring at 12-month intervals. Results from the parent involvement study showed a small, positive impact on child developmental progress immediately after intervention, which was not maintained over time (Innocenti, Boyce, & Taylor, 1996).

The subjects in Salt Lake City were 56 preschool children with moderate to severe disabilities. The children were in a half-day, 5-days-per-week, center-based preschool intervention program that was offered at a private, nonprofit agency. Two randomly assigned groups were split from the sample of 56 with half of the parents attending 15 weeks of parent instruction based on the same
training given to parents in Des Moines. Assessments were completed prior to parent instruction, 7 months after the instruction was completed, and annually for 7 years thereafter. The results from the parent involvement study in Salt Lake City showed that the children from the group with additional parent training had an increase in developmental scores (Innocenti et al., 1996). In this case, parent knowledge made a small, but significant contribution to child development.

Ninety-six children and their parents were included in this study. This total indicates those who participated in the testing for the Family Functioning Style Scale (FFSS) in Des Moines and Salt Lake City in 1992, as well as completed the measurements identified in this study for 1986 and 1989.

In general this sample was comprised of married, young mothers (see Tables 1 and 2). The percentages for level of education remained virtually the same over the years pertaining to this study; therefore, subsequent years were not listed. Table 3 shows frequencies for the respondents' level of household income. The questionnaire income item was changed for the 1992 assessment, and included more high-end categories. In general, there appears to be a slight increase in income over time for this sample, which could be explained by general rates of inflation, and families becoming more financially established with time.

Measurement

The following measures were administered to parents in 1986 and 1989, with the exception of the Family Functioning Style Scale, which was administered only in 1992.
Table 1

1986-1992 Marital Status of Respondents

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
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</thead>
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<tr>
<td>Married</td>
<td>74</td>
<td>76.3</td>
<td>69</td>
<td>71.1</td>
<td>78</td>
<td>80.4</td>
</tr>
<tr>
<td>Not married</td>
<td>20</td>
<td>20.6</td>
<td>16</td>
<td>16.5</td>
<td>13</td>
<td>13.4</td>
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Table 2

1986 Age and Education of Respondents

<table>
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<tr>
<td>1986</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother's age</td>
<td>31.36</td>
<td>5.72</td>
<td>19.66</td>
<td>49.54</td>
<td>95</td>
</tr>
<tr>
<td>Mother's years of education</td>
<td>13.00</td>
<td>1.91</td>
<td>8.00</td>
<td>17.00</td>
<td>95</td>
</tr>
</tbody>
</table>

Battelle Developmental Inventory

The Battelle Developmental Inventory (BDI) is a norm-referenced test of developmental functioning (Newborg, Stock, Wnek, Guidubaldi, & Svinicki, 1984). This test is given to assess children from birth to 8 years of age. The test is administered to the child with most of the personal, social, and adaptive behavior information obtained from parent interview. The BDI test items are scored on a 3-point system: 0 points for behavior not attempted or failed;
Table 3

Household Income Level of Respondents

<table>
<thead>
<tr>
<th>Categories of total yearly household income</th>
<th>1986 Freq</th>
<th>%</th>
<th>1989 Freq</th>
<th>%</th>
<th>1992 Freq</th>
<th>%</th>
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</thead>
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<tr>
<td>&lt;5,000</td>
<td>11</td>
<td>11.3</td>
<td>8</td>
<td>8.2</td>
<td>7</td>
<td>7.2</td>
</tr>
<tr>
<td>5,000 - 7,999</td>
<td>8</td>
<td>8.2</td>
<td>5</td>
<td>5.2</td>
<td>9</td>
<td>9.3</td>
</tr>
<tr>
<td>8,000 - 10,999</td>
<td>6</td>
<td>6.2</td>
<td>10</td>
<td>10.3</td>
<td>4</td>
<td>4.1</td>
</tr>
<tr>
<td>11,000 - 14,999</td>
<td>11</td>
<td>11.3</td>
<td>7</td>
<td>7.2</td>
<td>4</td>
<td>4.1</td>
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<tr>
<td>15,000 - 19,999</td>
<td>4</td>
<td>4.1</td>
<td>11</td>
<td>11.3</td>
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<td>9.3</td>
</tr>
<tr>
<td>20,000 - 24,999</td>
<td>15</td>
<td>15.5</td>
<td>11</td>
<td>11.3</td>
<td>9</td>
<td>9.3</td>
</tr>
<tr>
<td>25,000 - 29,999</td>
<td>9</td>
<td>9.3</td>
<td>10</td>
<td>10.3</td>
<td>8</td>
<td>8.2</td>
</tr>
<tr>
<td>30,000 - 34,999</td>
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<td>5.2</td>
<td>6</td>
<td>6.2</td>
</tr>
<tr>
<td>35,000 - 39,999</td>
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<td>7.2</td>
<td>6</td>
<td>6.2</td>
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<td>5.2</td>
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<td>40,000 - 44,999</td>
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<td>6</td>
<td>6.2</td>
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<td>45,000 - 49,999</td>
<td>3</td>
<td>3.1</td>
<td>3</td>
<td>3.1</td>
<td>9</td>
<td>9.3</td>
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<td>50,000 - 59,999</td>
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<tr>
<td>60,000 - 74,999</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>over 75,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 point for behavior attempted but not meeting the specified criterion; and 2 points for behavior meeting the specified criterion. There is a total of 341 items grouped into five domains: personal/social, motor, communication, adaptive behavior, and cognition. The BDI manual reports test-retest
reliability coefficients ranging from .84 to .99 for domain scores (Newborg et al., 1984).

**Parenting Stress Index**

The *Parenting Stress Index* (PSI) is designed to assess parent perceptions of stress which relate to the parent-child system (Abidin, 1983). The index is composed of 101 items scored on a 5-point Likert-type scale. Greater stress is indicated by higher scores. The PSI consists of two domains. The parenting domain is divided into seven subscales: parent attachment to child, sense of competence in the parenting role, parent health, parent depression, restriction in role, social isolation, and relations with spouse. The child domain is divided into six subscales: the child's demandingness, mood, distractibility, degree of reinforcement to the parent, adaptability, and acceptability. The PSI manual (Abidin, 1983) reports test-retest reliability coefficients ranging from .55 to .82 for the child domain, and .69 to .91 for the parent domain. Krauss (1993) reported that the Cronbach's alpha reliability coefficients for her study were .89 for the child domain and .92 for the parenting domain. LaFiosca and Loyd (1986) used the PSI in a study of parental stress and anxiety and reported similarly high reliability coefficients. Taylor (1995) tested the internal structure of the PSI and found concurrent validity correlations which gauge the accuracy of the instrument. In other words, he examined how well the instrument measures what it purports to measure. The concurrent validity between parent and child domains was $r = .57$. 
Family Support Scale

The Family Support Scale (FSS) is an 18-item scale using a 5-point Likert-type scale ranging from "not at all helpful" to "almost always helpful" (Dunst, Jenkins, & Trivette, 1984). The FSS is designed to assess the availability of support from informal kinship, social organizations, nuclear family, formal kinship, and professional services. This scale also assesses the degree to which different sources of support are perceived as adequate. Boyce et al. (1991) reported an alpha reliability coefficient of .85 for the total score. Taylor (1995) reported that the concurrent validity correlations between subscales were positive and moderate to high, while Herman and Thompson (1995) reported very high correlations for each of the subscales.

Family Resource Scale

The Family Resource Scale (FRS) is used to measure adequacy of resources (Dunst & Leet, 1985). It assesses the different types of resources and perceived adequacy in households with young children. It is a 31-item scale where families rate specific resources on a 5-point Likert scale, where 1 indicates "not at all adequate" and 5 indicates "almost always adequate." Factors of this scale include general resources, time availability, physical resources, and external support. Higher scores indicate more resources for the respondent's family. Dunst and Leet (1987) reported a test-retest reliability coefficient of .52 for the total scale scores. Concurrent validity correlations between subscales are positive and extremely high (Herman & Thompson, 1995; Taylor, 1995).
Family Functioning Style Scale

The Family Functioning Style Scale (FFSS) provides a total score to assess family strength (Deal, Trivette, & Dunst, 1988). The 26-item scale asks families to indicate the extent to which each statement is true for them, ranging from 0 (not at all like my family) to 4 (almost always like my family). Questions deal with such factors as family communication, cohesiveness, flexibility, time spent with family, and likelihood of seeking additional resources outside of the family. Deal et al. (1988) found a reliability coefficient of .92 when using the total number of scale items. Coefficients reported by Ahmeduzzaman and Roopnarine (1992) for subscale items were .89 for commitment, .78 for cohesion, .81 for communication, .82 for competence, and .73 for coping. Similarly high coefficients were also reported by Trivette, Dunst, Deal, Hamer, and Propst (1990) for subscale items providing evidence that the FFSS is an internally consistent instrument. The major purpose of this particular family strengths assessment is to gather information about the capabilities and competencies of families from their own perspective.

Procedure

The initial assessments for both sites took place in October and November of 1986. Parents of each child participating in the study completed an informed consent form and answered questions regarding demographic information. Children were administered the Battelle Developmental Inventory (BDI) in the first of two sessions. In the second session, generally within 2 weeks of the BDI, parents completed the following tests pertaining to this
study: the Parenting Stress Index (PSI), Family Support Scale (FSS), and the Family Resource Scale (FRS).

A second reassessment was conducted with both treatment groups in June, 1988. Parents were contacted by telephone and appointments were made for parents and children to complete the core measures. A third reassessment was taken during the summer of 1989. Procedures similar to reassessment #2 were followed. Reassessment #6 took place in March 1992. In the Salt Lake City area, 53 children and their parents participated in the testing. In the Des Moines area, 43 children and their parents participated. At reassessment #6, the children were about 10 years old in Salt Lake City, and about 9 years old in Des Moines. During this testing period, the Family Functioning Style Scale (FFSS) was added to the assessment process as a measure of family strength.

The two groups of children from reassessment #6 are combined in this study, and their tests from the initial assessment in 1986, and reassessment #3 in 1989, will be utilized in the statistical analysis. Missing cases for the Family Support Scale from reassessment #3 were replaced with scores from reassessment #2 in 1988. This was necessary because a substantial number of cases were missing from the Des Moines sample for reassessment #3. It is unknown why these cases are missing; however, the descriptives for the two years of reassessment #2 and #3 are extremely close; therefore, results of reassessment #2 replaced missing cases for #3 for a combined total of 91 cases for the year 1989.
CHAPTER IV
RESULTS

The goal of this chapter is to present a description of the data collected combined with an interpretation of the statistical findings.

Descriptives

The following descriptives provide information about the measures of central tendency and variability, including the range of scores and standard deviations for all measures used in this study for 1986 (Table 4), 1989 (Table 5), and 1992 (Table 6).

Table 4
1986 Descriptives for the Battelle Developmental Inventory, Family Resource Scale, Family Support Scale, and Parenting Stress Index

<table>
<thead>
<tr>
<th>Variable</th>
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<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battelle Developmental Inventory</td>
<td>316.61</td>
<td>87.85</td>
<td>26</td>
<td>535</td>
<td>95</td>
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<tr>
<td>Family Resource Scale</td>
<td>115.46</td>
<td>17.79</td>
<td>73</td>
<td>150</td>
<td>94</td>
</tr>
<tr>
<td>Family Support Scale</td>
<td>29.09</td>
<td>10.62</td>
<td>6</td>
<td>51</td>
<td>94</td>
</tr>
<tr>
<td>Parenting Stress Index</td>
<td>252.71</td>
<td>39.80</td>
<td>160</td>
<td>367</td>
<td>94</td>
</tr>
</tbody>
</table>

The Battelle Developmental Inventory (BDI) has a total of 341 items with each item scored as 0, 1, or 2 points. High scores indicate that the child’s behavior met the specified criteria in each of five domains. The highest
Table 5

1989 Descriptives for the Battelle Developmental Inventory, Family Resource Scale, Family Support Scale, and Parenting Stress Index

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battelle Developmental Inventory</td>
<td>450.36</td>
<td>113.92</td>
<td>140</td>
<td>659</td>
<td>89</td>
</tr>
<tr>
<td>Family Resource Scale</td>
<td>119.22</td>
<td>18.98</td>
<td>56</td>
<td>150</td>
<td>88</td>
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<tr>
<td>Family Support Scale</td>
<td>28.27</td>
<td>11.04</td>
<td>8</td>
<td>68</td>
<td>91</td>
</tr>
<tr>
<td>Parenting Stress Index</td>
<td>245.02</td>
<td>38.29</td>
<td>146</td>
<td>335</td>
<td>88</td>
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</tbody>
</table>

Table 6

1992 Descriptives for Family Functioning Style Scale

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Functioning Style Scale</td>
<td>76.89</td>
<td>14.13</td>
<td>33</td>
<td>104</td>
<td>96</td>
</tr>
</tbody>
</table>

possible score is 682. The mean score for the BDI in 1986 was 316.61, and a moderate score would be about 341; therefore, the children in this study were more than moderately disabled. In this case, raw scores were used rather than age equivalent scores. Age equivalent scores show how "typical" the child is for his age. Raw scores, a total of all domain scores, give an indication of how much a child can actually do. It was decided that raw scores show a better explanation for how a child with disabilities might affect the mother. In relation to family strength, it was assumed the raw score would be most
beneficial. In 1989, the mean score for the BDI was 450.36, indicating a decrease in the severity of disability, or an increased ability to perform assigned tasks.

The Family Resource Scale (FRS) asks the parent to rate from 1 (not at all adequate) to 5 (almost always adequate) the extent they feel their resources are adequate. The highest score for this 31-item scale is 155. The mean scores for 1986 and 1989 were 115.45 and 119.22, respectively. On average, these scores fall between the responses of 3 (sometimes adequate) and 4 (usually adequate). Dunst and Leet (1987) considered scores of 4 or 5 as optimal levels for resource adequacy. In this case, the mean scores, which did not significantly change over time, show the families in this sample perceive their resources such as money, time, and medical care to be more than moderately adequate.

The total score for the Family Support Scale (FSS) is a measure of satisfaction of various sources of support. The responses can range from 0 (not at all helpful) to 4 (extremely helpful), with a high score of 72, and a moderate score of about 36. The mean score for 1986 was 29.09, and the mean score for 1989 was 28.27. These scores are less than moderate, indicating an overall sense of dissatisfaction with support from such sources as parents, in-laws, relatives, and social workers. Once again, the mean scores did not change significantly over time.

The primary purpose of the Parenting Stress Index (PSI) is to identify parent-child systems at risk for dysfunctional parenting behavior. According to the PSI manual (Abidin, 1983), raw scores at or above 260 are considered to show a need for professional consultation. The mean score in 1986 of 252.71
would appear high, yet it falls within the normal range for parents with 4-year-old children. The mean score of 245.02 in 1989 falls within the normal range for parents of 7-year-old children. The critical cut-off score for high stress corresponds to the 85th percentile, and scores for this sample are in the 70th percentile for both years. There was a slight decrease of stress over time, yet not an impressive difference.

The mean score for the Family Functioning Style Scale (FFSS) was 74.89 out of a possible 104, showing that the families in this sample have a fairly good foundation of strengths to build upon. The major purpose for using this particular family strengths assessment is to gather information about the competencies and capabilities of families from their own perspectives (Trivette et al., 1990). Family functioning style implies a family's unique way of dealing with life events and promoting growth and development, versus looking at scores as a continuum with strength at one end and weakness at the other. The FFSS was developed to focus on positive aspects of family functioning consistent with the view that all families have strengths that need to be emphasized. Furthermore, family strengths can be an important determinant of the well-being and health of the family unit and individual family members (Trivette et al., 1990).

Correlations

To assess the relationship between the variables of this study, correlations were calculated. Correlations are a measure of association between variables, and the coefficients range from -1.0 to +1.0. A positive correlation indicates that both of the variables vary in the same direction,
while a negative correlation means that when one variable is high the other is low.

Table 7 shows the correlation matrix for all except one of the variables in 1986 with the *Family Functioning Style Scale* (FFSS) for 1992. The strongest statistically significant correlations are between mother's education and income ($r = .55$), and family resources and parenting stress ($r = -.54$). Moderate correlations occur between parenting stress and family support, family resources and family support, and family resources and income (see Table 7). The highest correlation for the listed variables in relation to the FFSS is with family resources ($r = .46$).

### Table 7

1986 Correlation Coefficients for All Independent Variables with Family Functioning Style Scale

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mother's Marital Status</th>
<th>Mother's Education</th>
<th>Income</th>
<th>Family Resource Scale</th>
<th>Family Support Scale</th>
<th>Parenting Stress Index</th>
<th>Family Functioning Style Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battelle Developmental Inventory 05</td>
<td>-.34*</td>
<td>-.02</td>
<td>.10</td>
<td>.08</td>
<td>-.19</td>
<td>.17</td>
<td></td>
</tr>
<tr>
<td>Mother's Marital Status</td>
<td>-.35*</td>
<td>-.51*</td>
<td>-.07</td>
<td>-.17</td>
<td>-.12</td>
<td>-.02</td>
<td></td>
</tr>
<tr>
<td>Mother's Education</td>
<td>.55*</td>
<td>.22*</td>
<td>.27*</td>
<td>-.09</td>
<td>-.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td>.47*</td>
<td>.39*</td>
<td>-.24*</td>
<td>.22*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Resource Scale</td>
<td>.48*</td>
<td>-.54*</td>
<td>.46*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Support Scale</td>
<td>-.49*</td>
<td>.32*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parenting Stress Index</td>
<td></td>
<td></td>
<td>-.38*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$p < .05$
Table 8 shows the correlation matrix for all of the variables in 1989 with the FFSS for 1992. The strongest association is between mother's education and income ($r = .54$). Moderate associations exist between family resources and parenting stress, and family support and parenting stress. The highest correlation for the listed variables in relation to FFSS is with family resources ($r = .46$).

The most notable differences comparing correlations in 1986 and 1989 are the associations between FFSS and family support (from $r = .32$ to $r = .44$), FFSS and parenting stress (from $r = -.38$ to $r = -.48$), and FFSS and income.

Table 8

1989 Correlation Coefficients for All Independent Variables with Family Functioning Style Scale

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mother's Marital Status</th>
<th>Mother's Education</th>
<th>Income</th>
<th>Family Resource Scale</th>
<th>Family Support Scale</th>
<th>Parenting Stress Index</th>
<th>Family Functioning Style Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battelle Developmental Inventory</td>
<td>- .05</td>
<td>- .29*</td>
<td>- .03</td>
<td>12</td>
<td>.01</td>
<td>- .27*</td>
<td>.16</td>
</tr>
<tr>
<td>Mother's Marital Status</td>
<td>- .43*</td>
<td>- .41*</td>
<td>07</td>
<td>.07</td>
<td>-.16</td>
<td>.11</td>
<td>-.09</td>
</tr>
<tr>
<td>Mother's Education</td>
<td>54*</td>
<td>14</td>
<td>.06</td>
<td>-.06</td>
<td>-.06</td>
<td>06</td>
<td>.05</td>
</tr>
<tr>
<td>Income</td>
<td>.35*</td>
<td>09</td>
<td>-.21*</td>
<td>.14</td>
<td>.40*</td>
<td>-.46*</td>
<td>.46*</td>
</tr>
<tr>
<td>Family Resource Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.46*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Support Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.42*</td>
<td>.44*</td>
<td></td>
</tr>
<tr>
<td>Parenting Stress Index</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.48*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05
(from $r = .22$ to $r = .14$), which was statistically significant in 1986, but not in 1989. From this, we see that over time there is a greater positive association shown between FFSS and family support. We also see that when parenting stress scores are low, FFSS scores are more likely to be high, and that the magnitude of the association between FFSS and income decreased over time.

Findings in Relation to Hypotheses 1 and 2

1. Severity of child's disability (A) will have a negative association with existing resources (B), which include household income and mother's education.

As hypothesized, severity of child's disability has a negative association with household income and mother's education. However, only mother's education had a statistically significant association with severity of child's disability in 1986 ($r = -.34$; see Table 7), and in 1989 ($r = .29$; see Table 8). The direction of associations was as hypothesized, but the hypothesis was not supported for the relationship between household income and severity of child's disability ($r$ is statistically nonsignificant).

2. Severity of disability (A) and existing resources (B) will have a positive association with the family's perception of family resources and family support and a negative association with parenting stress (C).

Severity of child's disability, mother's education, and household income show positive associations with the (C) variables, while all of the variables are negatively related to stress. The second hypothesis predicted the direction of association between variables, yet there was not consistent statistical significance to entirely support this hypothesis (see Table 9). Also, it appears
Table 9

1986-1989 Correlation Coefficients for (A) and (B) with (C)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Battelle Developmental Inventory</td>
<td>.10</td>
<td>12</td>
<td>.08</td>
<td>01</td>
<td>-19</td>
<td>-.27*</td>
</tr>
<tr>
<td>Mother’s Education</td>
<td>.22*</td>
<td>14</td>
<td>.27*</td>
<td>06</td>
<td>-09</td>
<td>-06</td>
</tr>
<tr>
<td>Household Income</td>
<td>.47*</td>
<td>35*</td>
<td>.39*</td>
<td>09</td>
<td>-.24*</td>
<td>-.21*</td>
</tr>
</tbody>
</table>

*P < .05

that the associations between the variables become weaker over time, with the exception of the association between the Battelle Developmental Inventory and the Parenting Stress Index. There is not sufficient statistical evidence to provide a meaningful link between the idea set forth in the theoretical ABCX model with the results from Table 9. In other words, the relationship between (A) and (B) with (C) is not substantiated.

Regression

Regression analysis is useful in predictive studies. Two variables are related if knowing the value of one variable tells us something about the value of another variable. In other words, the objective is to use one variable to predict values for another. Multiple regression is utilized when more than one independent variable is used to help predict the value of one dependent variable.

Table 10 shows the results of the multiple regression analysis for all of the independent variables with the Family Functioning Style Scale (FFSS) as
the dependent variable, for both 1986 and 1989. In forward selection regression, each independent variable is entered and the statistics for variables not in the equation are used to select the next one. Partial correlations between FFSS and each of the independent variables not in the equation, adjusted for independent variables in the equation, were examined. The variable with the largest partial correlation is the next variable entered. It is noted that marital status was included in the regression analysis as a dummy variable.

Table 10

1986-1989 Multiple Regression for All Independent Variables with FFSS as Dependent Variable

<table>
<thead>
<tr>
<th>Variable</th>
<th>1986</th>
<th>1989</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Beta</td>
</tr>
<tr>
<td>Family Resource Scale</td>
<td>.28</td>
<td>.35</td>
</tr>
<tr>
<td>Family Support Scale</td>
<td>.21</td>
<td>.16</td>
</tr>
<tr>
<td>Parenting Stress Index</td>
<td>-.02</td>
<td>-.06</td>
</tr>
<tr>
<td>Household Income</td>
<td>.50</td>
<td>.10</td>
</tr>
<tr>
<td>Mother’s Education</td>
<td>-.91</td>
<td>-.11</td>
</tr>
<tr>
<td>Battelle Developmental Inventory</td>
<td>.00</td>
<td>.04</td>
</tr>
<tr>
<td>Mother’s Marital Status</td>
<td>2.47</td>
<td>.07</td>
</tr>
</tbody>
</table>

Adjusted $R^2$                  | .22      | .31      |

*p ≤ .05
This model showed family resources as the best predictor variable in 1986. Parenting stress, family resources, and family support were the best predictor variables of all of the independent variables in 1989. The beta score indicates how much increase there is in FFSS for every one unit of the independent variable. If the beta is zero, in the case of the Battelle Developmental Inventory (BDI), it means that changes in the BDI have no linear effect on FFSS.

The statistical model for all of the independent variables in 1986 showed an adjusted $R^2$ of .22. $R^2$ is a measure of common variance between the dependent variable and a set of independent variables, and provides a quantitative measure of how well the fitted model containing independent variables predicts the dependent variable. The adjusted $R^2$ is reported here because it attempts to correct $R^2$ to more closely reflect the goodness of fit of the model in the population. The adjusted explained variance for all of the independent variables with FFSS in 1989 was 31%.

Findings in Relation to Hypothesis 3

3. Severity of child's disability (A) and existing resources (B) combined with the family's perception of family resources, family support and parenting stress (C) over time, will help to determine family strength (X).

Severity of child's disability, the existing resources of household income, and mother's education were not statistically significant in helping to predict the value of family strength (FFSS). The family's perception of family resources, family support, and parenting stress were statistically significant and moderately associated with FFSS. However, the third hypothesis is
rejected because of the lack of statistical significance to show an *overall* linear regression. In other words, even though (C) was statistically significant, (A) and (B) were not; therefore, (A), (B), *and* (C) did not help to determine (X).
CHAPTER V
DISCUSSION

As medical science continues to advance, there will be more children with disabilities surviving birth and living at home (McCubbin & Huang, 1989). Therefore, it is expedient to explore and analyze the strengths and stresses of caregiving parents who have a child with a disability. This research sought to identify some of the factors that might be useful in helping to predict family strength in families caring for a child with a disability. Based on the ABCX model designed for families in crisis, this research examined severity of child’s disability (A); the family’s existing resources of household income, mother’s education, and mother’s marital status (B); the family’s perception of family resources, family support, and parenting stress (C); and how these influence family strength (X) over time. It was hypothesized that there would be positive associations among the interacting variables (A), (B), and (C), with the exception of parenting stress, and a distinguishable value in their ability to predict family strength. The following section will discuss how the empirical results of this study relate to the conceptual ABCX model.

The ABCX model shows that (A) interacts with (B). Results from this study show a negative association between severity of child’s disability and household income, and this association was not statistically significant. Two factors that may play a role in this result are related to the sample. A high percentage of the respondents were married and the percentage remained high over time. Single mothers tend to report more financial problems than married mothers (Dunst & Trivette, 1988; Wikler et al., 1984). Also, these families were drawn from existing programs where services were already being
received; therefore, the level of income was not a determining factor in whether or not a child would receive care over time. The direction of association is, however, consistent with past research, which shows that children with disabilities from higher socioeconomic groups make more progress when compared to those in lower socioeconomic groups (Dunst et al., 1986; Trivette & Dunst, 1992).

Results also show a negative association between severity of child's disability and mothers' education, which was statistically significant. The Battelle Developmental Inventory showed improvement over time, while the mothers' mean years of education stayed basically the same. One explanation for this may be that "years of education" does not give an indication to the experience and training that mothers receive over the years relating to caregiving skills and utilization of available medical resources. The services provided to mothers to help educate them in caring for their children with disabilities should not be overlooked as a formal learning experience. The significant relationship between severity of child's disability and mother's education is consistent with past research. Education appears to enhance the parent's ability to understand how to care for a child with disabilities (Dunst & Trivette, 1988; Sameroff, 1985).

The ABCX model states that (A) and (B) interact with (C). Severity of child's disability (A) was not a major factor according to the results of this study. Relative to the findings of this study, Henderson and Vandenberg (1992) have pointed out that family coping is not simply a result of the severity of a child's disability because how a family perceives their child's disability and the availability of family resources influence how this stressor is
understood and managed. One interesting finding in relation to this is the comparison of the Battelle Developmental Inventory to the Parenting Stress Index. The scores of these instruments showed an improvement in the child's severity of disability and a slight decrease in stress from 1986 to 1989, with a statistically significant association in 1989. This result is in accord with research showing that parents of children with more severe disabilities tend to have more stress (Mahoney et al., 1992).

Household income, mother's education, and mother's marital status (B) in relation to each other should be helpful in assessing specific needs of families for health care and respite care, although they were not statistically shown to be strong factors for predicting family strength.

Mother's education was found to have a statistically significant association with family resources and family support in 1986, but not in 1989. A contributing factor may be the ability to network and find resources, which is developed over time. Past research has shown the importance of parents meeting other parents in similar situations (Bailey et al., 1992; Herman & Thompson, 1995; McCubbin & Huang, 1989; McKinney & Peterson, 1987; Simons, 1987). This networking is likely to increase over time, thus, the difference between 1986 and 1989. One suggestion in relation to the lack of statistically significant association between mother's education and parenting stress is that families may learn to better understand their child's health and how to deal with health care professionals. Past research shows that parents feel more stress when they perceive a lack of control over their child's health (Hauenstein, 1990). Thus, the parents in this sample may have effectively utilized their "on the job" education, as well as their resources to reduce stress.
Statistically significant associations were found for household income and family resources, and household income and parenting stress. Past research has found a significant relationship between income and stress for families (particularly mothers) of infants and children with disabilities. Low-income families do not seem to utilize medical and rehabilitation services as often as high-income families (Ross, 1984; Singer & Farkas, 1989), and those families with high income appear to have less stress (Dean & Lin, 1977; Mahoney et al., 1992). Also of note, in 1989 the children in this study were turning 6 and 7 years old and income could make a difference in parents being able to find school-related resources to meet their child's needs.

There is not a pattern over time for a statistically significant association between severity of child's disability (A) and existing resources (B), with the family's perception of family resources, family support, and parenting stress (C) (see Table 9). From this we may conclude that the ABCX model is not entirely suitable to the employment of these constructs as predictors of family strength.

Hill (1965) has stated that the purpose of the ABCX theory is to make the conceptual distinction between the stressor event and the definition the family gives to the event, which then leads to the empirical distinction. Conceptually, the variables chosen for this study fit within the ascribed categories of the ABCX model (see Fig. 1). The crisis-provoking event, a situation for which the family has had little or no prior preparation, can be viewed as the birth and care of a child with a disability. Most families have had problems that have been worked out by a division of responsibility for meeting situations as they arise. Hill (1965) calls these problem solving mechanisms a
"repertory of resources" for dealing with crises (p. 34). These resources exist within the family and were represented in this study as household income, mother's education, and mother's marital status. Analyzing these resources provides an assessment of a family's vulnerability to an adverse reaction to the stressor event. Burr (1982) stated that the stressor event (A) varies by how much disruption occurs within the family system, and the (B) factor represents the family's ability to prevent disruption. Burr (1982) continued by suggesting that theoretically the definition a family gives to a situation, or the changes resulting from a stressor event, makes a difference in the amount of crisis. From this we may conclude that the severity of a child's disability as a stressor event varies by the amount of disruption it causes, resources are a means to prevent disruption, and the definition of the event can change the amount of disruption.

Hill (1965) called the meaning of the event an intervening variable. Therefore, a child with a disability as the stressor event is only a crisis by virtue of the family's definition. This is what makes the (C) factor so challenging. Hill (1965) stated that it is difficult to disentangle the hardships of the stressor event from the family's definition of the event. Actually, the entire model is in movement from the time the family begins to adjust to their new situation.

Conceptually, the constructs seem to fall together within the structure of the ABCX model. This theory was utilized to help predict family strength over time; however, empirically the distinction between the stressor event and the definition the family gives to the event was not made. Severity of child's disability had statistically significant associations with education for both
1986 and 1989, and with parenting stress in 1989, but not with any of the other variables. Severity of child's disability was not statistically significant in helping to explain the variability in family strength scores. The ABCX model infers that the stressor event (A), resources (B), and the definition of the event (C) are precursors to the amount of crisis (X). Burr (1982) has suggested that the definition of the event (C) can make a difference in the amount of crisis (X); however, when identifying (X) as family strength, (X) can make a difference in (C). Family strength would seem to influence the family's definition (C), and the relationship of resources (B) to the event (A). In summary, this model would be more valuable as an assessment tool to help determine a family's vulnerability to disruption, rather than as a predictive model trying to predetermine family strength.

Perhaps the most important results from this project's use of the ABCX model are the following. The statistically significant predictors for family strength scores in 1992 were perception of family resources in 1986, and parenting stress, family resources, and family support in 1989. Additionally, the families (mothers) in this study seem to be maintaining an acceptable level of stress, and perceive their resources as fairly adequate, yet their scores from the Family Support Scale showed dissatisfaction with support.

The result for the Family Functioning Style Scale (FFSS) for this sample seems to be in accord with many of the studies looking at families coping with children with disabilities. Families appear to develop a sense of competence and trust in their collective ability to manage their problems (McCubbin et al., 1982). Furthermore, this sense of competence is not related to income or education, but rather to the cohesive feeling among family members.
Disability does not necessarily result in deviant family functioning for there is a certain resilience and adaptation found among families caring for children with disabilities (Dyson, 1993; Mahoney et al., 1992). In fact, one study utilizing the FFSS showed no significant difference between functioning styles within families with children with disabilities and those without (Young & Roopnarine, 1994). Furthermore, the two groups were found to be more similar than different in their assessments of functioning styles, support received, and marital stress levels.

The FFSS can be useful to health care providers as an assessment tool for identifying and building on family strengths. Interviews with families are more likely to be positive when strengths of the family are emphasized. In fact, one study reported that 50% of the mothers in their sample preferred written instruments, specifically the FFSS, versus personal interviews (Sexton, Snyder, Rheams, & Barron-Sharp, 1991). This information may help professionals as they design assessment procedures for various programs. With a proactive approach, family members’ needs can be better met as specific actions are discussed regarding how to mobilize the family's resources using the strengths of the family.

This study found that the family's perception of resources was a good predictor of family functioning, or family strength, over time. If the FFSS provides an indication of existing family strengths which can help find and utilize satisfying resources, and those resources enhance family strength as suggested by the findings in this study, then the FFSS can be considered to be a beneficial instrument. It could provide both a launching point for initial assessment and a guide for monitoring progress over time.
Limitations of Study

There is great difficulty analyzing what is occurring in the family system. The presence of a child with a disability produces complex interactions within a family (Cobb & Hancock, 1984), and it is unwise to generalize from one group to another about family responses to a child's development (Goldberg et al., 1986) mainly because each family has its own individuality (Boyce et al., 1995). It is especially difficult to generalize findings in this area of research because of the different kinds of disabilities and the differences in programs and philosophies for various intervention services.

There are notable limitations to this study. First, the respondents were mothers rather than a family unit (or fathers and mothers answering questions together). Mothers usually carry most of the responsibility for both child care and family integration and are often more affected than others in the family by the birth and care of a child with a disability (Batshaw & Perret, 1986; Holroyd & Guthrie, 1979; McCubbin & Huang, 1989). It is plausible to use mothers' perception of family life; however, conclusions drawn about a family from one person's perspective should be considered in the appropriate context. Generalizations of findings may be limited by the sample, which was primarily two-parent families. The families were involved in intervention services from the onset, which may be responsible for the moderating influence of scores for the Family Resource Scale, Family Support Scale, and Parenting Stress Index. It is also not possible to know the families' level of functioning before they received intervention, or before they began to care for a child with a
disability in their home. Finally, the scales were self-report measures and there is always a degree of error when trying to quantify human perception.

Suggestions for the Future

Menard (1991) suggested two primary purposes for longitudinal research. The first is to describe patterns of change, and the second is to establish the direction and magnitude of causal relationships. Generally, statistics do not show cause and effect; rather, they show an association (or not) between variables over time. Analyzing family strength over time, looking for patterns and establishing certain relationships between significant variables, is a worthwhile cause.

Dyson (1993) found stability over time of overall parental stress and family functioning; however, greater stress for families caring for a child with disabilities was evident and did not change over time. It is important to understand the stressors that families deal with daily (Boyce et al., 1995), so the most effective ways of serving not just the children, but children within the context of their families can be put into practice (Hanson & Hanline, 1990).

Caregivers and families want more information about their child's disability, how to teach their child, and about all kinds of available services from which their child might benefit (Bailey et al., 1992). Providing families with information is likely to increase their ability to cope with present and future demands (Patterson & McCubbin, 1983). Longitudinal studies that can demonstrate which families need what kinds of information over the life course would be of great benefit.
It is important to utilize research that builds on family strengths (Haynes, 1983). This kind of research helps define issues that pinpoint families at greater risk for unnecessary stress, lack of possible child development, and preventable negative family interactions.

The researcher brings meaning and insight to the words and acts of the participants in the study (Marshall & Rossman, 1995). The meaning we attach to the results of past and present research will direct the research of the future. Hopefully, it will be in the best interest of those being studied.
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MEMORANDUM

TO: Scott Allgood
Katrina Ericson

FROM: True Rubal, Secretary to the IRB

SUBJECT: Predicting Family Strengths in Families Caring for Children with Disabilities

December 19, 1997

The above-referenced proposal has been reviewed by this office and is exempt from further review by the Institutional Review Board. The IRB appreciates researchers who recognize the importance of ethical research conduct. While your research project does not require a signed informed consent, you should consider (a) offering a general introduction to your research goals, and (b) informing, in writing or through oral presentation, each participant as to the rights of the subject to confidentiality, privacy or withdrawal at any time from the research activities.

The research activities listed below are exempt from IRB review based on the Department of Health and Human Services (DHHS) regulations for the protection of human research subjects, 45 CFR Part 46, as amended to include provisions of the Federal Policy for the Protection of Human Subjects, June 18, 1991.

4. Research, involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.

Your research is exempt from further review based on exemption number 4. Please keep the committee advised of any changes, adverse reactions or termination of the study. A yearly review is required of all proposals submitted to the IRB. We request that you advise us when this project is completed, otherwise we will contact you in one year from the date of this letter.