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THE RELATIONSHIP BETWEEN FAMILY ADAPTABILITY AND COHESION AND THE COMPETENCE AND BEHAVIOR OF SIBLINGS OF CHILDREN WHO HAVE DISABILITIES

by

INA HODES WINICK

A dissertation submitted to the Graduate Faculty in
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Abstract

THE RELATIONSHIP BETWEEN FAMILY ADAPTABILITY AND COHESION AND THE COMPETENCE AND BEHAVIOR OF SIBLINGS OF CHILDREN WHO HAVE DISABILITIES

by

Ina Hodes Winick

Adviser: Professor Marian Fish

A systems approach, specifically the Circumplex Model of Marital and Family Systems, was used to investigate the importance of family systems characteristics to the functioning of siblings of children who have disabilities.

The Family Adaptability and Cohesion Scale (FACESII) was completed by the mother, father and an 11-18 year old non-disabled sibling in 39 families in which there is a child with a disability. Family averages of results on this measure established numerical rankings for Adaptability and Cohesion and a Family Type from the categories of Extreme, Mid-Range, Moderately Balanced and Balanced. The Family Satisfaction Scale, completed by each family member, evaluated the level of contentment with the family's manner of functioning.

Sibling functioning, represented by numerical ratings for Competence and Problem Behavior, was assessed by the Achenbach Scales. Parents completed the Child Behavior Checklists, and the non-disabled adolescent sibling completed the Youth Self Report.

Correlational analyses showed that higher levels of Adaptability and Cohesion were associated with sibling Competence, but the relationships were not statistically significant. However, there were significant negative relationships between Adaptability and Cohesion and sibling Problem Behavior. Fewer problem behaviors were reported for siblings from families which ranked higher in Adaptability and Cohesion. Family Satisfaction was not significantly related to either outcome.

Analyses of Variance were used to determine if the mean scores of the families on the dependent variables differed as a function of their responses to questions on a demographic questionnaire. Only sibling gender and the chronological age of the disabled child accounted for significant differences.

Stepwise Multiple Regression procedures were employed to assess which were the key family systems and demographic predictors of the outcome variables. The gender of the non-disabled sibling and the chronological age of the disabled sibling were significant predictors of Competence with males scoring higher than female siblings and the younger the disabled sibling the greater the Competence of the brother or sister. Gender and Family Adaptability were the best predictors of Problem Behavior as male siblings from families ranking higher in Adaptability had fewer problem behaviors.

Among the implications for theory and practice discussed are the identification of conditions under which benefits for siblings can occur.

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I am full of appreciation for my own family's never-ending encouragement. My husband, Gene, has given me full support, every step of the way. My daughters, Janet, Leigh Ann and Elizabeth, have reflected back to me all the peptalks and suggestions for structure and discipline that I used with them during their school years.

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I am thankful to the families of children with disabilities, who participated in this study. Even with many demands on their resources and energy, they took the time and care to respond to the multiple measures. Many of them shared their challenges and successes. My own life is richer, as a result.

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Also, I am most fortunate to be a School Psychologist in the Hendrick Hudson School District. It is one that through incentives and flexibility encourages its staff to pursue higher educational goals and gain more knowledge to benefit the students it serves.

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CHAPTER I

Introduction

Because of advanced technologies, it is now possible not only to save infants who previously would have died, but also to rehabilitate and extend the life expectancies of those born with impairments. Therefore, more persons with disabling conditions are alive now than in the past (Deiner, 1987).

Views about the care of individuals with disabilities have changed over the history of the United States in correspondence with variations in the role of the family as a social institution (Farber, 1986). For example, in tracing beliefs about mentally retarded individuals, it can be seen that there have been several different changes in belief systems.

In the Colonial/Revolutionary Period a family governance paradigm meant that families were entirely responsible for the care of their disabled members. During the Jacksonian era, characterized by the spread of capitalism, there was an increasing emphasis on economic rationality in family life. Therefore, children who could not contribute to their families were sent to training institutions to help them become productive family members.

Around the beginning of the 20th Century theories of family degeneracy based on genealogical analyses led to a kind of Social Darwinism. There was a trend towards families relinquishing care, treatment and education of disabled children to institutions, professionals and schools (Newman, 1983).

This paradigm changed after World War I, which was thought by many to be a result of unrestrained competition among nations. The War and the Depression helped turn attitudes from the survival of the fittest to those of social welfare. The efficacy of residential institutions began to be questioned (Farber, 1986). After World War II with the return of disabled veterans, there was increased emphasis on the concept of rehabilitation. This, as well as the Civil Rights Movement of the 1950's, inspired parents of children with disabilities and other activists for their cause to call for legislation aimed at increasing societal responsibility for the disabled, as well as recognition of their constitutional rights.

The landmark Brown vs. Board of Education decision, which held that segregation denied equal educational opportunities, led the way for P.L. 94-142, the Education for All Handicapped Children's Act. This mandated education for the disabled in the 'least restrictive' setting. Parents, who were instrumental in the implementation of this and the later P.L. 99-452 Toddler and Pre School Act, began to view themselves as not just observers of professionals, but as teachers and decision makers for their children (Skrtic, Summers, Brotherson & Turnbull, 1984).

Although such reforms have improved the situation for many of the children with disabilities, their effects in terms of costs to the family and additional responsibilities placed on its members cannot be overlooked. Deinstitutionalization has meant that disabled children will likely be living at home. "While families may have received little emotional support for the institutionalization decision and little ongoing support for the stigma of institutionalizing a child, there was at least a reduction of the daily burden and stresses assumed" (Kazak, 1987, p.187).

emotional impact of a diagnosis of a disability on a family because families, children and the nature of the disabilities differ. However, it is likely that families of children with disabilities will experience feelings, burdens and stresses that families of non-disabled children will not experience (Lyon & Preis, 1983). The child with a disability will have a major influence on the structure, function and development of a family (Simeonsson & McHale, 1981). One area where this will be evident is in sibling relationships.

The Sibling Relationship

The presence of a child with a disability affects each family member, as well as the family as a unit (Hannah & Midlarsky, 1985). However, most studies focus on the parents, particularly the mother. The influence of siblings on each other tends to be underemphasized (Bank & Kahn, 1975). Yet, "children learn from children as surely as they learn from parents" (Lamb & Sutton-Smith, 1982, p. 169). From their siblings children learn social skills, as well as language and motor skills (Powell & Ogle, 1985). Siblings often spend more time with each other than with other family members. The sibling relationship, unlike the parental relationship, will more likely be lifelong, and it is highly influential throughout the lifespan (Bank & Kahn, 1975).

Some important sibling functions are:

1. Identification or differentiation. Brothers and sisters see themselves through their siblings.
2. Mutual regulation. They experiment with roles and receive counsel or corrective input from one another.
3. Direct services. Siblings can make life easier or more difficult for one another. They can introduce their sisters and brothers to other children or serve as buffers against the outside world
4. Dealing with parents. They serve as a balance of power, joining to negotiate more strength, pioneering and translating functions (Bank & Kahn, 1975, pp.319-324).

Siblings of Children with Disabilities or Chronic Illness

Children, as well as parents, eagerly anticipate the birth of a new baby. They also experience the grief and pain if the child is disabled (Seligman, 1991). Since siblings significantly influence one another, brothers and sisters will be affected by the child with a disability or chronic illness (McKeever, 1983). Yet, their needs may be overlooked by parents and professionals (Vadasy, Fewell, Meyer & Schell, 1984).

Featherstone (1980) describes some of the ways a child's disability could affect his/her brothers and sisters. Siblings may feel physically vulnerable, wondering if their brother's or sister's disability will compromise their own health, or they may feel guilty about their own well-being. They worry about the future and whether they will eventually bear the burden of care for their disabled sibling. They have concerns about the risk factors for their own children if they become parents. Frequently, siblings feel resentment and anger towards the disabled child and suffer guilt feelings for having such emotions. They may long for a non-disabled sister or brother.

Siblings often have added responsibilities because of the disabled child and may receive less of their parents' support. There may be role confusion as to whether they are siblings or surrogate parents (Powell & Ogle, 1985).

Several researchers have noted other concerns. The normal siblings may have limitations on their life's opportunities and social mobility due to allocation of of the family's financial resources towards the needs of the disabled child (McKeever, 1983). The disabled siblings may behave inappropriately, have unusual appearances or adaptive equipment. Therefore, the normal sibling may feel embarrassed in front of peers (Atkins,1989). This adds to stress during adolescence, when the brother or sister may be confused about his/her own identity (Keydel, 1988). Because of such strain on peer relations, the sibling may experience loneliness (Bagenholm & Gillberg, 1991).

To compensate for the disabled child's low achievement, parents may expect inordinately high levels of success from their non-disabled son or daughter (Hannah & Midlarsky, 1985). Also, the healthy siblings might feel the need to counterbalance for their disabled siblings by overachieving in order to make their parents feel better (Jaffe-Ruiz, 1984). On the other hand the healthy siblings may worry about overtaking the child with a disability and attempt to make amends for this (Lapalus-Netter, 1989). These siblings may face difficulties leaving home, as their parents fear losing their "good" children.

There have been suggestions that siblings of children with physical disabilities are more likely to manifest psychological disturbance in school, such as: excessive attention-seeking, head banging, encopresis along with school absence and refusal (Harvey & Greenway, 1984). Results of many early studies point to adjustment, behavioral and academic problems, as well as negative self images and high anxiety levels among siblings of children with disabilities (McKeever, 1983).

Some psychological benefits of having a brother or sister who has a disability have also been noted, such as increased compassion, feelings of competence, tolerance and self-esteem. Many of these siblings have altruistic goals and enter the helping professions (Atkins, 1989). Those who have had frequent interactions with their sisters and brothers with disabilities tend to set life goals which involve making a contribution to mankind (Farber & Strauss, 1963). Extra impetus to excel, increased maturity and selection of leadership roles with the disadvantaged have been noted, as well (Beavers, Hampson, Hulgus, & Beavers, 1986).

It has been suggested that, rather than conforming to a consistent pattern, sibling adjustment is likely influenced by a multiplicity of variables (Murray 1990). These may include: family resources and values; interpersonal relationships; type and severity of the disability; attributes of the child who has the disability, such as age, sex and ordinal position in relation to the sibling; as well as the type and quality of the services available to the family (Trevino, 1979). Varying research procedures and methods of reporting the results also affect the ability to draw conclusions as to the impact of a child with a disability on his or her sibling (McKeever, 1983).

Chapter II includes a review of the research on many variables pertaining to children with disabilities, their siblings and their families in relation to sibling adjustment. There is a description of family systems theory and its usefulness as a framework for studying families. Methods of assessing family and child variables will be discussed in this chapter, as well. The research, theory and methods provide a rationale and specific hypotheses for this investigation.

Chapter III describes the method used in this research. This includes the selection of participants, instruments and statistical procedures.

Chapter IV provides the results that were obtained and their relationship to the stated hypotheses.

Chapter V discusses the implications of the obtained results, strengths and limitations of the study and suggestions for future research.

Chapter VI lists the references that were used to help guide a new and useful direction for research on siblings of children with disabilities. The sources also provided information about research methods.

CHAPTER II

REVIEW OF THE LITERATURE

There are five main sections in this chapter.

Section One is a review of research that has been conducted regarding siblings of children with disabilities. The literature is subdivided into three areas. The first is research centering on the nature and severity of the disability. The effects of such different disabling conditions, autism, Downs'Syndrome, hearing impairments and physical disabilities are examined. The second area is comprised of studies involving child variables, such as the age, birth order and gender of both the child with a disability and the non-disabled sibling. The third subdivision examines family factors, which may impact on siblings of children with disabilities. These include family size, socioeconomic status and parent characteristics.

Section Two introduces family systems theory, an alternative framework for studying siblings of children with disabilities. Two main family systems theoretical approaches, Structural and the Circumplex Model, are described.

Section Three describes various methods of assessing family systems characteristics and child outcome variables. Strengths and weaknesses of several methods and instruments are presented.

Section Four presents the rationale for the present study. This is based on limitations of previous research, suggestions for future research made by the authors of these studies and directions proposed by family systems theory.

Section Five lists three hypotheses which will guide the present study.

Review of the Literature

Research on the Nature and Severity of the Disability

Kazak (1986) suggests that children with different disabilities exhibit different types of personality and behavioral characteristics, which contribute to different types of family adaptation. There have been several studies that compared the psychosocial effects on parents and siblings of children with differing disabling conditions.

Autism, Downs' Syndrome, and Children Awaiting Diagnosis. Holroyd and McArthur (1976) examined mothers' reported problems in families of children diagnosed as having autism and Downs' Syndrome and in families of children awaiting diagnosis at the U.C.L.A. Neuropsychiatric Institute. Autistic and Downs' Syndrome children differ in many ways. For example, autistic children may appear normal and have adequate motor skills. Yet, they may exhibit behavioral disturbances, be severely delayed in language acquisition and have poor social interaction. Downs' children, although physically stigmatized and retarded in all developmental aspects, are usually sociable. Also, Downs' Syndrome is diagnosed at birth, while autism may not be established until a child is one or two years of age.

One hypothesis was that the mothers of autistic children would report greater interference with personal and family functioning than the mothers of the Downs' Syndrome children and those of the children awaiting diagnosis at the clinic. The researchers' premise was that autistic children are more difficult and would be a more stressful influence.

The ages of the children in the study ranged from 3-12. There were 22 mothers of autistic children, 22 mothers of Downs' Syndrome children and 32 mothers of the clinic children. The measure used was The Questionnaire on Resources and Stress, which consists of 285 true-false items, designed to assess parent problems, problems in family functioning and problems the parent sees in or for the child.

The mothers of the autistic children reported more problems and experienced more stress than those in the other groups except in the area of financial problems. Therefore, the hypothesis was supported.

Pervasive Developmental Disorder, Child Onset Diabetes and Normal Controls. Ferrari (1984) conducted research across disabling conditions as to their effects on siblings. He compared siblings of male children. One group had siblings diagnosed as having pervasive developmental disability (a highly visible condition, which included a diagnosis of autism in 14 of the 16 cases). Another group was composed of boys whose siblings had child onset diabetes. There was a control group of siblings of children with no disability or identifiable chronic illness. The mean age of the children was 9.85 years with equal numbers of siblings younger and older than the target child. Multiple measures of psychosocial adjustment were obtained from each child, his parents and teacher. These were: the Piers-Harris Children's Self-concept Scale completed by each child, the Achenbach Child Behavior Checklist completed by mothers, a social support questionnaire consisting of 10 items from the Inventory of Socially Supportive Behaviors and a short form of the Dyadic Adjustment Scale completed by both parents. The parents were asked to respond to the Piers-Harris Children's Self-concept Scale as they thought their child would have completed it, and the teacher of each sibling was sent a modified version of Coopersmith's Behavior Rating form for Appraising Assured and Confident Behaviors.

Contrary to expectations, no significant group differences among the children were found on the global self-concept measure. However, male siblings of diabetics reported the lowest levels on the happiness-satisfaction factor.

On the Children's Behavior Checklist completed by the mothers, no overall differences were found between siblings of ill and healthy children, although siblings of diabetics were reported to have the highest level of behavior problems. When the results were equated for time elapsed since diagnosis, the diabetic group results were not greater than those of the pervasive developmental disorder sample. Using factor analysis the siblings of diabetics were found to have 3 times more somatic complaints than those in the other 2 groups. This group was also noted to have the most externalizing behavior problems. Siblings of pervasive developmental disorder children were rated higher in internalizing personality problems.

An interesting finding was that siblings of normal children were rated lower in social competence by their mothers.

Parents' estimates of their children's self-concepts indicated that fathers tended to overestimate their child's reported self-confidence, and mothers predicted higher levels of anxiety for their children.

On the school teachers' ratings of self-esteem female siblings of non-chronically ill children received the highest ratings. They rated siblings of diabetics as the most prosocial.

The results of this study failed to support the hypotheses that siblings of disabled and chronically ill children are uniformly at greater psychosocial risk than those of healthy children, or that siblings of children with pervasive developmental disorder have the highest degree of behavior problems and social difficulties because of the high visibility of their siblings' disorder. However, data analyses from the various instruments show certain domains in which siblings of children with chronic illness and developmental disabilities may have particular difficulty. For example, there were more somatic complaints and externalizing behavior problems among brothers and sisters of diabetics and higher ratings of internalizing personality problems for siblings of those with pervasive developmental disorder. Gender, age and birth order effects were also demonstrated.

Autism, Mental Retardation and Non-Disabled. In a multi-faceted study, McHale, Sloan and Simeonsson (1986) compared siblings of autistic, mentally retarded and non-disabled children on a variety of dimensions to determine the correlates of individual differences in the quality of their sibling relationships. There were 30 children in each comparison group, whose ages ranged between 6 and 15 years. Within each group 6 sibling pairs were males and 6 were females. Six were target males with female disabled or non-disabled siblings. In 12 pairs the targeted child was a female with a brother, who was disabled or non-disabled. Family socioeconomic status, size and religions were similar.

Measures consisted of a rating scale of sibling behavior completed by the mother and a 26 item open-ended interview with each child concerning his or her sibling relationship. For the siblings of disabled only, there was a 36 question Siblings Problems Questionnaire. Mothers were asked to rate the target children's behavior towards their disabled or non-disabled siblings. Among the group comparisons the only significant difference was that the siblings of autistic and mentally retarded children reported a less positive family role for their siblings. Yet, these target children had more positive accounts of their circumstances, in general. On mothers' ratings of sibling relationships, the brothers and sisters of disabled children differed in that they were significantly higher on dimensions of acceptance, hostility and support, but not on embarrassment. Mothers' and children's reports showed significant correlations on every dimension, except embarrassment in which mothers' perceptions of their nondisabled children's embarrassment in relation to the disabled sibling were higher than the children's own ratings.

An examination of the interviews of siblings of disabled children shows that their responses were highly variable. Children with autistic and mentally retarded brothers and sisters had a wide range of reactions. The replies of the siblings of non-disabled children tended to cluster around the mean. This leads to the conclusion that some siblings of disabled children have fairly negative feelings about their brothers and sisters, but many others feel positively. Further analyses showed that siblings are more positive, when future concerns are perceived as minimal and when the disabled child is perceived positively by parents and peers. Feelings about the burdens of caring for a disabled sibling were not correlated with assessments of sibling relationships.

Two Swedish researchers, who also compared the diagnostic conditions of autism and mental retardation, as to their psychosocial effects on siblings, had somewhat different results (Bagenholm & Gillberg, 1991). Sixty children and young adults, ages 5-20 participated in the study. There were 20 siblings of autistic children, 20 siblings of mentally retarded children and 20 siblings of non-disabled children. The sample was matched for gender, birth order and socio- economic status. Measures completed by the target children were a semistructured sibling relationships interview and the Piers-Harris Self-concept Scale. Those completed by parents included: an interview and a 24 item scale designed to rate target children's behavior towards their disabled (or comparison group) sibling, the Rutter questionnaire concerning the behavior of the target sibling and the Eysenck Personality Inventory. In addition, there were observer ratings of family members and their situations using a 3 point level of stress scale.

Siblings of autistic children offered more negative responses on the sibling relationship interview. They had particular problems with their brothers and sisters disturbing them and breaking their things. They were also more concerned about the future. A disproportionate number of siblings of autistic children reported that they felt lonely. The researchers found no evidence that the feelings of isolation were caused by a genetic component related to autism because the siblings displayed appropriate affect when telling about such feelings.

There were no statistically significant differences in self concept on the Piers-Harris Scale, nor were parents' ratings of children's behavior towards their siblings significantly different. The parental ratings of siblings of disabled children indicated significantly more inattention, hyperactivity and conduct problems. There were more impressions of extreme stress in the families of autistic children.

Siblings of Hearing Impaired and Non-disabled Preschoolers. A study was conducted to assess the impact of hearing impaired preschool children on older siblings in the family (Schwirian, 1976). Dependent variables studied were: responsibilities related to the care of the younger child, responsibilities for general household duties, independence granted to the older siblings, and the number of the sibling's close friends.

Subjects included 77 normal older siblings of hearing impaired children and 80 older siblings of non-disabled children. The respondents were their mothers.

It was hypothesized that older siblings of disabled preschoolers would have greater child care and household responsibilities and independence with lower levels of social activities than brothers and sisters of the non-disabled children. Reports of child care responsibilities and social activities supported those hypotheses. However, in both groups, higher index scores in independence and social activities were observed for early-born older siblings, and females had higher child-care and overall responsibility scores. Stepwise regressions showed that age is the most important of the independent variables, gender is second, and sibling disability is third in explaining the variance in the scores.

The findings suggest that the presence of a hearing impaired preschooler has little effect on the behavioral areas measured. This may be due to the fact that hearing impairment is not a visible disability, and children with this disability are not viewed by non-disabled as undesirable. Mothers of these hearing impaired children had low levels of guilt as the children in the study were rubella babies, born before immunization procedures had been developed. Also, the degree of impairment is less than in many other disabilities since the children are normal in their appearance, interests, curiosity and play patterns, and they are often able to communicate with family members and their immediate play group.

Siblings of Mentally Retarded, Learning and Behavior Disordered and Hearing Impaired Children. In a study on attitude and self concept development 48 siblings, ages 12-16, of mentally retarded (MR), learning/behavior disordered (LD/BD) and hearing impaired (HI) children were compared (Kowalski, 1980). Instruments used were the Children's Self Concept Scale (CSCS) and the Attitude Toward the_Handicapped Inventory (ATHI).

Results indicated that the gender of the normal sibling and the severity of the disabling condition were not significant factors in self concept or attitude development. However, the type of disability was a significant factor on both scales. Although the self concepts of all groups was within the normal range, HI siblings scored significantly higher than MR siblings on the self concept scale. On the attitude scale HI siblings indicated significantly more positive attitudes towards the disabled than LD/BD siblings. Interesting interaction effects showed that sisters of severely learning and behaviorally disordered siblings had higher self concepts than female siblings of mild LD/BD, yet their attitudes towards the disabled were significantly more negative. Perhaps, this disapproval exists because either they do not view LD/BD as a disability, or they deny it exists in their sibling.

Siblings of Physically Disabled Children in Normal Schools, Special Schools and Nondisabled Children. There were some unexpected results in a study that compared the self-concepts of children with physical disabilities, their siblings and controls (Harvey & Greenway, 1984). There were three groups of sibling pairs with target children aged 9 to 11 and non-disabled siblings and controls ages 7 to 15 years. Of the 33 physically disabled children, 19 were diagnosed as having cerebral palsy, 9 had spina bifida, 3 had limb deficiencies and 2 bowel deformities. Twenty of these children (9 boys and 11 girls) attended a normal school, and 13 (7 boys and 6 girls) went to a special school. The Piers-Harris Self-Concept Scale for Children was administered to all of the subjects.

On the total scale results for the combined physically disabled group were significantly lower than for non-disabled children. These outcomes indicate a lesser sense of self worth, greater anxiety and a less integrated view of self. However, for the disabled children who attended special schools there was a trend to score higher than physically disabled children, who attended normal schools. The scores for the siblings of physically disabled children were also lower than the controls, but only those siblings of the physically disabled, who attended normal schools, were significantly lower.

Since usually the more seriously affected children attend the special schools, the severity of the disability does not appear to determine the self evaluation. Some possible explanations for this could be a lack of realism on the part of the special school child due to the isolation from normal children, as well as increased realism on the part of physically disabled child in the the normal school, where continuous comparison with non-disabled peers reinforces negative evaluations. The positive effects of the amount of adult attention offered to children in special schools may also be a factor.

That siblings of children with less severe physical disabilities had lower self-concepts points to the effects of having a brother or sister with a disability at the local school, rather than away at a special school. Siblings may identify more closely with a mildly disabled brother or sister. Also, a mildly disabled sibling will more often be in situations where the non-disabled sibling will be faced with embarrassment, a need to protect the disabled sibling from teasing or harm, or the necessity of explaining the disability to peers (Skrtic, in Blacher, 1984).

Summary. These studies show that there is conflicting evidence concerning the relationship between the nature and severity of a disability and sibling functioning. Results from a Swedish study indicate that autism is associated with more negative emotions towards the disabled child, worries about the future and feelings of loneliness in the brothers and sisters of affected children. However, American researchers found that siblings of autistic and mentally retarded children experienced both positive and negative feelings and attitudes about their disabled brothers and sisters. Their group ratings on checklists and interviews did not differ from those of siblings of nondisabled children.

Siblings of physiologically impaired children reported more somatic complaints than brothers and sisters of children with pervasive developmental disorders and siblings of non-disabled children. Hearing impaired preschoolers had relatively moderate impact on the numbers of responsibilities and social relationships of their older brothers and sisters. Studies have shown that siblings of moderately physically disabled children and those with less visible disabilities have lower self-concepts than brothers and sisters of children with more severe disabilities.

In a study of young children, ages 3 to 7, there were no significant self-concept or attitudinal differences between siblings of disabled and non-disabled children. Nevertheless, ratings by their mothers distinguished between the two. These mothers of disabled children reported that their normal children had more behavioral difficulties, in general, that their sons were more depressed and daughters, more aggressive.

Therefore, although under certain conditions some of the the effects of children with disabilities on their siblings may be influenced by the type and degree of disability, other variables need to be examined.

Research on Child Variables

The following studies will summarize research on such variables as chronological age, gender, birth order and age spacing as to their influence on the emotions and behavior of siblings of children who have disabilities.

Age and Gender Effects: Preschool Aged Siblings. Children, ages 3-7, who had disabled siblings were compared to a control group of siblings of normally developing children matched on family size, socioeconomic status, marital status and such sibling constellation variables as birth order, spacing and age (Lobato, Barbour, Hall & Miller, 1986). There were 24 children, who had a brother or sister with a significant disabling condition, and 22 children, whose siblings were developing normally.

Multiple, converging measures of child behavior were used in comparing these two groups in areas of strength, as well as weakness. The children were interviewed and evaluated on the Stanford Binet Intelligence Scale (Form LM). Their self-perception was assessed on the Pictorial Scale of Perceived Competence and Social Acceptance and the Family Role Play Assessment. The children's empathy and interpersonal awareness were measured by Borke's Scale. The percentages of positive and negative statements about their siblings and parents during their interviews were computed. Their definition of disability terms were elicited and coded as to accuracy. The mothers of the subjects completed the Achenbach Child Behavior Checklist. Also, the mothers responded to a questionnaire regarding the subjects' home routines in childcare responsibility, household tasks and home privileges and restrictions.

On the measures derived from direct contact with the children, there were no significant differences between the groups based on whether or not they had a disabled sibling. The mothers of the disabled children perceived their normal sons to be more depressed than the mothers in the control group. The mothers rated the female siblings of disabled children as more aggressive than the controls. When compared to siblings of normally developing children, brothers of disabled children were rated to have more behavior problems in all areas.

Results of questions about home routines showed more expectations and demands were placed on daughters by parents of disabled children, while those placed on sons were more relaxed. This lessening of structure and expectations may have contributed to perceived behavior problems.

Since both groups were similar on measures of empathy, verbalized affect towards parent and sibling, understanding of disability terms and perceived self competence and social acceptance, the negative ratings by mothers of the disabled children may have reflected parental stress factors more than the siblings' actual adjustment.

Chronological Age, Sex, Birth Order and Age Spacing. A study which investigated the effects of chronological age, sex, birth order and age spacing in relation to the impact of disabled children on their siblings involved brothers and sisters of 237 disabled children, ages 3-18 (Breslau, 1982). Of these, 49 were diagnosed as having cystic fibrosis; 77, cerebral palsy; 54, myelodysplasia; and 57, multiple disabilities. A comparison sample of 248 children, who had non-disabled siblings, was also included.

All of the children's mothers were interviewed, using a structured questionnaire. They also completed the Langer Screening Inventory, which measures child functioning at home, with peers and at school. This was analyzed according to three indices of psychological functioning: 1. Score on the Total Inventory; 2. Aggressive Behavior, which includes Conflict with Parents, Fighting and Delinquency; 3. Depression-

Anxiety, which combines Self-Destructive Behavior, Aggressive Anxiety and Isolation.

On the Total Inventory siblings of disabled children scored significantly higher than siblings of non-disabled youngsters. There were no main effects for birth order or sex. However, among the siblings of disabled children, but not for the control siblings, there was a significant sex by birth order interaction on the Total Inventory and on the Aggressive Behavior Index. Males younger than the disabled child were rated as having greater psychological impairment than those who were older. Females who were younger than the disabled child, fared better than those who were older.

The effects of age spacing were mixed. Males less than 2 years younger than the disabled child showed significantly poorer overall psychological functioning and more aggressive behavior than those born more than 2 years after the disabled youngster. In females less than 2 years younger than the disabled child, there was a trend towards higher Depression-Anxiety scores. The analyses showed no effects of age spacing on the psychological functioning of siblings older than the disabled child.

The authors interpreted these results as indicating that males, particularly those less than 2 years younger than the disabled child are at increased risk for later behavior problems, and that younger girls, spaced closely in age, tend to develop depressive anxiety symptoms. Older girls, who are often faced with increased child care responsibilities, also fared poorly.

Chronological Age and Age Spacing. Ferrari (1984) also found that among siblings younger than the disabled child lower ranks were received on parental estimates of popularity, and there were reports of more externalizing behaviors. The younger siblings, themselves, reported lower self concept. However, this researcher cautions that some of these results may be developmental effects contingent on chronological age.

Chronological Age, Age Spacing and Positive Indicators. Although the two preceding studies suggest that younger brothers of disabled children and sisters and brothers less than two years younger than the disabled child are at risk, a recent study found some positive outcomes for such children. Younger children's roles in relation to their retarded siblings were compared to those in sibling pairs without retardation

(Brody, Stoneman, Davis & Crapps, 1991). The investigators were seeking empirical evidence of earlier observations "that sibling relationships in which the older child is handicapped involve 'role crossover' in which the younger sibling continually redefines his or her role as the siblings age, eventually assuming dominant roles with the older sibling" (Brody et al, 1991, p.528).

The subjects consisted of 32 sibling pairs. Sixteen pairs included a child with mental retardation and a younger same sex sibling with 8 pairs of each gender. Nondisabled sibling pairs were matched on a case by case basis. Methods included observations of sibling interaction while playing with toys, sharing a snack and watching television. Interactions were quantified using a 10 second continuous interval recording system.

As expected, these results showed that the younger siblings of older children with retardation assumed dominant helping roles of teaching and managing behavior, more frequently than the younger siblings of children without retardation. These role asymmetries confirmed the hypothesis of "role crossover". These results can be interpreted to mean that mental retardation is a stimulus to younger brothers and sisters to develop caregiving behavior. The authors speculate that the siblings, through assuming multiple diverse roles, develop competencies that would not be acquired without the opportunity to practice these roles.

In a coordinated study, the mothers and younger siblings of these same children were interviewed about the children's childcare responsibilities, household tasks, contact with friends and out of home activities (Stoneman, Brody, Davis, Crapps & Malone, 1991). In relation to the comparison sample, younger siblings of children with mental retardation assume the childcare role typically reserved for the oldest children in the family. Although older siblings of retarded children have increased childcare responsibilities, this represents a manifestation of normal roles. However, for the younger siblings in this study, the roles were transposed. It has been theorized that this change in the family life cycle in which the younger child surpasses the disabled older sibling may make the younger sibling feel guilty or draw back (Trevino, 1979). Nevertheless, results of the present study indicate that this 'role reversal' does not lead to more conflicted interactions with their siblings nor to restricted access of the younger brothers and sisters to out of home social activities or time with friends.

Summary. Research on child variables indicates that females who are older than the child with a disability and males who are younger have more behavioral difficulties. Among those close in age to the child with a disability, younger male siblings have been rated as more aggressive, and younger female siblings have been found to experience more internalizing disorders. Nevertheless, a recent study found mental retardation a stimulus for younger siblings to learn competencies that they would not have developed if they did not have a sibling who had a disability.

Research on Family Factors

Included in this section are studies that investigate how family size, socioeconomic status, place of residence of the child with a disability and parental emotional state impact on the functioning of siblings of the disabled.

Family Size and Socioeconomic Status. It has been suggested that an atmosphere of normalcy increases with the number of normal siblings in a family in which there is a child who has a disability, because there are additional brothers and sisters to share the responsibilities (Trevino, 1979). Also, there are more children to temper the expectations of the parents that the disabled child cannot meet (Correa, Silberman & Trusly, 1986). A study conducted in England provides some modifications to this theory (Gath, 1974).

In 104 families, each having a mongol (Downs' Syndrome) child living at home, parents and teachers completed behavioral questionnaires devised by Rutter for 174 school age siblings. The mean age of the 89 girls was 9.6 and of the 85 boys, 10.58 years of age.

There was a birth order effect with first born girls rated more deviant than later born girls. However, there was no such effect with boys. More boys than girls in the sample as a whole were described as deviant, which is similar to statistics for the population.

In families of 2-3 siblings, 6 of 35 girls were rated deviant. In those of 4-5 children 1 out of 31 received this rating. In families of 6 or more siblings, 7 of the 17 girls were considered to be deviant. There was a significant correlation between family size and socially disadvantaged families. A large family size was found to be a major disadvantage for girls. Although boys from these low socioeconomic status families had high ratings of deviance, these ratings were not significantly different from boys in such families in which there were no disabled children. However, the sisters of the disabled in these families were more at risk. Particularly vulnerable were elder sisters, who were first born and more than three years older than the disabled child, as it is hypothesized that they are expected to perform more domestic responsibilities.

Therefore, family size, per se, does not in itself mitigate adverse effects for siblings of handicapped children if financial and social support are not available.

Place of Residence of the Disabled Child. Fowle (1968) compared families of retarded children who had been placed in institutions to families who had retained such children at home. In each of the two conditions, there were 35 sets of parents and children matched on chronological age, gender of retarded child, socioeconomic status, ethnic background and geographical location of family dwelling.

Two measures were used. The first was the Farber

Index of Marital Integration, which investigates the husband's and wife's consensus on their ranking of domestic values and mutual coordination of domestic roles. The second instrument was the Farber Sibling Role Tension Index, which contains questions about the behavior of the retarded child and the relations between that child, his parents and siblings.

On the Marital Integration Index there was no significant difference between the two groups. However, there was significantly higher marital integration in the group of parents whose children had been hospitalized for more than 2 years. On the Sibling Role Tension Index, the role tension in families whose mentally retarded child had been kept at home was significantly higher. Older female siblings of mentally retarded children living at home had significantly higher reports of role tension than female siblings of mentally retarded children living in hospitals. Among male older siblings, there were no significant differences.

<u>Maternal Self-Concept.</u> Auletta (1989) examined mothers' self-concepts as predictor variables for the self-concepts of adolescent siblings of disabled children. He employed self reports on the Tennessee

Self-Concept Scale in his research, comparing siblings in 70 families in which there was a profoundly retarded child, who was 5 years of age or older, with siblings in 70 families, where there were no disabled children.

Results showed that, as a group, the target children did not differ in their self-concepts from the comparison sample. In fact, the siblings of disabled children reported all levels of self-concept, as did the brothers and sisters of non-disabled children. Demographic variables such as: race, income, or maternal marital status did not appear to contribute to the outcomes, although the slightly greater numbers of siblings in the mentally retarded families may have had an effect.

An especially interesting finding was that the amount of variability accounted for by the mothers' self-concept was small. Therefore, the author recommends focusing on factors other than maternal self-concept, such as marital adjustment and maternal support, in studying the self-concepts of brothers and sisters of disabled children. Similar findings were in a study reported earlier which compared siblings of children with pervasive developmental disorder, child onset diabetes and no identifiable chronic illness in which mothers' ratings of social support and marital adjustment were significant predictors of their children's self-concepts (Ferrari, 1984).

Parental Adjustment. Psychosocial risk and resistance factors were studied in 93 juvenile rheumatic disease (RD) patients and their families, 72 of their healthy siblings and 93 healthy children and their families (Daniels, Moos, Billings, & Miller, 1987). Three domains of variables were included. The first consisted of Family Background Variables, such as father's occupational status, father's and mother's education, family size, marital status and years married, ethnicity, age, child age and gender. The second domain investigated Child Psychosocial Functioning Variables as measured by the Health and Daily Living Form (HDL) which was completed by mothers. This taps 3 indices of child functioning, Total Adjustment Problems, Physical Problems and a Multiproblem Index to identify children with a potentially serious level of dysfunction. The third domain involved Risk and Resistance Factors, hypothesized as parental functioning and family stressors, which were measured by items on the HDL, and family resources, indexed by the Family Environment Scale (FES).

The findings indicated that parental dysfunction, especially depression and physical symptoms, is linked to more psychological and physical problems for the afflicted children and to the poorer adjustment of their siblings. In addition, lack of family cohesion and expressiveness was particularly associated with sibling adjustment problems.

Since this study was based on parental reports, and depressed mothers saw their children as having more problems than their husbands, the results may be negatively distorted. However, mothers typically spend more time with their children, so their ratings may be more accurate, after all.

The authors conclude that good parental functioning with low family stress and a supportive and expressive family milieu helps children to manage their problems.

Summary. This review of research on family factors shows that some demographic elements as well as family support and emotional climate can affect the adjustment of the siblings of disabled children. For example, female siblings of retarded children from large, low socioeconomic status families were found to have higher ratings of behavioral deviance than those from smaller families. Although mothers' self-concepts do not appear to be linked to the self-concepts of their non-disabled children, their ratings of social support and marital satisfaction are associated with sibling adjustment. Parental depression and physical symptoms interfere with sibling adjustment, while a supportive expressive milieu contributes to it.

Summary of Research on Nature and Severity of the Disability, Child and Family Factors

A great many of the studies of siblings of disabled children have focused on negative outcomes and an orientation towards pathology (Daniels, Moos, Billings & Miller, 1987; Holroyd & McArthur, 1976; Schwirian, 1976). However, the results do not support the hypothesis that siblings of disabled children have overall poorer adjustment than brothers and sisters of children who do not have disabilities. Researchers are becoming more aware that the negative effects of disabled children on their siblings are overstated (Tritt & Esses, 1988). More attention needs to be given to those siblings who cope well. It is important to identify the conditions under which important benefits for siblings of disabled children emerge (Hannah & Midlarsky, 1985).

Many positive effects of having a sister or brother with a disability have been demonstrated. These include: higher ratings of social competence for these siblings (Ferrari, 1984), caregiving behaviors in younger siblings (Brody et al, 1991), increased tolerance and higher empathy (Bagenholm & Gilberg, 1991) as well as altruistic goals (Atkins, 1989).

Although the group of studies which has been reviewed contributes to our knowledge of siblings of disabled children, none adequately explains why some brothers and sisters are negatively affected and some are high functioning. Therefore, it may be more constructive to consider an illness or disability as a stress factor mediated by other individual and family relationship factors (Lobato, Faust & Spirito, 1988). Although some parental and family factors linked to sibling adjustment have been reported, patterns developed and maintained in families, that regulate the behavior of its members, need to be examined (Paget, 1987). Rather than a static view, studies should present a dynamic view of family interactions, which shows the changes in the family as well as its continuity over different stages of development (Vadasy, Fewell, Myer & Schell, 1984).

A Systems Approach

To address some of the limitations of research on siblings of the disabled, it will be helpful to conceptualize the child with a disability, his/her siblings and other family members as part of a living system, which operates according to established rules and principles, as described in Von Bertalanffy's general systems theory (Nichols, 1984). According to this theory, systems are open to and regulated by feedback. There is continuous input to the system, which is acted upon and modifies its members. There is also uninterrupted output to the environment.

One property of an open system is Wholeness. Because a system acts as a whole, a change in one part will affect the entire system. Therefore, in the family system, a disability in one family member will have an impact on the whole family, which will, in turn, affect the disabled person (Seligman, 1991).

Equifinality is another property of a living system. Different initial conditions may lead to the same results, and different results may stem from identical causes. Therefore, in a family the initial condition or event will be outweighed by the family's ongoing interactional patterns and responses to stress. The inconclusiveness of previous research results as to the impact of a disabled child on his/her siblings is quite plausible when viewed in this context. The way the family organizes and interacts in relation to the disability has more of an effect on its members' reactions than the disability, itself.

One family systems theory is the Structural approach formulated by Salvador Minuchin (1974). Family Structure describes the continuous modes of interactions of family members or subsystems with each other (Nichols, 1984). Structures are formed by cultural expectations, those of the family of origin models, extra family social relationships and life stressors (Carlson, 1987).

Subsystems are composed of family members who join together for various functions. A person can have roles in more than one subsystem. For example, there may be four subsystems in the family of a disabled child (Yura, 1987). These are: (1) The marital subsystem, which involves the interaction between the marital partners; (2) The parental subsystem, which includes the parents' interaction with the disabled child as well as with the other siblings; (3) The sibling subsystem, which involves interactions among the siblings, including the disabled child; (4) The extra family subsystem, which is composed of the extended family, friends, and members of the community. Each of these subsystems accommodates and develops complementary patterns in relation to the child with a disability.

The functions of each subsystem need to be well defined. In families that work well, these roles are mutually supportive and permit growth and development (Mason, Kruse & Kohler, 1991). However, at times, there are violations of function boundaries (Aponte & Van Deusen, 1981.) For example, in families in which there is a child with a disability, there may be a "parental child" who assumes responsibilities for the sibling with a disability that should be assumed by the parents.

"Boundaries are invisible demarcations regulating the amount of contact between subsystems" (Fish, 1988, p. 293). When there is limited contact within and between subsystems, individuals are relatively isolated and autonomous. A positive effect of this is the fostering of independence. The negative side is that there can be a lack of warmth and nurturance in such disengaged families. For example, parents of a child with a disability may be so involved in the grieving process over the loss of a perfect child that in their chronic sorrow, they are disengaged not only from their special needs child, but from their other children as well (Yura, 1987). The communication, concern, support and affection needed by the children are not forthcoming (Holman, 1983). Such processes are alluded to in the research on siblings of children with disabilities (Daniels, Moos, Billings & Miller, 1987; Ferrari, 1984; Lobato, Barbour, Hall & Miller, 1987). Yet, they have not been specifically identified and studied.

In contrast, enmeshed families offer support to the extent that interferes with moves towards autonomy (Nichols, 1984). Perceptions of each other are structured around protective concerns (Minuchin, Baker, Rosman, Liebman, Milman & Todd, 1975). The parents in such families overreact and restrict experience, which fosters helplessness and insecurity in their disabled child. Siblings of these children are restricted in their expression and may fail to achieve reasonable differentiation from the family (Fine, 1991).

Matrix of Identity is a Structural Theory term, which describes the family's function of promoting both feelings of belonging and a sense of autonomy in its members (Fish & Jain, 1988). Minuchin theorized that all families fall along a continuum between the extremes of rigid and diffuse boundaries (Perosa, 1980). A family needs to have flexible boundaries in order to adapt to the task at hand. Depending on the circumstances boundaries can be enmeshed at times, and disengaged at others. For example, when children are very ill, mothers and fathers tend appropriately to be more enmeshed with the children. When they are capable of self-care, parents may be more disengaged.

Adaptability describes the family's ability to change in response to different circumstances in ways that maintain continuity and enhance the growth of its members (Minuchin et al, 1975), (Seligman, 1991). Rigid families find it difficult to bend in response to stress. At the opposite extreme, chaotic families are unstable and inconsistent in such circumstances. For example, members of a rigid family would have problems broadening their roles in order to adjust to the demands of caring for a child with a disability. In a chaotic family, frequent changes of rules and leaders in times of crisis would add to the children's feelings of instability and insecurity. Healthy families have clear boundaries and lines of authority, but there is flexibility to accommodate changes and shifts (Fine, 1991).

In Minuchin's view, the family progresses through identifiable, predictable stages in its development. This is known as the Family Life Cycle (Carter & McGoldrick, 1980). Whether these stages are crises or transitions depends on the ability of a family to modify its structures to accommodate changing needs (Carlson, 1987).

Families of chilren with disabilities will find this progression more challenging. A family with a retarded or physically disabled child may have been able to adapt when the child was young, but as he/she grows older and the disparity between the child and peers is more apparent, stress may overload the family system and dysfunctional patterns may appear (Minuchin, 1974). For example, the onset of puberty increases the awareness of parents of a mentally retarded child of the differences between their child's physical appearance and his/her mental and social abilities (Wikler, 1981). Maintaining flexible boundaries is required of parents of normal adolescents. For parents of physically and mentally disabled boys and girls it is much more problematic to know when to "let adolescents go" and when to "shelter their retreats" (Carter & McGoldrick, 1980, p. 14).

Therefore, Minuchin and other structural family theorists do not characterize families as normal or abnormal on the basis of presence or absence of problems, challenges and stresses, but rather on the family's stability and adaptability in the face of these (Jain, 1989; Walsh, 1982).

The Circumplex Model

Minuchin developed his theories while working as a therapist with children from the slums (Aponte & VanDeusen, 1981). These were later extended to treatment of psychosomatic families in which a member had an illness with an organic basis, the focus on which caused deviation throughout the system (Minuchin et al., 1975). The Circumplex Model of Marital and Family Systems emphasizes normal family processes. It was developed to help link theory, practice and research (Olson, 1993). The two primary dimensions of the Circumplex Model are cohesion and adaptability or flexibility. These were derived from investigating the underlying dimensions of Minuchin's (1974) major concepts and other theories about families from many social science fields, including: psychiatry, social psychology, family therapy and anthropology (Olson, Sprenkle & Russell, 1979).

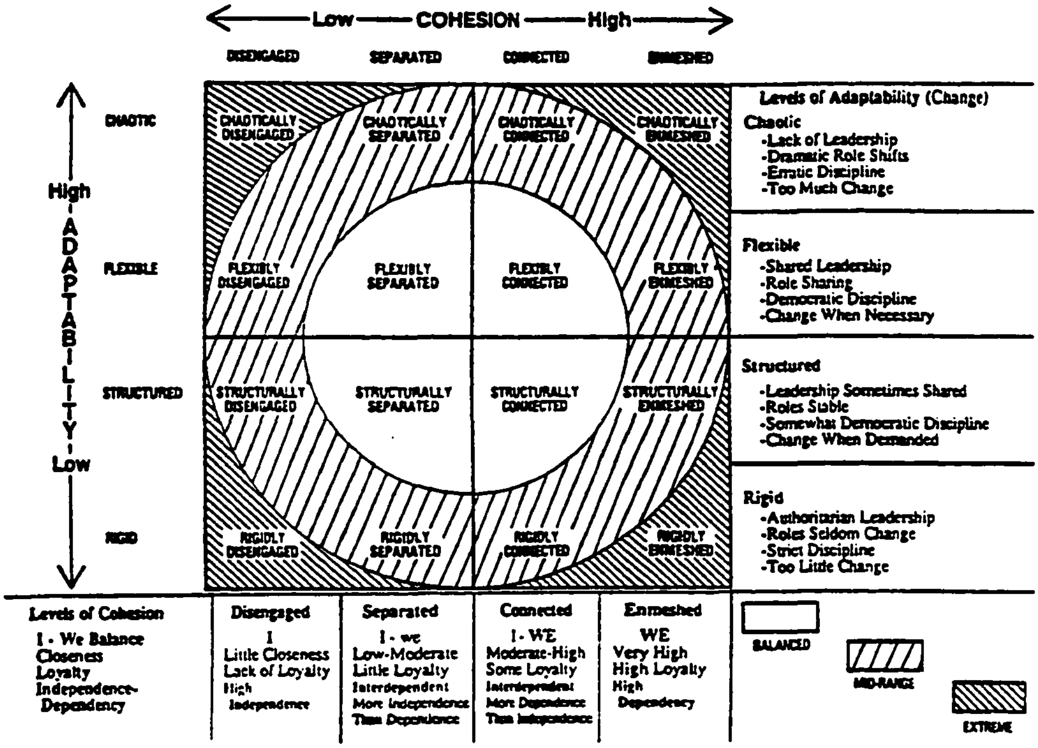
Family cohesion assesses the degree to which family members are separated from or connected to their family. Cohesion is measured by the specific concepts of: emotional bonding, boundaries, coalitions, time space, friends, decision making, and interests and recreation (Olson & Portner, 1983). Extremely high levels of cohesion are considered to be enmeshment, while lower extremes are seen as disengagement. These are similarly described in Minuchin's theory.

Family adaptability or flexibility refers to the family system's capacity to change "its power structure, role relationships and relationship rules in response to situational and developmental stress" (Olson & Portner, 1983, p. 300). Specific variables of this dimension are: family power structure, negotiation styles, role relationships and relationship rules, and feedback (Olson, Sprenkle & Russell, 1979). Families with extremely high levels of adaptability are conceptualized as chaotic, while those at the other extreme are considered rigid.

Communication is a third dimension of the Circumplex Model (Olson, Russell & Sprenkle, 1983). It is considered to be a facilitating dimension. This is because positive communication skills, such as empathy, reflective listening, and supportive comments, help family members to share their needs and wants in relation to cohesion and adaptability. Negative communication, such as veiled messages, double binds, and criticism, inhibits family members in the conveying of their feelings and restricts their movement on the cohesion and adaptability dimensions.

There are four levels of family cohesion and four levels of family adaptability within the Circumplex Model. By combining these, sixteen types of marital and family systems can be identified. Four are moderate on both dimensions (balanced types), eight are extreme on one dimension and moderate on the other (midrange types) and four are extreme on both dimensions (extreme types). The four moderate and four extreme are the most common. It is assumed that the eight other types are less frequent, because if a couple or family is extreme on one dimension, they are likely to be extreme on the other. (See Figure 1)

Figure 1: CIRCUMPLEX MODEL - Couple & Family Map



Note: Figure 1 is from "Circumplex Model of Family Systems VIII: Family Assessment and Intervention," by D. H. Olson, 1989, in D. H. Olson, C.S. Russell & D. H. Sprenkle (Eds.), <u>Circumplex Model: Systemic Assessment and Treatment of Families,</u> (p. 10) New York: The Haworth Press. Reprinted with permission.

Balanced levels of cohesion and adaptability are considered to be most functional to individual and family development. The terms for the four balanced types are: Flexibly Separated, Flexibly Connected, Structurally

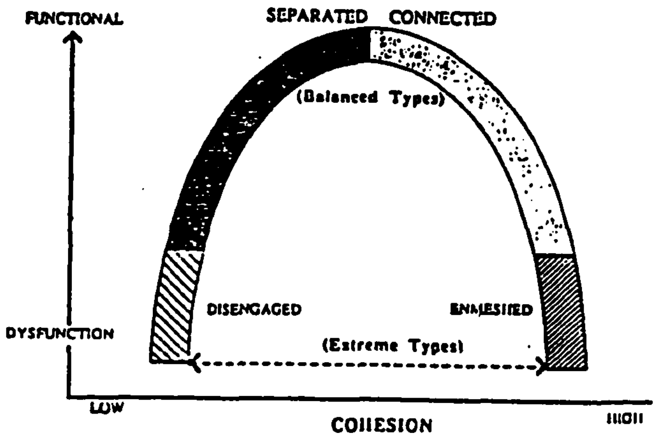
Separated, and Structurally Connected. The four extreme types are: Chaotically Disengaged, Chaotically Enmeshed, Rigidly Disengaged, and Rigidly Enmeshed. According to the Circumplex Model, families rank on a continuum between balanced and extreme. The actual percentages of parents and adolescents in each family type from a sample of 2224 parents and 421 adolescents are as follows: Extreme family types, parents 15% and adolescents 19%; Mid-Range, 17% and 26%, Moderately Balanced, 15% and 19%; and Balanced, 53% and 46% (Olson et al, 1989).

Extreme types can be functional at times. For example, there may be maximum cohesion during a family crisis, such as the death of a family member. Also, there is a sizeable minority of families whose norms emphasize physical and emotional togetherness or enmeshment. This is typical in some ethnic groups, such as Slovak-American, Puerto Rican and Italian families and religious groups, such as Mormons and Amish families (Olson, 1989). Therefore, family satisfaction with the current system is important to consider when assessing families.

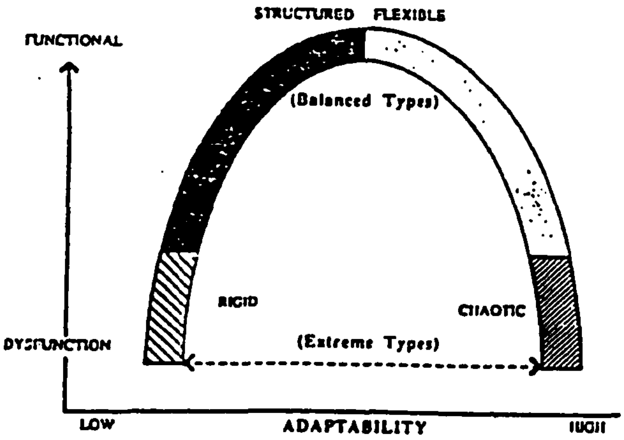
Initially, central levels of adaptability and cohesion on the Circumplex Model were considered to be conducive to optimal family functioning. A curvilinear relationship was conceptualized with high functioning families maintaining a balance between disengaged and enmeshed on the cohesion dimension and between rigid and chaotic on the adaptability dimension. Families at the extreme ranges were considered to be problematic. (See figure 2).

FIGURE 2: CURVILINEAR DYNAMICS OF THE CIRCUMPLEX MODEL

FAMILY COHESION



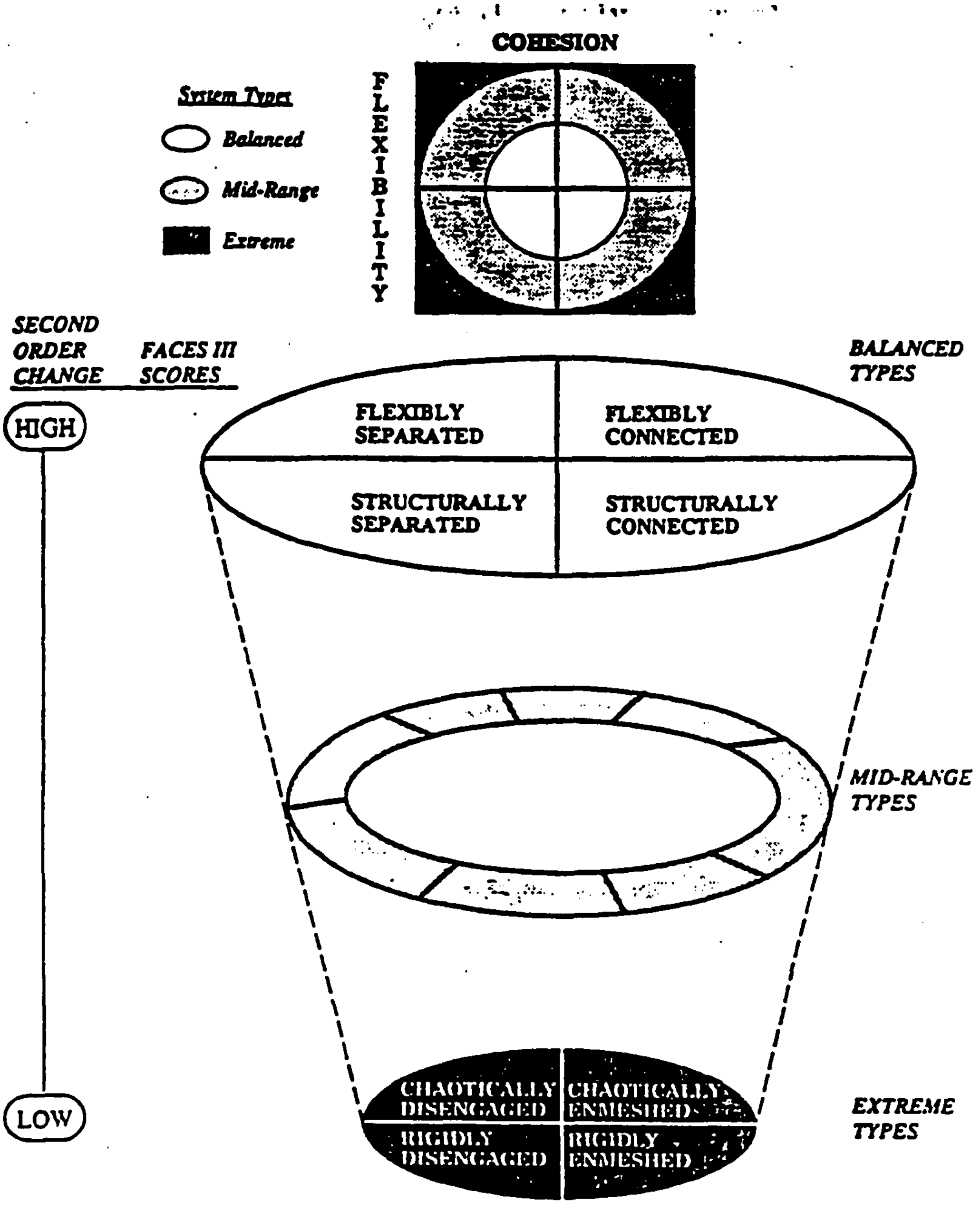
FAMILY ADAPTABILITY



Note: Figure 2 is from "Utility of the Circumplex Model with Severely Dysfunctional Family Systems" in D. H. Olson, C. S. Russell, & D. H. Sprenkle (Eds.), Circumplex Model: Systemic Assessment and Treatment of Families (p. 58), New York: The Haworth Press. Reprinted with permission.

Subsequent analyses have shown that dynamically, there is more similarity between the four balanced types with each other and between the four extreme types with each other than there is between the balanced and extreme types. A three-dimensional version of the Circumplex Model represents improvements in the model, as it can incorporate first-order and second-order change. First-order change, which is curvilinear, occurs within a given family system and represents a change in degree (Olson, 1993). For example, too much change as seen in chaotic systems or too little change as in rigid systems represent less functional patterns. Second-order change describes movement from one system type to another type of system. This is linear, shown by higher capacity for change in the balanced systems and lower levels in extreme systems. For example, when a family is faced with a major stressor, such as the care of a child with a disability, balanced family types, as compared to extreme types, will be more capable of changing their family system in order to cope more effectively. (See figure 3).

Figure 3 Three-dimensional family Circumplex Model



Note: Figure 3 is from "Circumplex Model of Marital and Family Systems: Assessing Family Functioning," in F. Walsh (Ed.), Normal Family Processes, (p.110), New York: The Guilford Press.

This illustrates that the 4 Balanced types (Flexibly Separated, Flexibly Connected, Structurally Separated and Structurally Connected) are more similar to each other than they are to the 4 Extreme types (Chaotically Enmeshed, Chaotically Disengaged, Rigidly Enmeshed and Rigidly Disengaged). Balanced family types are indicated by high rankings on the dimensions of cohesion and adaptability. Families balanced in cohesion allow their members to experience both independence and connectedness in relation to their family. Balance in adaptability means that the system is stable but is open to change when necessary.

Assessment

This section describes general methods of studying families, as well as specific assessments based on the Circumplex Model. Also, described are ways of evaluating child functioning.

Methods for Assessing Family Functioning

There are two broad categories of family assessment. They are observational/behavioral and self report. These can be further categorized into four methodological approaches for studying the family, which are the insider's subjective and objective and outsider's subjective and objective perspectives (Sigafoos, Reiss, Rich, & Doublas, 1985). A research method for obtaining insider's subjective information is a self report instrument. Insider objective information is acquired through self-monitoring. Outsider subjective methods are clinical ratings, while outsider objective methods are structured observations. The scope of the evaluation differs in the various methods. Outsider ratings are often based on observations of family members engaged in structured tasks such as the Simulated Family Activity Measurement (SIMFAM) (Russell, 1979) and the Card Sort Procedure (CSP) (Kog, Vertommen & Vandereycken, 1987). These may be characterized as microscopic assessments. Family self reports, which are insiders' perspectives, are based on more global experiential concepts (Kog, Vertommen, & Vandereycken, 1987). Both of these methods provide unique and useful information about the family system.

One of the early tests of the Circumplex Model involved 31 parents from Catholic families and their adolescent daughters (Russell, 1979). They were observed in a structured family interaction game, the SIMFAM, and they also completed questionnaires measuring the variables of cohesion and adaptability. The families were subdivided into groups according to the level of difficulty they had with their adolescent daughter. Results indicated that higher family functioning was associated with moderate cohesion and adaptability, while lower family functioning was linked to extremely high or low ratings on these dimensions.

The authors of the Circumplex Model have developed several instruments, including the Clinical Rating Scale (Olson, 1989), the Parent Adolescent Communication Scale (Barnes & Olson, 1982 in Olson et al., 1992) the Family Satisfaction Scale (Olson & Wilson, 1982) and the widely used Family Adaptability and Cohesion Scale (Olson, Sprenkle & Russell, 1979), to assess family functioning according to their model. The self-report measure known as the FACES, an acronym for Family Adaptability and Cohesion Scale, was constructed to aid in the empirical assessment of family type (Olson, Sprenkle & Russell, 1979). It was designed to be administered to one or more family members, including children. Some other family functioning measures, such as the Family Evaluation Form, constructed by Emery, Weintraub and Neale in 1980, and the Family Functioning Index, developed by Pless and Satterwhite in 1973, exclude children from the assessment process. Therefore, FACES provides a less distorted, composite view of the family (Forman & Hagan, 1983).

The original FACES contained 111 items, which assessed individual family member's perceptions of the family's adaptability and cohesion. For empirical validation the scale was administered to 410 adults (Olson & Portner, 1983). Thirty five marriage and family counselors assessed its clinical validity. The instrument was used in a study of 210 parent/adolescent triads. The alpha reliability for family cohesion was .83 and for family adaptability .75. Over 1,200 studies have been completed or are in progress based on the Family Circumplex Model that use forms of the FACES assessment scale (D. H. Olson communication, April 1, 1993).

In one study, the FACES was administered to 58 father-absent male adolescents and their mothers (Rodick, Henggeler, & Hanson, 1986). Half of the adolescents had been identified as juvenile delinquents, and half were non-delinquents. A chi-square was used to evaluate the frequencies that FACES scores of the delinquent and non-delinquent families were placed in the balanced versus the extreme ranges in the Circumplex Model. Results showed that only 7% of the delinquent families scored in the balanced range, while 69% of the non-delinquent families showed balanced cohesion and adaptability. This is impressive support for the scale's validity.

The Family Adaptability and Cohesion Scale (FACES) was used to test the Circumplex Model in a study of families at risk for destructive parent-child relations in adolescence (Garbarino, Sebes & Schellenbach, 1984). The sample consisted of 62 families in which there was a youth between the ages of 10 and 16 and two parents, who were referred because of the adjustment problems of the adolescent. First, the Adolescent Abuse Inventory was administered to help determine which families were at high risk or low risk for abuse. Then, participants completed a battery of tests, which included the FACES and the Achenbach Child Behavior Checklist. Adolescents in the high risk families characterized themselves as in the extreme or chaotic range on the adaptability/ flexibility subscale of the FACES and nearly in the enmeshed category on the cohesion scale. Mothers and fathers in the high risk group joined the adolescents in rating their families as extreme on the adaptability and cohesion scales. Therefore, the Circumplex Model as measured by FACES proved to be useful in distinguishing between families at high and low risk for abuse.

The first revision of the FACES, known as FACES II, consists of 30 one-sentence descriptions of family characteristics. FACES III, a 20 item scale, is made up of items developed from the original sample (Olson, 1986). It has been used in many research projects, but FACES II has been found to have at least three advantages over FACES III (Olson et al, 1992). First, the alpha reliability is higher in FACES II due to the fact that it has more items. The alpha reliability for the total scale is .90 for FACES II and .68 for FACES III. Second, although the correlation between cohesion and adaptability is higher in FACES II than in FACES III, .65 as compared to .03, the common variance has not been problematic and the unique variance is evident. Third, the concurrent validity is higher for FACES II than for FACES III. FACES II has higher correlations with other instruments which measure similar constructs. For example, when comparing the Dallas Self-Report Family

Inventory (SFI) to FACES II and III correlations for adaptability were .93 and .79 and for cohesion .84 and .45. Due to these reasons the developers of the Family Adaptability and Cohesion Scales are recommending using FACES II rather than FACES III for practice and research.

Methods for Assessing Child Functioning

Behavior rating scales make use of a global, outsider perspective. They are pencil and paper devices, which may be used by a caretaker or observer of a child, such as a parent or teacher, to assess the child's behavior over an extended period of time (Martin, Hooper & Snow, 1986). The items are presented in a standardized manner along with normative data based on a comparison population. Some advantages of rating scales are as follows: first, they usually consist of a substantial number of items covering a broad range of behaviors (Elliot, Busse & Gresham, 1993); second, observations are made in the subject's normal environment; third, raters, such as parents and teachers, are familiar to the person being observed, so the subject is not inhibited due to the presence of a stranger in the setting; fourth, parents, as raters, are knowledgeable of their children's behavior in a wide variety of settings over long time periods; fifth, teachers, in their role as educators, observe children of similar age daily under consistent circumstances; sixth, behavior rating scales are low cost and usually consume little time; finally, they are more objective and reliable than projective techniques or clinical interviews.

Some criticisms of rating scales used by persons, such as parents and teachers, are that these are prone to both deliberate and inadvertent bias. Observer bias can result from both emotional factors stemming from the nature of the relationship between subject and observer, and the mental processes, such as memory and awareness, involved in rating. Response bias can include: halo effects, due to the rater's failure to distinguish among distinct and independent facets of the subject's behavior; leniency or severity bias occurring when raters use one or another extreme of the scale; and errors due to restriction of range when the rater consistently adheres to the central range of the scale.

To account for and control for all of these sources of variance and reflect all that the assessor intends and does not intend to measure, the Aggregation Principle may be implemented. This principle provides for two or more observations or measurements of the same characteristic to be added together. This can be accomplished by using multiple raters. For example, the mother, father and teacher. Also, observations can take place in more than one setting, such as both at home and at school. The use of both behavioral observations and self reports can help control for bias.

There are several scales which have been designed to rate children's behavior. The Revised Behavior Problem Checklist by Quay and Peterson (1987) can be used by parents and teachers to assess problem behaviors in children ages 5 to 16. Its drawbacks are that it focuses on problem behaviors with no provisions for assessing competence. Also, it was designed to be used by teachers, so parental perceptions cannot be included.

The Personality Inventory for Children is another widely used assessment of the behavior, affect and cognitive characteristics of children ages 3 to 16 (Wirt, Seat, Broen, & Lachar, 1981). The rater is one of the child's parents. This instrument does assess prosocial skills. However, it has limitations in that there are no provisions for teacher or self ratings and it is in need of a national restandardization (Knoff, 1989).

The multiaxial empirically based assessment system developed by Thomas M. Achenbach and Craig Edelbrock controls for the shortcomings of other similar measures and provides for coordinated information from parents, teachers and the target children (Achenbach, 1991). Included in the Achenbach Scales are the Child Behavior Checklist, the Youth Self Report and the Teacher Report Form. In addition to providing a comprehensive scale of problem behaviors, they examine the competence of a child as assessed by his/her school achievement, participation in sports and activities, household chores and social relationships.

Rationale for Study

The research has shown that there is a range of functioning from positive to negative in siblings of children with disabilities. Studies investigating the impact of disability factors, child characteristics and family demographics have not fully explained why some siblings of children with disabilities have a difficult adjustment, and why others cope well. Often, this research relied on the mothers' reports, rather than including the fathers', teachers' and the siblings' own views.

In family systems theory the presence of a child with a disability can be viewed as a stressor. Positive or negative outcomes stem from the family's ability to support its members and mobilize in relation to such a stress factor.

This study will use family systems theory, specifically the Circumplex Model of Marital and Family Systems, to investigate the relationship between family Adaptability and Cohesion and the Competence and Behavior of siblings of children with disabilities. It will utilize methods that will avoid some of the shortcomings of previous studies of siblings of disabled children. Measures will assess dynamic family interactions, so that the impact of a disabled child on the entire family system is considered and the influence of the various family members on that child is taken into account. Also, rather than relying on only one dimension, assessment of the functioning of the siblings of children with disabilities will use multiple raters, the mother father and teacher or counselor of the sibling. The design incorporates both internal and external measures, as the siblings' self-reports will be included along with the outsider observations. The aim of the study will be to identify family processes which contribute to positive functioning of siblings of children with disabilities, rather than focus exclusively on evidence of pathology in these young people.

Hypotheses

Based on the Circumplex Model of Marital and Family Systems certain hypotheses can be made about the functioning of families and siblings of children with disabilities.

Hypothesis I: Families of children with disabilities will be represented along a continuum ranging from Extreme to Balanced Family Types.

Hypothesis II: Siblings of children with disabilities from families which rank higher in Adaptability and Cohesion will demonstrate greater Competence and fewer Problem Behaviors than those from families with lower Adaptability and Cohesion rankings.

Hypothesis III: Siblings of children with disabilities from families which rank themselves as having higher levels of Satisfaction, will have increased Competence and fewer Problem Behaviors than those from families which rate themselves as having lower levels of satisfaction.

CHAPTER III

Method

Research Participants

Thirty-nine families took part in the study. These were composed of the mother, father and one or more non-disabled adolescent siblings (ages 11-18) of a child, who has a disability. As defined under Title I of The Americans with Disabilities Act (ADA), a 'disability' is 'a physical or mental impairment that substantially limits one or more major life activity' (Soltis & Siegel, 1991). This definition allowed for the inclusion of families whose children had many different kinds of disabilities.

This study was limited to families in which there is a mother and father living together because the family system is the unit of study and because the measures that were chosen to evaluate the family system are designed for family members living together. Also, families in which there are both a mother and a father were designated because this study is intended to overcome limitations of earlier research which relied primarily on mothers' observations and reports. Adolescent siblings were specified because this age group is considered to have the necessary reading skills and maturity to respond to the self-report measures that were used to describe the families. Also, the outcome measures that were selected were designed for boys and girls ages 11-18.

Design

The purpose of this non-experimental research is to answer questions about the relationship of family systems characteristics, such as Cohesion, Adaptability, Family Type, and Satisfaction to the adjustment of siblings of children with disabilities in terms of their observed and self-perceived Competence and Problem Behaviors. Specifically, the study is designed to test 3 hypotheses: The first proposes that a full range of Family Types will be included in the sample of families of children with disabilities. The second indicates that the siblings of disabled children from families having higher degrees of Adaptability and Cohesion will demonstrate greater Competence and fewer Problem Behaviors than those from families where there is lower Adaptability and Cohesion. The third postulates that higher degrees of Family Satisfaction are associated with greater Competence and fewer Problem Behaviors of siblings of children with disabilities. To assess the independent variables, Family Cohesion, Adaptability and Family Type, the mother, father and sibling completed self-report measures. According to their scores, each family member was ranked for Cohesion on a continuum ranging from Disengaged to Very Connected, and each family member was ranked for Adaptability on a continuum ranging from Rigid to very Flexible. The average of the combined rankings on Cohesion and Adaptability, divided by two, corresponded to a rank on a continuum ranging from Extreme to Balanced Family Types. The positions of the families on this continuum provided the data for Hypothesis I.

Hypothesis II examines the relationship between Family Cohesion and Adaptability and the sibling variables of Competence and Problem Behaviors. Originally, in addition to the siblings' self-reports, ratings of Competence and Problem Behaviors were to be made by three observers, the mother, the father and the teacher. However, due to difficulties obtaining teacher responses, the teachers' portion of the study was excluded. Competence is measured by the extent of participation in sports and activities, home responsibilities, social relationships and academic achievement. Categories of ratings for Problem Behaviors include Internalizing, Externalizing as well as Total Problem Behaviors. Correlations were used to test the hypothesis that siblings of children with disabilities from families ranking higher in Cohesion and Adaptability have higher Competence ratings and fewer Problem Behavior ratings than children from families ranking lower in Cohesion and Adaptability.

The third hypothesis is that Family Satisfaction is related to higher Competence and fewer Problem Behaviors of siblings of children with disabilities in all Family Types. A family satisfaction rating scale, completed by each family member, was used to assess this variable. Correlations between Family Satisfaction scores and ratings of Competence and Problem Behaviors were used to determine if there is a significant relationship.

Measures

FACES II (Family Adaptability and Cohesion Scale II)

Reliability and Validity. In the present investigation the mother, father and adolescent sibling of the child with a disability responded to the 30 items on the FACES II (Author's permission see Appendix J). An initial 50 item version of FACES II was administered to a 2,412 person national sample. To assess internal consistency the sample was divided into two groups. Cronbach alpha figures averaged for the two samples resulted in a reliability estimate of .87 for Cohesion, .78 for Adaptability and .90 for the total scale. Test-retest reliability was .85.

A comparison of family members' ratings on the FACES II shows correlations of .46 for husbands and wives on Cohesion and correlations of .32 on Adaptability (Brassard, 1986). Parent-adolescent child correlations on the Cohesion subscale were .46 for fathers and .39 for mothers. On the Adaptability subscale the r was .31 for fathers and adolescent children and .21 for mothers and children. Because of the large differences in ratings, the authors considered it important to obtain them from several family members to gain a comprehensive picture of the family system (Olson & Portner, 1983).

FACES II is a revision of the original FACES, which was assessed for clinical validity by 35 marriage and family counselors, who examined the FACES responses of 410 adults. There are two items for each of the eight concepts on the Cohesion dimension. These concepts are: emotional bonding, family boundaries, coalitions, time space, friends, decision-making, and interests and recreation. There are two or three items for the six concepts related to Adaptability: assertiveness, leadership, discipline, negotiations, roles and rules.

Administration and Scoring. The Circumplex Family Type scores are obtained by each family member rating the 30 items on a one-to-five point scale with alternatives ranging from "almost never" to "almost always." Scores for Cohesion and Adaptability are computed and plotted on 1-8 linear scales (Olson & Tiesel, 1991). The Cohesion and Adaptability scale scores are added and divided by 2 to ascertain the rank on a 1-8 Family Type Scale. On this, scores of 1 or 2 denote Extreme Family Types and scores of 7 or 8 indicate Balanced Family Types.

High scores on the Adaptability dimension are interpreted as "very flexible" and on the Cohesion dimension as "very connected".

FSS (Family Satisfaction Scale)

This scale was completed by the mother, father and target sibling. It was originally included to test the experimental hypotheses that adolescent siblings of children with disabilities from families rated as Extreme will function well if the family members are satisfied with this type of family system. However, since the sampling procedures for the present study would not be expected to and did not yield many families rated as Extreme, it was used to assess the relationship between Family Satisfaction and sibling functioning in all family types.

Reliability and Validity. The 14 item Family Satisfaction Scale (FSS) was developed by Olson and Wilson (1982). In order to obtain one item for each of the 14 concepts in the FACES II, the authors pilot tested an intuitively derived 28-item questionnaire containing two items representing each area. Using 433 questionnaires completed by university students, a factor analysis was completed. The most representative item was chosen from each pair. Reliability, as measured by the Cronbach Alpha, was .92 for the total scale. There was a test-retest Pearson correlation coefficient of .75 after 5 weeks. Norms were established after conducting a national survey which involved 1,026 couples and 412 adolescents using the instrument.

The authors of the FSS extended permission for the use of this in the present study (see Appendix J for permission).

The Achenbach Scales

To assess the functioning of the adolescent siblings of children who have disabilities, the scales constructed by Thomas M. Achenbach and Craig Edelbrock, were used. These were designed to assess both problem behaviors and adaptive functioning in a standardized format (Kramer & Conoley, 1992).

Two scales were employed in the present study. These are the Child Behavior Checklist, which is completed by the mothers and fathers, and the Youth Self Report, which is completed by the adolescent siblings ages 11-18.

The Child Behavior Checklist (CBCL)

Mothers and fathers responded to the 7 competence areas and 118 problem behavior items on the CBCL. These scales were first developed in 1983 and revised in 1991. The revision contains new national norms, extends these from age 16 to age 18, and provides for coordinating data from the Teacher Report Form (TRF) and Youth Self Report (YSR) (McConaghie, 1993).

To construct the original scales the authors, Achenbach and Edelbrock, listed many descriptions of behavior that were of concern to parents and mental health professionals (Achenbach, 1991). These were pilot tested with parents of children, who were being evaluated in child guidance clinics. Feedback from parents and clinicians was elicited in order to add to and revise the items. The final form consisted of 118 items plus spaces for "other physical problems without known medical cause" and "any problems your child has that were not listed above" (Achenbach, 1991, p.10).

There is a 3 step response scale: 0 "not true" of the child; 1 "somewhat or sometimes true"; and 2 if the item is "very true or often true" of the child.

In addition to describing children through the use of many specific items, the CBCL also identifies syndromes of problems which occur together. These were derived through applying principal components analyses to the correlations among items. Although the items are the same for children aged 4-18, there were separate analyses of clinical samples of each sex at ages 4-5, 6-11 and 12-18. The core syndromes derived are: 1. Withdrawn; 2. Somatic Complaints; 3. Anxious/ Depressed; (According to 2nd order analyses, these three fall into the category of Internalizing Syndrome.) 4. Social

Problems; 5. Thought Problems; 6. Attention Problems; (Syndromes 4, 5, and 6 are considered to be neither Internalizing nor Externalizing Behaviors.) 7. Delinquent Behavior; 8. Aggressive Behavior; (Syndromes 7 & 8 are in the category of Externalizing Syndrome).

Percentiles for each syndrome scale were computed using the normative samples, and T scores were assigned based on percentiles. On some scales more than half of the sample obtained scores of 0 or 1. However, on other syndrome scales smaller percentages of the sample obtained such low scores. If normalized T scores were assigned solely on the basis of percentiles, some scales would start at much lower T scores than others, which could be misleading when seen on a child's profile. To avoid this and prevent over-interpretation of differences in scores in the low normal range, the assignment of T scores was truncated. A T score of 50 was assigned to all raw scores that fell at midpoint percentiles. Although this reduces the differentiation among low scores, the differences are small at the low end of the normal range and are of little clinical importance. In the present study, which does not assume to have a clinical sample, T scores were examined and used in computations as they make it more feasible to compare the CBCL and YSR.

Data from the parents' ratings on the CBCL was entered on the accompanying scoring sheet, the Child Behavior Profile. Through the T scores and percentiles which are provided, the behavioral syndromes manifested by the child can be compared to those of children of the same age and sex (Martin, Hooper & Snow, 1986).

An advantage of the CBCL is that, in addition to assessing children's problem behaviors, it includes a standardized measure of competence. The Competence Scale evaluates a child's participation in Activities, Social Relationships and School. Information is elicited as to the sports and non-sports activities (up to 3 each) that the child engages in. To estimate the quality of involvement responders indicate how much time the child spends and how well he/she performs in each as they perceive the child in comparison to others of his/her age. On another part of the Competence Scale the rater assesses how well the child gets along with siblings, peers and parents, and how well he/she plays alone. There is also a section for ratings in academic subjects and the child's school history.

The norming sample for the Competence Scale was drawn from a subset of non-disabled subjects from the national sample assessed in 1989. Subjects were representative of the 48 contiguous states in SES, ethnicity, religion, and urban-suburban-rural residence. Data was obtained in a home interview survey.

Both T Scores and percentiles were assigned to the Competence Scales to enable the user to compare a child's raw scores on each competency and total competency with the normative samples of the child's sex and age range.

The raw scores were negatively skewed for the normative sample because the nonreferred children received relatively high competence scores. Therefore, a T score of 55 was assigned to all raw scores at the 69th %ile and above. This is because differences at the high end of the competence scale are not important as they are all within the normal range as compared to low scores on the Competence Scale, T20-30, which are clinically significant.

The CBCL is designed to be responded to by parents or caregivers with 5th grade reading skills. The typical completion time stated by the authors is 15 to 17 minutes. Completion time for the participants in this study was not assessed since the families who participated received and returned the forms by mail.

Reliability and Validity. The interclass correlation coefficient (ICC) was used to determine the consistency of the rank ordering of items over time as well as to account for the magnitude of differences between ratings of an item (Martin, Hooper & Snow, 1986). Item test-retest reliabilities from CBCLs of 72 mothers of non-referred children at a one week interval resulted in an ICC of .95 for the 118 behavior problems and .996 for the 20 social competence items. At a 3 month interval the ICC of CBCLs completed by 12 mothers resulted in r=.84 for behavior problems and r=.97 for social competence. The scale scores proved to have temporal stability, as well. The average median correlation over a 1 week interval for all ages across all scales was r=.89. The authors compared CBCL data from the normative sampling obtained by three interviewers on 241 children to 241 children whose parents were interviewed by each of the two other interviewers (N=723). Significant ICCs of .959 for behaviors and .927 for competence supported interscorer reliability of the CBCL.

To measure convergent validity, raw scores of the

CBCLs, the Conners Parent Questionnaires and the Revised Behavior Problem Checklists completed by parents of 51 clinically referred children were correlated (Martin, Hooper & Snow, 1986). Correlations for boys on all scales that had similar content on the CBCL and Conners were significant ranging from r=.85 to r=.45. For girls, all but two correlations were significant. There were similar findings on the RBPC, with correlation coefficients ranging from r=.34 to r=.92. Therefore, the convergent validity of the CBCL appears to be adequate.

To identify syndromes of behavior problems, factor analytic studies were conducted on CBCLs of parents of children referred to mental health clinics and descriptive scales were identified (Freeman, 1985). T scores were derived from a subsequent norming on a sample of 1,300 children. Discriminant validity is supported by the CBCL's ability to discriminate between clinical and nonclinical samples on all Social Competence and Behavior Problem Scales.

The CBCL has been described as "one of the best if not the best instrument of its kind. The test is comprehensive both in breadth of content and in the age range for which it is intended" (Kelley, 1985, p.301).

Youth Self Report (YSR)

The target adolescent sibling of a child with a disability responded to the Youth Self-Report, which can be completed by young people who have a 5th grade reading level. Like the CBCL it assesses Competence and Problem Behaviors. Most of the items on the YSR are from the CBCL except that they are in first person format. Sixteen problem behaviors which were considered inappropriate for adolescents were replaced with socially desirable items. There is an identical Likert type, 3 step response scale. The Competence Scale is also similar. Scores are recorded on the YSR profile.

The YSR was standardized in 1985-86 on 344 boys and 342 girls, ages 11-18, from Massachusetts (Elliott & Busse, 1992). Subjects had not received mental health services in the previous 12 months. The sample was composed of 81% white, 17% black and 3% other children.

Reliability and Validity. The Problem Behavior syndrome scores on the YSR were empirically derived from the statistical analyses of the Youth Self Reports of adolescents referred for mental health services (Elliott & Busse, 1992). The sample included 486 boys and 441 girls from the Eastern part of the United States. Their ages and SES were not reported. Test-retest stability at one week was r.=.81; 8 month stability is r.=.64-.67.

Demographic Questionnaire

A questionnaire, designed by the author, contains questions about the parents' ages, educational levels and occupations (see Appendix G for demographic questionnaire). It inquires about the age and gender of the child with a disability, the diagnosis and when the condition was diagnosed. It also asks for the age, gender and grade in school of the target sibling and the ages of other children in the family. Questions on religious affiliation, ethnic background and income level are included, as well.

Procedures

Families were recruited by means of letters mailed from their disabled child's school or recreational program (see Appendix A for sample letter). Some of these schools and programs included letters of support (see Appendix B for prototype of letter of support). In addition, two types of flyers telling about the study (see Appendices C1 and C2 for flyers) were distributed through other schools and programs, as well as through social agencies and pediatricians. Information was posted on relevant bulletin boards on the Internet. The many contacts were necessary because there were not enough families who met criteria from any one place which served children with a particular disability. Due to a very slow initial response, the researcher began offering a $25 stipend for each family's participation.

Those families who were interested in participating contacted the researcher by mail or telephone. The criteria and requirements were further clarified for each family, and those who elected to take part received a packet of materials by mail along with a stamped, addressed envelope for its return.

Included in each packet were: explicit written instructions for completing the materials (see Appendix D for instructions); parental permissions forms for both the mother and father (see Appendix E for parent consent form); a youth assent form for the participating sibling (see Appendix F for youth assent form); the demographic questionnaire (see Appendix G for demographic questionnaire); the 30-item FACES II (see Appendix H for FACES II); and the 14-item Family Satisfaction Scales (FSS) for the mother, father, and sibling (see Appendix

I for FSS); Child Behavior Checklists for the mother and father; and a Youth Self Report for the sibling. There was a permission form for an educator (Appendix K for permission for educator) and a Teacher Report Form with a stamped return envelope. The family was instructed to ask an educator, such as a teacher or counselor, who knew the nondisabled sibling well to complete this form and return it to the researcher in the stamped, addressed envelope provided for the educator.

To insure the confidentiality of the individual responses, each respondent was instructed to complete the forms independently and to place his/her own forms in envelopes provided, which were marked "Father", "Mother" and "Sibling." Participants were directed to seal their envelopes and enclose them in the large, stamped, addressed mailing envelope that was included in the packet.

There was an acknowledgement of the subjects' participation on the instructions and an agreement to send the family a brief summary of the results of the study when it is completed, as well as an offer to schedule a follow up meeting with the family members, if requested (see Appendix D for instructions).

Data Analysis

Data was gathered from 39 families. According to family members' responses on the FACES II, Cohesion and Adaptability scores were computed. From these, a corresponding rank ranging from 1 to 8 was assigned on the Cohesion and on the Adaptability Scales. The total of the ranks on these two scales divided by 2 resulted in a rank from 1-8 on Family Type. Scores of 7-8 represented Balanced family types; 5-6, Moderately Balanced family types; 3-4, Mid-Range family types and 1 -2, Extreme family types.

Family Satisfaction ratings were obtained from the average of mothers', fathers' and siblings' ratings on the Family Satisfaction Scale.

Mothers' and fathers' responses for Sibling Competence and Problem Behaviors on the Child Behavior Checklists were recorded on CBCL Profiles, and siblings' responses on the Youth Self-Report were recorded on the YSR Profiles. The raw data was converted to T scores for Total Competence as well as for Total Problem Behaviors.

Statistics

Intercorrelations between mother, father and child

Adaptability and Cohesion scores and resulting ratings of family type on the FACES II and satisfaction ratings on the FSS were computed to examine the similarities and differences of perceptions of family members (see Appendix L for correlations of family systems characteristics). Intercorrelations between parents' and child's ratings of the adolescent siblings' Competence and Problem Behavior scores as reported on the CBCL and YSR were obtained (see Appendix M for correlations among mothers', fathers' and siblings' ratings of outcome variables). Even where correlations did not reach significance, aggregated data from the parents and the child was used to assess relationships between independent and dependent variables.

Using their mean scores of Adaptability and Cohesion and dividing by two, families were ranked from 1 to 8 on a scale of Family Type. The numbers of families of each type were computed to test Hypothesis I: Families of children with disabilities will be represented along a continuum ranging from Extreme to Balanced Family Types.

Pearson Product Moment correlations were used to assess the strength of the relationship between family Adaptability and Cohesion, as indicated by family members' ratings on the FACES II, and sibling Competence and Problem behaviors, as rated by family members on the CBCL and YSR. These tested Hypothesis II: Siblings of children with disabilities from families which rank higher in Adaptability and Cohesion will demonstrate greater Competence and fewer Problem Behaviors than those from families ranking lower in Adaptability and Cohesion.

Correlations between mean family scores on the Family Satisfaction Scale and family averages of ratings of Competence and Problem Behaviors, as assessed by the CBCL and YSR, were computed to test Hypothesis III: Siblings of children with disabilities from families, which rate themselves as having higher Satisfaction, will have increased Competence and fewer Problem Behaviors than those from families which rate themselves as having lower levels of Satisfaction.

Analyses of variance were used to identify background variables obtained from responses on the Demographic Questionnaire that accounted for group differences in Competence and Problem Behaviors. Those background variables which were found to account for significant differences were used in forward regression procedures along with Cohesion, Adaptability and Satisfaction in order to determine which family systems variables and demographic variables were the best predictors of Sibling Competence and Problem Behaviors.

CHAPTER IV

Results

Participants

Thirty-nine families took part in the study. In three families, the fathers did not participate at all. In five other families, one or more of the Child Behavior Checklists was not returned or was completed for the child with a disability, rather than for the non-disabled sibling. Because of these factors, the number of responses for both the independent and dependent variables differ.

Demographics for participating families are shown in Tables 1 through 7.

The ages of the participants are presented in Table 1. Noteworthy, is the 21 year age range among the participating mothers, all of whom have adolescent children between the ages of 11 and 18, and the even broader, 35 year range among the fathers. The almost 25 year span in ages of the children with disabilities also shows the heterogeneity, as far as age, in the sample. Fifty-nine percent of the siblings were older than their disabled brothers and sisters, and 41% were younger.

Table 1

Ages of Participants

Family Member	N	Mean	S.D.	Range
Mothers	39	44.00	5.41	33-54
Fathers	36	46.38	7.17	36-71
Siblings	39	14.33	2.37	11-18
Children with Disabilities	39	13.55	5.19	3.5-28.0

Table 2 provides information on the educational levels of the mothers and fathers. Included in the sample are parents who did not finish high school as well as parents who have doctoral degrees. The mean years of education is approximately 16. This corresponds closely with the years of education for college graduates.

Table 2

Mothers' and Fathers' Years of Education

Family Member	N	Mean	S.D.	Range
Mothers	39	15.72	2.76	10-20
Fathers	36	16.13	3.11	10-20

Table 3 shows how many siblings the children with disabilities have. The mean number of siblings, as represented in the sample, is 1.9 per family. This study used responses for only one sibling in each family.

Table 3

Number of Siblings of Child with a Disability

One	Two	Three	Four
N=15	N=15	N=6	N=3

As shown in Table 4, both males and females were represented in the sample. Among the non-disabled siblings 56% were male and 44% female. Among the siblings with disabilities, 61% were male and 49% female.

Table 4

Gender of Siblings and Disabled Brothers and Sisters

Family Member	Male	Female
Sibling	N=22	N=17
Child with Disability	N=24	N=15

The families in the sample had children with many kinds of disabilities. These are presented in Table 5.

Table 5

Disabilities

Downs Syndrome	Pervasive Developmental Disorder	Deaf	Cerebral Palsy	Other
N=8	N=8	N=6	N=5	N=12

Note: "Other" includes: Fragile X Syndrome and forms of mental retardation other than Downs N=4, Blindness N=2, Neurological Impairment with Seizure Disorders N=2, Rubenstein-Taybi Syndrome N=1, Rett Syndrome N=1, Hypodysplasia N=1, Paraplegic N=1

The responses of the families to the question on the Demographic Questionnaire about income level are presented in Table 6. Eight families chose not to respond to this item.

Table 6

Family Income

N=31

Under $30,000	$30,000-$50,000	$50,000-$75,000	$ 75,000-$100,000	$100,000 Plus
N=1	N=7	N=5	N=5	N=13

The sample is composed of 37 white families, 1 Hispanic and 1 Afro-American family. In response to the inquiry about religion, 44% families indicated they were Catholic, 28% were Protestant and 23% were Jewish. One family was both Catholic and Protestant, and another family declined to respond. Of the 39 families in the sample, 87% live in the suburbs of New York City.

To summarize, participating families tended to be college educated and from higher income brackets. Many disabilities were represented. Male and female siblings, some who were older than their disabled brothers and sisters and some who were younger, were included.

Hypothesis I

The first hypothesis is:

Families with disabled children will be represented on a continuum ranging from Extreme to Balanced Family Types. Specifically, at least one family will fall within each of the four categories of Family Types, which are Balanced, Moderately Balanced, Mid-Range and Extreme.

To determine Family Type, families are first ranked in categories ranging from 1-8 on scales of Cohesion and Adaptability according to their responses on the FACES II (Family Adaptability and Cohesion Scale). Table 7 shows the means, standard deviations and ranges of Cohesion for mothers, fathers, siblings, and families.

Table 7

Family Cohesion

Family Member	N	Mean	S.D.	Range
Mother	39	63.00	8.74	44-80
Father	36	62.83	5.57	51-76
Sibling	39	57.13	11.52	27-77
Family	39	60.94	9.36	27-80

The largest possible range for Family Cohesion, as measured by FACES II, is 15-80. Lower scores are described as Disengaged or Separated, while higher scores represent Connected and Very Connected categories.

Table 8 presents the means, standard deviations and ranges for Adaptability for individual family members as well as their aggregated scores.

Table 8

Family Adaptability

Family Member	N	Mean	S.D.	Range
Mother	39	47.08	7.26	33-64
Father	36	46.78	4.86	35-56
Sibling	39	44.13	9.54	22-64
Family	39	46.03	5.71	32.7-59.7

The largest range for Adaptability on the FACES II is 15-70. Lower scores characterize Rigid and Structured families, and higher scores represent Flexible and Very Flexible families.

If family scores tended to be high on Cohesion, they were high on the Adaptability dimension, and the reverse was true, as well. The correlation coefficient for Family Adaptability and Cohesion is .7107, which is significant beyond the .001 level.

To examine the first hypothesis, each family's ranks on Cohesion and Adaptability are combined and divided by

2 to obtain its ranking for Family Type. The Family Types and the number of families in each category are shown in Table 9.

Table 9

	Family Type	Frequency
8 7	BALANCED	N=0
6 5	MODERATELY BALANCED	N=18
4 3	MID-RANGE	N=19
2 1	EXTREME	N=2

The results indicate that the first hypothesis, which states that families will range from Extreme to Balanced Family Types, is not supported. There were no families which ranked in the Balanced range, and only 2 were in the Extreme range. Thirty-seven of the 39 families in the sample were Mid-Range and Moderately Balanced.

Hypothesis II

Siblings of children with disabilities from families which rank higher in Adaptability and Cohesion will demonstrate greater Competence and fewer Problem

Behaviors than those from families with lower Adaptability and Cohesion rankings. In other words, there will be positive correlations between Adaptability and Cohesion and Sibling Competence, and there will be negative correlations between Adaptability and Cohesion and Sibling Problem Behaviors.

Table 10 shows the means, standard deviations and ranges for the dependent variables, which are family ratings of Sibling Competence and Total Problem Behaviors. These are obtained from T scores based on ratings by parents on the Child Behavior Checklists and the siblings' self reports on the corresponding Youth Self Report.

Table 10

Combined Parent and Adolescent Ratings for Outcome Variables of Competence and Problem Behaviors

N=36

Variable	Mean	S.D.	Range
Competence	52.50	8.53	33.50-68.67
Problem Behaviors	45.68	10.02	28.33-64.67

Table 11 is a correlation matrix which presents the Pearson Product Moment correlations between the continuous variables of Family Cohesion and Adaptability and Sibling Competence and Problem Behaviors.

Table 11

Relationships Between Family Cohesion and Adaptability and Sibling Competence and Problem Behaviors

Variable	Cohesion	Adaptability
Competence	.12	.17
Problem Behaviors	-.37*	-.44**

*Significant at the .05 level or greater.

As the table shows, correlations between Cohesion and Adaptability and Sibling Competence were in a positive direction, but the relationship between the predictor variables and Competence was not significant. There were significant negative correlations between Family Cohesion and Adaptability and Sibling Problem Behaviors. Therefore, higher levels of Cohesion and Adaptability were associated with fewer Problem Behaviors to a significant degree. This supports the second portion of Hypothesis II.

Hypothesis III

Hypothesis III states that siblings of children with disabilities from families, which rate themselves as having higher Satisfaction, will have increased Competence and fewer Problem Behaviors than those from families, which rate themselves as having lower levels of Satisfaction. There will be a significant positive correlation between Family Satisfaction and Sibling Competence and a significant negative correlation between Family Satisfaction and Sibling Problem Behaviors.

Family Satisfaction is assessed from the aggregated scores of the mother, father and sibling on the Family Satisfaction Scale. The correlation coefficients between Family Satisfaction and the outcome variables of Sibling Competence and Problem Behaviors are shown in Table 12.

Table 12

Relationship Between Family Satisfaction and Sibling Competence and Problem Behaviors

Variable	Family Satisfaction
Competence	.07
Problem Behaviors	-.23

Although the relationships were in the direction indicated by the hypothesis, neither was statistically significant. Therefore, the third hypothesis was not supported by the data.

Intercorrelations among mothers', fathers' and siblings' ratings of Cohesion, Adaptability and Family Satisfaction are in the Appendix (see Appendix L for correlations among family systems characteristics). Also in the appendix are intercorrelations for mothers', fathers' and siblings' ratings of Competence and Problem Behaviors (see Appendix M for correlations among outcome variables).

Influence of Demographic Variables

There was an investigation to determine if certain background variables were important in predicting Sibling Competence and Problem Behaviors. A series of analyses of variance were computed as preliminary analyses to see how the mean scores of the families on the dependent variables differed as a function of their responses to questions on the Demographic Questionnaire about such factors as age, type of disability and socioeconomic characteristics. These analyses showed that there were no significant differences in the means of family ratings of Sibling Competence or Problem Behaviors based on the ages of the mothers and fathers, their education levels, religion, family income level, the type of disability, the gender of the child with a disability or the age of the non-disabled sibling. There were significant differences in Competence and Problem Behaviors based on the gender of the non-disabled sibling. Table 13 illustrates the mean scores of male and female siblings on measures of Competence and Problem Behaviors, and Tables 14 and 15 show the corresponding analyses of variance. These indicate that the male siblings in the sample had significantly higher

Competence and significantly fewer Problem Behaviors than the female siblings.

Table 13

Means for Sibling Groups Based on the Gender of the Non-disabled Sibling

	Male N=22	Female N=17
Competence	55.44	48.71
Problem Behaviors	42.73	49.49

Table 14

Analysis of Variance for Sibling Competence

Effect of Gender of Sibling

Source	SS	DF	MS	F	Sig
Gender	434.80	1	434.80	6.91	.01*
Residual	2327.06	37	62.89		
Total	2761.86	38	72.68		

*Significant at the .05 level or greater.

Table 15

Analysis of Variance for Sibling Problem Behaviors

Effect of Gender of Sibling

Source	SS	DF	MS	F	Sig
Gender	437.62	1	437.63	4.80	.04*
Residual	3376.67	37	91.26		
Total	3814.30	38	100.38		

* Significant at the .05 level or greater.

There were differences in group means for Competence, only, associated with the chronological age of the child with a disability. The age of the sibling with a disability did not account for significant differences in Problem Behaviors. The mean scores and analyses of variance are shown in Tables 16 and 17 and 18.

Table 16

Means for Sibling Groups Based on Age of the Child with a Disability

	Under Age 11 N=12	Ages 12-17 N=19	Over 18 N=8
Competence	58.33	49.98	49.75
Problem Behaviors	43.36	46.70	46.73

Table 17

Analysis of Variance for Sibling Competence

Effect of Chronological Age of Disabled Sibling

Source	SS	DF	MS	F	Sig
CA of Dis.	589.26	2	294.63	4.88	.01*
Residual	2172.61	36	60.35		
Total	2761.86		38		72.68

*Significant at the .05 level or greater.

Table 18

Analysis of Variance for Sibling Problem Behaviors

Effect of Chronological Age of Disabled Sibling

Source	SS	DF	MS	F	Sig
CA of Dis.	93.17	2	46.58	.45	.64
Residual	3721.13	36	103.37		
Total	3814.30	38	100.38		

The results of these analyses of variance demonstrate that siblings whose disabled brothers or sisters are age 11 or younger receive higher Competence ratings than those whose siblings are 12 and older. However, the chronological age of the sibling with a disability does not significantly predict ratings for Problem Behaviors.

All previous analyses suggest that the background variables of the Gender of the non-disabled sibling and the Chronological Age of the disabled sibling have a significant impact on sibling outcome variables. Therefore, the next analyses were conducted to determine which family systems characteristics and background variables are the key variables in predicting sibling Competence and Problem Behaviors.

Table 19 presents the results of a forward regression procedure in which the dependent variable was sibling Competence. The predictor variables used were Family Cohesion, Adaptability and Satisfaction, as well as the Gender of the non-disabled sibling and the Chronological Age of the sibling with a disability. This table shows that the best predictor variables are the Gender of the sibling and the Chronological Age of the child with a disability. Cohesion, Adaptability and Family Satisfaction did not go beyond them in predicting Competence. Male siblings were 7 points higher on Competence than female siblings. The results in Table 19 also show that the younger the child with a disability, the higher the Competence ratings of his/her sibling.

Table 19

Stepwise Multiple Regression

Dependent Variable=Sibling Competence

R Square=.24938 F(2,36)=5.9803 P.=.0057

Variable	B	SE B	Beta	T	P
Gender	7.04	2.46	.42	2.87	.01*
CA of Dis.	-.49	.24	-.30	-2.10	.04*
(Constant)	55.23	3.61		15.29	.00

*Significant at the .05 level or greater

Note: Males are coded as 1 and females, as 0.
The chronological age of the non-disabled sibling is treated as a continuous variable.

Table 20 presents a forward stepwise regression procedure for predicting Problem Behaviors. The same independent variables, Family Cohesion, Adaptability and Satisfaction, as well as the Gender of the non-disabled sibling and Chronological Age of the sibling with a disability were entered into the equation. As shown in Table 20, the best predictors for Problem Behaviors are Family Adaptability and the Gender of the Sibling. Higher ratings of Family Adaptability were predictive of significantly lower Problem Behaviors. Gender was a significant predictor in that male siblings had Problem Behavior ratings that were 6 points lower than those of females.

Table 20

Stepwise Multiple Regression

Dependent Variable=Total Problem Behavior

R Square=.2870 F(2, 36)=3.7255 P.=.0023

Variable	B	SE B	Beta	T	P
Adaptability	-.73	.25	-.42	-2.95	.01*
Gender	-6.07	2.82	-.30	-2.16	.04*
(Constant)	82.73	11.46		7.22	.00

* Significant at the .05 level or greater.

Note: Males are coded as 1, and females, as 0.

Summary

Correlational analysis of the relationship between family systems variables and sibling variables indicated that although higher degrees of Family Cohesion, Adaptability and Satisfaction were associated with greater Sibling Competence, the correlations were not significant. There were significant negative correlations between Family Cohesion and Adaptability and Sibling Problem Behaviors. Higher degrees of Cohesion and Adaptability were significantly related to lower ratings for Problem Behaviors. Analyses of variance were computed to determine if any family background variables were associated with significant differences in Competence and Problem Behaviors. The Gender of the Sibling and the Chronological Age of the Child with a Disability were found to be important predictors. Forward regression procedures showed that for Sibling Competence none of the family systems characteristics of Cohesion, Adaptability and Satisfaction were key variables in prediction, but the background variables of Gender of Sibling and Chronological Age of the Child with a Disability were significant predictors. Males showed significantly greater Competence, and Competence declined significantly as the age of the disabled sibling increased.

Family Adaptability was a key predictor for Sibling Problem Behaviors. The Gender of the Non-Disabled Sibling was also a significant factor. Problem Behaviors were significantly lower in families with higher Adaptability ratings. Male non-disabled siblings had significantly fewer Problem Behaviors than female siblings.

CHAPTER V

DISCUSSION

There were challenges in enlisting families for this research project. The design called for two-parent families. Therefore, many interested families, headed by a single parent, had to be excluded.

Because there were not enough families of children with the same disabling condition who met criteria for the study, children with many different conditions were included. All of the children with disabilities were in residential schools, special schools or special classes, and their conditions could be described as severely, rather than mildly disabling.

In each family, the mother, father and non-disabled sibling were expected to be participants. Usually, it was the mother who contacted the researcher and requested the materials. In a few cases, the father, declined to take part.

Interestingly, there seemed to be no problems obtaining completed materials from the adolescent siblings in the participating families even though some mothers had doubts about whether their sons or daughters would be willing to participate. The confidentiality of the responses insured by each family member placing his/her responses in a separate, sealed envelope may have helped. Resistance was evident from some of the adolescents when they were asked to contact a teacher or counselor. Even though the letter to the educator indicated the young person was participating in an educational psychology study, making no mention of their disabled brother or sister (see Appendix J), there was an unwillingness of many of the siblings to agree to send it. Their mothers indicated that in the school setting, their sons and daughters did not want to call attention to themselves or appear different in any way. Because of this, there were not enough Teacher Report Forms returned to include these in the data calculations.

In five of the families, one or both parents initially completed the Child Behavior Checklist for the child with a disability, even though there were written instructions that it was to be completed for the non-disabled sibling. These incorrect responses could indicate that, in those families, there is so much attention and effort expended on the child with a disability that even when information is requested about the non-disabled sibling, the parents automatically answer for their child with a disability.

Interpretation of Findings for Hypothesis I

The first hypothesis, families with children with disabilities will be represented on a continuum ranging from Extreme to Balanced Family Types, was not supported by the data. In the present sample of families of children with disabilities, no families were in the Balanced category and only two were ranked as Extreme. This appears to be inconsistent with the findings of Olson et al (1989). In their sample, separate ratings by parents and adolescents indicated that 53% of parents and 46% of adolescents considered their families to be Balanced, and 15% of parents and 19% of adolescents ranked their families as Extreme. The differing results could be attributed to the presence of a child with a disability in the families in this study. However, there are alternative explanations. In order to be ranked as Balanced, families must have high FACES II scores for Cohesion and Adaptability. Although the Cohesion and Adaptability ratings made by some individual family members in the present study resulted in their families being ranked as Balanced, when averaged with rankings of the other two family members, no family rankings placed a family in the Balanced category. This averaging of results could account for some of the apparent differences in findings as in the earlier study, family means were not used.

Another factor accounting for the fact that no Balanced families were represented is that these were families of adolescent children. Olson et al (1989) acknowledge that Cohesion and Adaptability within families tend to be lower during the years when there are adolescent children in the family. The parents in their sample represented conditions across the life span, while, in this sample, each family consisted of parents and an adolescent child. Adaptability ratings in such families of 11 to 18 year old siblings of children with disabilities may reflect that rules, leadership and discipline are in a state of transition during this time when sons and daughters are taking tentative steps towards independence. Families may not have developed the flexible boundaries that are so important for parents of adolescents (Carter & McGoldrick, 1980).

If, indeed, the presence of a child with a disability was the reason why none of the participating families was characterized as Balanced, there is at least one obvious explanation. That is that families in which there is a child with a disability may have less Cohesion in terms of common interests and time spent together due to the special physical, educational and recreational needs of their disabled child.

Only two families were rated as Extreme. For the present study, as in the Olson et al (1989) sampling, families from clinical settings were not enlisted. This, and the voluntary nature of the participation, may have resulted in the lack of inclusion of more Extreme family types. This could limit the generalizability of the present findings.

Interpretation of Findings for Hypothesis II

The first part of the second hypothesis, siblings of children with disabilities from families rated higher in Cohesion and Adaptability will have greater Competence ratings, was not supported by the data. The gender of the sibling and age of the child with a disability were the best predictors of Competence. Male siblings of children with disabilities achieved higher Competence ratings than female siblings. The younger the child with a disability the higher the Competence rating. Such findings were similar to those of Schwirian (1976), who found that sibling age and gender were the most important predictors of independence and social activities for siblings of disabled children. Other researchers (Breslau, 1982; Lobato, Barbour, Hall & Miller, 1986) concluded that there were increased child care responsibilities for female siblings of disabled children. Since Competence ratings were dependent, in part, on athletic and social activities outside of the home, lower ratings for females may have reflected these additional home duties.

The finding that siblings whose disabled brothers and sisters tended to be younger were rated as more Competent than those whose disabled siblings are older is consistent with the literature. As a disabled child grows older, the disparity between the child and his/her peers increases. Possible discrepancies between the child's age and size and his/her mental and social abilities are more pronounced. These factors can place more stress on the family system, which may impact on the Competence ratings of the non-disabled siblings.

The second part of Hypothesis II states that siblings of children with disabilities from families rated higher in Cohesion and Adaptability will have fewer problem behaviors. This was supported by the data in that there were significant negative correlations between Cohesion, Adaptability and Total Problem Behavior. This is consistent with family systems theory which conceptualizes the family's ongoing patterns of interaction and responses to stress as being more predictive of outcomes than the initial stressor or event (Seligman, 1991). Families with greater degrees of Cohesion provide their members with both feelings of connectedness and of autonomy. Families with higher levels of Adaptability furnish structure, yet are open to change when needed. This study has given empirical support to the relationship between family Cohesion and Adaptability and Problem Behaviors of siblings of children with disabilities in that higher levels of Cohesion and Adaptability are predictive of lower levels of Problem Behaviors.

An examination of background variables showed that the gender of the non-disabled sibling is significant in the prediction of Problem Behaviors with boys rated as having fewer problem behaviors. This may reflect difficulties stemming from the increased expectations for domestic responsibilities for girls. Aponte and Van

Deusen (1981) discussed the "parental child" who assumes responsibilities which are usually carried out by the mother and father. Perhaps, for female siblings of disabled children, such violation of boundaries is a contributor to problem behaviors.

Interestingly, when Adaptability was in the equation, Cohesion did not add significantly to prediction of Total Problem Behavior. Part of this is due to the high correlation between Cohesion and Adaptability. In addition, Adaptability or flexibility may be particularly important during adolescence. This is a stage in the Family Life Cycle represented in the participating families as all had sons and daughters ranging in age from 11 to 18.

Interpretation of the Findings for Hypothesis III

This hypothesis, which states that siblings of children with disabilities from families ranking higher in Family Satisfaction will have increased Competence and fewer Problem Behaviors, was not supported by the data. The hypothesis was extrapolated from Olson (1989), who said that extreme families can function well if the members are satisfied with that condition. Particularly cited were the rigid patterns typical of certain ethnic groups, such as Slovak-American, Puerto Rican and Italian and religious groups, such as Amish, Orthodox Jewish and Mormon families. The absence of such families in this sample may account for the nonsignificance of the contribution of Family Satisfaction.

An investigation of demographic factors indicated that the results did not appear to be affected by the religious affiliation of the participating families. However, an assessment of the extent of the family's involvement in their religion rather than the denomination, may have produced different results.

Group differences were not significant based on the diagnosis of the disabled child. Nevertheless, the severity of the disabling condition could be of significance. Therefore, outcomes on measures of adaptive functioning rather than diagnostic labels may be more useful in examining the impact of a child with a disability on his/her brother or sister.

The lack of significance of other demographic factors, such as age, education and income level of the parents adds to the generalizability of the findings among the population of families who have children with disabilities. It can be hypothesized that in a broad range of families, the way family members react to and mobilize in relation to a child with a disability is a predictor of sibling adjustment. The sibling's sense of belonging and his/her family's capacity to offer stability as well as change when needed will lead to fewer problem behaviors.

Applications

The utility of this study lies in its implications for a theoretical basis as well as methods that can be used by psychologists, social workers and other mental health professionals who work with families of children with disabilities. The results suggest that if a sibling of a disabled child is having behavioral difficulties, it is important to consider family processes in thinking about interventions. Assessing the family's cohesion and adaptability with an instrument such as the FACES II is an important first step. If scores are low on these dimensions, specific interventions can be put into place to promote family cohesion and adaptability in such areas as: support, communication, activities, joint decision making, leadership, negotiation and clarity of rules. Results suggest that increasing adaptability appears to be particularly important in families of adolescent children. Several of the families in the study reported to the researcher that completion of the Family Adaptability and Cohesion Scale II and the Family Satisfaction Scale opened up discussion within the family about areas of strength and areas that needed improvement. Therefore, there is some indication that the assessment, itself, paves the way for change.

Gender differences in the results imply that particular attention needs to be paid to the female siblings of disabled children. Family therapy strategies can be used to strengthen family boundaries, so that females will not expected to assume parental roles. Linking families to community resources that could lessen the burden of care for for their disabled brothers and sisters by female siblings is another possible intervention.

Limitations

The principle drawback of a study such as this is its non-experimental nature. It shows relationships but cannot demonstrate causality in the way a controlled experimental study does.

The assessment of the independent variables of Family Cohesion, Adaptability, Type and Satisfaction was conducted entirely through self report measures, namely the FACES II and the FSS. Observations of the family members performing structured tasks (Russell, 1979; Kog, Vertommen & Vandereycken, 1987) or the use by a professional of an observational measure, such as the Clinical Rating Scale (Olson et al, 1992), would widen the scope of the evaluation by providing outsider, as well as insider perspectives.

This research, which was designed to overcome some criticisms of earlier studies which used only one respondent, usually the mother, employed multiple raters of the dependent variables. These were the mother, the father and the sibling. Both outsider ratings by the parents using behavioral checklists and insider ratings by the sibling using a self report behavior instrument were included. However, due to the difficulty in obtaining consents to request teacher reports (possibly because of adolescent sensitivities), there were no ratings from persons outside of the family. This could put some restrictions on the accuracy of the aggregated ratings for Competence and Behavior.

Another limitation of the study is the self selection process. Families volunteered to take part in the research. Their willingness to come forward and to take the time and effort to complete and return a great deal of material may not be representative of the general population of families of children with disabilities. Other families may have had so many stressors and time constraints that they did not want to take part. As Jain (1989, p.161) so aptly stated about family participation in a similar research study, "Families who are having difficulties in their organizational structure may not chose to expose themselves or may not have the resources to take on this extra responsibility."

Future Directions

One obvious course would be to replicate this study with a larger sample, using as controls families in which there are no children who have disabilities. Duplicating the study in an urban setting and including a more evenly distributed income range could provide more information on generalizability. Other research possibilities are to conduct similar studies with families of children who have learning disabilities, attention deficit disorders, emotional handicaps and chronic illnesses.

Summary

This research was conducted to investigate the relationship between the family systems characteristics of Cohesion, Adaptability and Satisfaction and sibling Competence and Problem Behaviors in families in which there is a child with a disability. Results showed that family Cohesion, Adaptability and Satisfaction do not have a significant relationship to sibling Competence, but Cohesion and Adaptability have a significant negative relationship to Problem Behaviors. That is, higher ratings of Cohesion and Adaptability are associated with fewer reported Problem Behaviors. The gender of the nondisabled sibling and the age of the disabled child are significant predictors of sibling competence. Male siblings' Competence ratings significantly surpass those of females' and the younger the disabled sibling, the higher the Competence ratings. Adaptability and gender are the most significant predictors of Problem Behaviors with male siblings having significantly fewer Problem Behaviors than female siblings, and siblings from families with higher degrees of Adaptability rated as having fewer problem behaviors. Because of their high correlation, Cohesion did not add significantly to Adaptability in prediction. One area of utility for such findings is in assessing and providing interventions for families of children with disabilities when the siblings are experiencing difficulties. The results suggest that efforts to increase family Cohesion and Adaptability may be effective strategies.

Appendix A

Ina Winick
P.O. Box 143
Dobbs Ferry, New York 10522-0143

Dear Parents:

You are invited to participate in research to identify the family characteristics which contribute to the competence and behavior of brothers and sisters of children who have disabilities. This study requires families with two parents in which there is a disabled child and at least one other child who is not disabled and is between 11 and 18 years of age.

The mother, father, and the adolescent sibling of the child with a disability will complete two family rating scales, as well as a competence/behavior checklist describing the sibling. In addition, a teacher of the 11-18 year old brother or sister will be asked to complete a checklist in order to provide a view from someone outside of the family.

Results from at least 40 families will be compiled for this study. Individual responses will be confidential. At its completion, a summary of the findings will be mailed to you.
A stipend of $25 will forwarded to a family on receipt of completed responses.

As a school psychologist and member of my district's Committee for Special Education, I have worked with many families who have children with special needs. This research is for my dissertation as part of the requirements for my doctoral degree in Educational Psychology from the Graduate Center of the City University of New York.

If your family is willing to be part of this important research, please call me at (914)674-1852. The materials and a stamped return envelope will be mailed to you. Your participation will be greatly appreciated.

Sincerely,

Ina Winick

Appendix B

Prototype of Letter Verifying Agency Support

Dear Parents:

As you can see by the accompanying letter, Mrs. Ina Winick is conducting a study, which has the potential to be helpful to sibling relationships in families in which there is a child who has a disability.

I hope you will give your cooperation and support to this project.

Very truly yours,

Appendix C1

FAMILIES NEEDED

Families are invited to participate in a new research project designed to identify family characteristics which contribute to the competence and adjustment of brothers and sisters of children who have disabilities.

This study requires families with two parents in which there is a disabled child and at least one other child who is not disabled and is between 11 and 18 years of age. The mother, father and the non-disabled child will describe their family through the use of rating scales. In addition, they will complete checklists which tell about the behavior and competence of this brother or sister. With the family's permission, a similar checklist will be sent to a teacher or counselor, who knows the sibling well, in order to provide a view from someone outside of the family.

Individual responses are confidential. This study is intended to develop guidelines for families in which there is a child who has a disability. A stipend of $25 will be forwarded upon receipt of the completed response.

If your family is interested, contact:
Mrs. Ina Winick at (914)674-1852 or write to
P.O. Box 143, Dobbs Ferry, NY 10522-0143.
(Materials and a stamped return envelope will be mailed to you.)

Appendix C2

EARN $25

By taking part in an educational psychology research project. Two parent families in which there is a special needs child and a nondisabled son or daughter between the ages of 11 and 18 are eligible. Participation is by mail and takes about 15 minutes of each family member's time. For information, call (914) 674-1852.

Appendix D
Instructions

Thank you for agreeing to participate in this research on the relationship between family factors and the interests, feelings and behavior of siblings of children who have disabilities.

Responses to the scales and checklists are to be based on each individual's perception of the person or the family. You may discuss the items afterwards, but do not compare responses or be concerned if there is lack of agreement. Please follow these procedures.

Mothers and Fathers

1. Either parent completes the Demographic Questionnaire and encloses it in the large, stamped, addressed envelope.
2. Each parent reads and signs a Parents' Consent Form.
3. Each parent, independently, completes the Family Adaptability and Cohesion Scale II (FACES II).
4. Each parent, independently, completes the Family Satisfaction Scale (FSS).
5. Each parent, independently, completes the Child Behavior Checklist (CBCL) for the designated adolescent sibling of your child with a disability.
6. The father places his FACES II, FSS and CBCL in the envelope marked **Father**, seals it and encloses it in the large stamped, addressed mailing envelope. The mother places her materials in the envelope marked **Mother** and places it in the mailer.

Sibling

1. Read and sign the Youth Assent Form.
2. Complete the Family Adaptability and Cohesion Scale II (FACES II).
3. Complete the Family Satisfaction Scale (FSS).
4. Complete the Youth Self Report (YSR).
5. Place these in the envelope marked **Sibling.** Put that envelope in the stamped, addressed mailing envelope.

Parents and Non-disabled Adolescent Sibling

Decide upon an educator (teacher, guidance counselor, coach etc.) who knows this young person well. Sign the letter consenting to have that educator complete a Teacher Report Form. Give this consent, the Teacher Report Form and the stamped return envelope to the person you have selected.

Please return all forms within 2 weeks. If you have any questions or concerns, please call Ina Winick at (914)674-1852.

Your time and interest is greatly appreciated. Upon completion, a summary of the results will be mailed to you or if you wish, I will schedule a follow up meeting to further clarify the findings.

Appendix E

Parents' Consent Form

You are invited to participate in research being conducted by Mrs. Ina Winick, a doctoral candidate in Educational Psychology at the Graduate Center of the City University of New York. The study is investigating the relationship between family factors and the competence and behavior of siblings of children who have disabilities. This will involve your completion of:

1. A Demographic Questionnaire
2. The Family Adaptability and Cohesion Scale (FACES II)
3. The Family Satisfaction Scale
4. The Child Behavior Checklist

Your non-disabled adolescent son or daughter will be asked to complete:

1. The Family Adaptability and Cohesion Scale (FACES II)
2. The Family Satisfaction Scale
3. The Youth Self Report

There are no foreseeable risks to you or your family members from this research. Your participation is voluntary and you may withdraw at any time without penalty. The information you provide will be kept strictly confidential. The forms you complete will be identified only by numbers. Results from many families will be compiled for this study. Upon its completion a summary of the results will be shared with you.

If you agree to participate, please sign below.

Signature____________________________Date_______________

I give my son/daughter permission to participate in this study.

Signature____________________________Date_______________

If you have questions, please contact: Ina Winick
(914)674-1852

Appendix F

Youth Assent Form

You are invited to participate in research being conducted by Mrs. Ina Winick, a doctoral candidate in Educational Psychology at the Graduate Center of the City University of New York. The study is investigating the relationship between family factors and the competence and behavior of siblings of children who have disabilities. This will involve your completion of:

1. The Family Adaptability and Cohesion Scale (FACES II)
2. The Family Satisfaction Scale
3. The Youth Self Report

There are no foreseeable risks to you or your family members involved in this research. Your participation is voluntary and you may withdraw at any time without penalty. The information you provide will be kept strictly confidential. The forms you complete will identified only by numbers. Results from many families will be compiled for this study. Upon its completion a summary of the results will be shared with you.

If you agree to participate, please sign below.

Signature______________________________Date________________

If You have questions, please contact: Ina Winick (914)674-1852.

Appendix G

Demographic Questionnaire

1. Mother's Name____________________Age______

Education (highest grade or degree)__________

Occupation____________________________________

2. Father's Name____________________Age_________

Education (highest grade or degree)________________

Occupation______________________________________

2. Child, who has a disability.

Name:_____________________________Male/Female

Date of birth____________Age_________________

School____

Description of disabling condition________

____

When was condition diagnosed?_______________________

3. Name of participating son or daughter.

____________________________________Male/Female

Date of birth_____________Age____________________

Grade________School_____________________________

4. Number of other children in family_____________

Name________________________Age___________

Name________________________Age___________

Name________________________Age_____________

5. Optional

Religious Affiliation_________________

Ethnic Background________________________

Yearly Income Level: Under $30,000______$30-50,000___

$50-75,000----------$75-100,0000_____$100,000 plus____

6. School Contact Person (Teacher or Counselor who is familiar with your participating son or daughter).

Name ____

Title____

School_______________________________________

Address____________________________________

____

Telephone:_____________________________________

Appendix H

FACES II: Family Version

David H. Olson, Joyce Portner & Richard Bell

1	2	3	4	5
Almost Never	Once in Awhile	Sometimes	Frequently	Almost Always

Describe Your Family:

____ 1. Family members are supportive of each other during difficult times.
____ 2. In our family, it is easy for everyone to express his/her opinion.
____ 3. It is easier to discuss problems with people outside the family than with other family members.
____ 4. Each family member has input regarding major family decisions.
____ 5. Our family gathers together in the same room.
____ 6. Children have a say in their discipline.
____ 7. Our family does things together.
____ 8. Family members discuss problems and feel good about the solutions.
____ 9. In our family, everyone goes his/her own way.
____ 10. We shift household responsibilities from person to person.
____ 11. Family members know each other's close friends.
____ 12. It is hard to know what the rules are in our family.
____ 13. Family members consult other family members on personal decisions.
____ 14. Family members say what they want.
____ 15. We have difficulty thinking of things to do as a family.
____ 16. In solving problems, the children's suggestions are followed.
____ 17. Family members feel very close to each other.
____ 18. Discipline is fair in our family.
____ 19. Family members feel closer to people outside the family than to other family members.
____ 20. Our family tries new ways of dealing with problems.
____ 21. Family members go along with what the family decides to do.
____ 22. In our family, everyone shares responsibilities.
____ 23. Family members like to spend their free time with each other.
____ 24. It is difficult to get a rule changed in our family.
____ 25. Family members avoid each other at home.
____ 26. When problems arise, we compromise.
____ 27. We approve of each other's friends.
____ 28. Family members are afraid to say what is on their minds.
____ 29. Family members pair up rather than do things as a total family.
____ 30. Family members share interests and hobbies with each other.

Note: From <u>Family Inventories</u> (p. 17), by D. H. Olson, H. I. McCubbin, H. Barnes, A. Larsen, M. Muxen & M. Wilson. St. Paul, MN: Family Social Science, University of Minnesota. Reprinted with permission.

Appendix I

Family Satisfaction

David H. Olson & Marc Wilson

RESPONSE SCALE

1	2	3	4	5
DISSATISFIED	SOMEWHAT DISSATISFIED	GENERALLY SATISFIED	VERY SATISFIED	EXTREMELY SATISFIED

HOW SATISFIED ARE YOU:

1. With how close you feel to the rest of your family?
2. With your ability to say what you want in your family?
3. With your family's ability to try new things?
4. With how often parents make decision in your family?
5. With how much mother and father argue with each other?
6. With how fair the criticism is in your family?
7. With the amount of time you spend with your family?
8. With the way you talk together to solve family problems?
9. With your freedom to be alone when you want to?
10. With how strictly you stay with who does what chores in your family?
11. With your family's acceptance of your friends?
12. With how clear is it what your family expects of you?
13. With how often you make decisions as a family, rather than individually?
14. With the number of fun things your family does together?

Note: From Family Inventories (p. 28), by D. H. Olson, H. I. McCubbin, H. Barnes, A. Larsen, M. Muxen & M. Wilson. St. Paul, MN: Family Social Science, University of Minnesota. Copyright 1982 by D. H. Olson. Reprinted with permission.

Appendix J1

UNIVERSITY OF MINNESOTA

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College of Human Ecology

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St. Paul, MN 55108

612-625-7250
Fax: 612-625-4227

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In exchange for providing this permission, we would appreciate a copy of any papers, theses or reports that you complete using **FACES II**. This will help us to stay abreast of the most recent developments and research regarding this scale. We thank you for your cooperation in this effort.

In closing, I hope you find **FACES II** of value in your work with couples and families. I would appreciate hearing from you as you make use of this inventory.

Sincerely,

David H. Olson

David H. Olson, Ph.D.
Professor

Appendix J2

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May 15, 1994

Ina Winick
63 Tompkins Avenue
Hastings-on-Hudson, NY 10706

Dear Ms. Winick,

I am writing to confirm that you have my permission to reproduce the figure of the Circumplex Model Couple and Family Map (figure 1), the Curvilinear Dynamics of the Circumplex Model (figure 2), and the Three-dimensional Family Circumplex Model (Figure 3.2) in your dissertation. I understand that University Microfilms may release single copies of your dissertation upon demand.

Please send us a copy of your dissertation when it is completed if you can, or if this would not be feasible, the Abstract, Methods and Results sections.

Sincerely,

David Olson

David H. Olson, Ph.D.
Professor

APPENDIX J3

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Separate permission is also required to use the **ENRICH** inventory in either clinical work or research. This is because the inventory is computer scored and is distributed through the PREPARE/ENRICH office. Contact Dr. David Olson at PREPARE/ENRICH, P.O. Box 190, Minneapolis, MN 55458.

In exchange for providing this permission, we would appreciate a copy of any papers, thesis, or reports that you complete using these inventories. This will help us in staying abreast of the most recent development and research with these scales. Thank you for your cooperation.

In closing, I hope you find the **Family Inventories** of value in your work with couples and families. I would appreciate feedback regarding how these instruments are used and how well they are working for you.

Sincerely

David Olson

David H. Olson, Ph.D.
Professor

Appendix K

P.O. Box 143
Dobbs Ferry, New York 10522-0143

Dear Educator:

Your student ______________________ and his/her family are participating in an educational psychology research project. One part of this is a checklist which is to be completed by a teacher or counselor, who is familiar with this student. Please respond to the attached Teacher Report Form and return to me in the enclosed envelope. Your responses will be confidential. The permission of this student's parent is indicated below.

Thank you for your cooperation.

Sincerely,

Ina Winick

I give my permission for you to respond to the Teacher Report Form for my son/daughter.

Name of son/daughter________________________________

Signature:____

Appendix L

CORRELATIONS AMONG RATINGS OF FAMILY FACTORS

Table L1

Correlations Among Mothers', Fathers' and Siblings' Ratings of Family Cohesion

	Mothers	Fathers	Siblings
Mothers			
Fathers	.5613*		
Siblings	.5654*	.3073	

Table L2

Correlations Among Mothers', Fathers' and Siblings' Ratings of Family Adaptability

	Mothers	Fathers	Siblings
Mothers			
Fathers	.5248*		
Siblings	.2969	.5666*	

Table L3

Correlations Among Mothers', Fathers' and Siblings Ratings of Family Satisfaction

	Mothers	Fathers	Siblings
Mothers			
Fathers	.5950*		
Siblings	.3872*	.1558	

Table L4

Correlations Among Mothers', Fathers' and Siblings' Ratings of Family Type

	Mothers	Fathers	Siblings
Mothers			
Fathers	.5693*		
Siblings	.4307*	.3995*	

*Significant at the .05 level or greater.

Appendix M

CORRELATIONS AMONG FAMILY RATINGS OF OUTCOME VARIABLES

Table M1

Correlations Among Mothers', Fathers' and Siblings' Ratings of Competence

	Mothers	Fathers	Siblings
Mothers			
Fathers	.5549*		
Siblings	.4874*	.2012	

Table M2

Correlations Among Mothers', Fathers' and Siblings' Ratings of Total Problem Behaviors

	Mothers	Fathers	Siblings
Mothers			
Fathers	.6377*		
Siblings	.4720*	.4876*	

*Significant at the .05 level or greater.

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