

1-1-2000

The effect of developmental disabilities on the externalizing behavior of siblings

Tiffany Kara Kostelec
University of Nevada, Las Vegas

Follow this and additional works at: <https://digitalscholarship.unlv.edu/rtds>

Repository Citation

Kostelec, Tiffany Kara, "The effect of developmental disabilities on the externalizing behavior of siblings" (2000). *UNLV Retrospective Theses & Dissertations*. 1121.
<http://dx.doi.org/10.25669/17kl-0vcc>

This Thesis is protected by copyright and/or related rights. It has been brought to you by Digital Scholarship@UNLV with permission from the rights-holder(s). You are free to use this Thesis in any way that is permitted by the copyright and related rights legislation that applies to your use. For other uses you need to obtain permission from the rights-holder(s) directly, unless additional rights are indicated by a Creative Commons license in the record and/or on the work itself.

This Thesis has been accepted for inclusion in UNLV Retrospective Theses & Dissertations by an authorized administrator of Digital Scholarship@UNLV. For more information, please contact digitalscholarship@unlv.edu.

INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

**Bell & Howell Information and Learning
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA
800-521-0600**

UMI[®]

**THE EFFECT OF DEVELOPMENTAL DISABILITIES ON THE
EXTERNALIZING BEHAVIOR OF SIBLINGS**

by

Tiffany Kara Kostelec

**Bachelor of Science
University of Nevada, Reno
1991**

**Bachelor of Arts
University of Nevada, Las Vegas
1994**

**A thesis submitted in partial fulfillment
of the requirements for the**

**Master of Arts Degree
Department of Psychology
College of Liberal Arts**

**Graduate College
University of Nevada, Las Vegas
May 2000**

UMI Number: 1399894



UMI Microform 1399894

Copyright 2000 by Bell & Howell Information and Learning Company.

All rights reserved. This microform edition is protected against
unauthorized copying under Title 17, United States Code.

Bell & Howell Information and Learning Company
300 North Zeeb Road
P.O. Box 1346
Ann Arbor, MI 48106-1346



Thesis Approval

The Graduate College

University of Nevada, Las Vegas

December 2, 1999

The Thesis prepared by

Tiffany Kara Kostelec

Entitled

The Effect of Developmental Disabilities on the

Externalizing Behavior of Siblings

is approved in partial fulfillment of the requirements for the degree of

Master of Arts, Department of Psychology

Examination Committee Chair

Dean of the Graduate College

Examination Committee Member

Examination Committee Member

Graduate College Faculty Representative

ABSTRACT

The Effect of Developmental Disabilities on the Externalizing Behavior of Siblings

by

Tiffany Kara Kostelec

**Dr. Russell Hurlburt, Examination Committee Chair
Associate Professor of Psychology
University of Nevada, Las Vegas**

Early intervention for children with developmental disabilities or delays has become an important topic in the fields of education and psychology. Equally as important are the effects on children who are typically developing if one or more of their siblings is a child with a disability. Particularly of interest in this study was the level of externalizing behavior displayed by the typically developing siblings of children who have disabilities.

This study compared the externalizing behavior (measured by the CBCL) of 16 siblings of children who have developmental disabilities with the externalizing behavior of 14 siblings of children who are typically developing. The expected findings, that children with a sibling with a disability, especially males, would exhibit higher levels of externalizing behavior than children who did not have a sibling with a disability, were not statistically significant. Results were discussed in relation to previous research of siblings of children with a disability.

TABLE OF CONTENTS

ABSTRACT	iii
ACKNOWLEDGMENTS	v
CHAPTER 1 INTRODUCTION	1
Siblings of Children who have Disabilities	5
Developmental Disability	11
Externalizing Behavior	12
The Present Study	15
CHAPTER 2 METHODS	16
Subjects	16
Measures	19
Procedures	20
CHAPTER 3 RESULTS	22
CHAPTER 4 DISCUSSION	24
REFERENCES	26
VITA	34

ACKNOWLEDGMENTS

I would like to acknowledge the Graduate Student Association for granting me the funds necessary to complete this project. In addition, Special Children's Clinic, PEP and the UNLV Daycare Center, who were so generous and understanding of my desperate search for subjects.

I would also like to thank my Chairperson, Dr. Russell Hurlburt. I greatly appreciate his support, his logical mind, and his constant reminders to use my road map to help everyone wade through the confusion that was my Thesis. In addition, I would like to thank the other members of my committee, Dr. Don Diener, Dr. Tom Pierce, and especially Dr. Chris Heavey, who generously gave their time and useful comments.

I would like to thank my parents who did not say a word when I decided to change majors yet again and stay in school for another lifetime. Thank you for your understanding and your belief that I could do anything I wanted.

And finally, I would like to thank Steve. He was the unfortunate recipient of my frustration and my temper when things were not going well. He was the unfortunate one who was asked for advice and criticism and who was then yelled at when it was not what I wanted to hear. He was also the one who gave me the most encouragement and believed the most in me.

CHAPTER 1

INTRODUCTION

It is generally accepted that the presence in the home of a child who has a developmental disability creates a stressful situation for the family. Day to day living and overall family functioning may be negatively affected (Bischoff & Tingstrom, 1991; Dyson, 1991). This is in addition to the strained financial and emotional stress placed on the family and the physical care-giving demands required by a child with a developmental delay (Bischoff & Tingstrom, 1991; Breslau & Prabucki, 1987; Dyson, 1991; Marcenko & Smith, 1992). However, whereas much research has considered the impact that children with developmental disabilities have on the parents and family structure, much less research has focused on the impact they have on their siblings (Ferrari, 1984; Lindsey & Stewart, 1989; Vadasy, Fewell, Meyer & Schell, 1984; Wasserman, 1983).

The bond between siblings is considered one of the most important and enduring relationships formed over a lifetime. By the time children are one year old, they spend more time with their siblings than with their fathers (Lawson & Ingleby, 1974). In addition, siblings, over the life span, spend more time together as compared to the time parents and children spend together (Brody & Stoneman, 1986). Only recently have researchers begun to consider what effect children with a developmental disability have on their siblings (Hannah & Midlarsky, 1985; Lobato, 1985; Simeonsson & McHale, 1981).

Research that has been done in this area results in several contradictory conclusions. Some researchers conclude that the siblings of children with developmental disabilities are at no more risk for psychological maladjustment than are the siblings of a typically developing child (Breslau, 1982; Lavigne & Ryan, 1979). Other researchers conclude that

having a sibling with a disability has positive effects on a child. Grossman (1972), for example, demonstrated that typically developing siblings of children who have disabilities may develop greater sympathy and tolerance and a greater understanding of people. And still other researchers have concluded that children who have a sibling with a disability suffer from more stress and are more at risk for negative psychological adjustment and behavior problems than are children who do not have a sibling with a disability (Lobato, 1983; Valdivieso, Ripley & Ambler, 1988).

Thus, many of the results of the research on the effect of having a sibling with a disability are contradictory. Researchers are beginning to find that the risk of psychological impairment depends more on individual discrete factors and family situations than was previously believed. Rodrigue, Geffken and Morgan (1993) found that typically developing siblings of children with Autism or Down syndrome, as compared to siblings of children who are typically developing, did not differ significantly in their vulnerability to adjustment difficulties. They concluded that having a sibling with a disability, by itself, was not a predictor of psychological maladjustment. Instead, Rodrigue and his colleagues urged other researchers to look at factors such as sibling birth order in relation to the child with a disability and parental factors such as marital satisfaction as other predictors of maladjustment.

Consistently, gender, birth order, and parental influence are considered predictors of psychological adjustment in siblings of children with developmental disabilities (Breslau, 1982; Breslau & Prabucki, 1987; Drotrar & Crawford, 1985). Concerning gender, sisters of children with disabilities are generally given more care-taking responsibilities, and although they seem better adjusted during childhood, they have more difficulties later in life (ARCH, 1993; Lobato, Barbour, Hall & Miller, 1987). Brothers of children with disabilities seem to express more emotional and behavior problems overall (Farber, 1964; Lavigne & Ryan, 1979). Concerning birth order, several researchers have concluded that younger siblings in general display higher scores on screening inventories of adjustment behaviors

(Breslau, 1982; Breslau & Prabucki, 1987; Breslau, Weitzman, & Messenger, 1993; Lavigne & Ryan, 1979). Other researchers however, have determined that older children show higher levels of maladjustment than their peers who have a sibling who is typically developing (Dunn, 1985; Rodrigue, Geffken & Morgan, 1993). Concerning parental influence, children who are at risk for adjustment difficulties may be angry at or jealous of the amount of attention the child with a disability receives and consequently the lack of attention they themselves receive from their parents. This may cause them to act out (ARC, 1993; McAndrew, 1976; McKeever, 1983; Murphy & DellaCorte, 1989).

Although researchers have recognized that characteristics such as gender, birth order, and parental factors can contribute to the psychological adjustment of typically developing siblings of children who have disabilities, very few have considered as their primary concern how the maladjustment is displayed by the sibling. Sibling maladjustment may be displayed as externalizing behaviors (including temper tantrums, aggression, and non-compliance). A factor that has been identified as increasing the level of externalizing behavior is having a sibling who has a disability. Many researchers agree that the presence of a child with a disability in the family is stressful in many ways such as financially and emotionally (Breslau & Prabucki, 1987; Bischoff & Tingstrom, 1991; Dunn, 1988; Ferrari, 1983; McKeever, 1983; Pless and Pinkerton, 1975). Many researchers also agree that the stress felt by the children who are typically developing in the family may be manifested as externalizing behavior (Baskett & Johnson, 1982; Breslau & Prabucki, 1987; Breslau, Weitzman & Messenger, 1981; Gath, 1974; Rodrigue, Geffken & Morgan, 1993; Wood, Boyle, Watkins, Nogueira, Zimand & Carroll, 1988). This is not to say, however, that only externalizing behaviors are exhibited by the siblings who are typically developing in a family. Other behaviors can be seen as well, such as internalizing behaviors, social withdrawal, depression (Hannah & Midlarsky, 1987; Lavigne & Ryan, 1979; Lobato, Barbour, Hall & Miller, 1987), fear and loneliness, (Bagenholm & Gillberg, 1991; Steiner, 1984), and even maturity and tolerance (Cleveland & Miller, 1977, Grossman, 1972).

Brothers of children who have disabilities demonstrate, as some researchers have shown, higher levels of externalizing behavior than do sisters of children who have disabilities. Lavigne and Ryan (1979) found that on scales measuring hyperactivity, total aggression and irritability, boys who had chronically ill siblings scored higher than did girls who had chronically ill siblings. Gath (1974) found that young boys who have a sibling with a disability had more behavior problems than did girls, although it tended to even out as they reached adolescence. Siegel and Silverstein (1994), through observations gathered over many years of working with families with a child who has a developmental disability, found that boys expressed negative feelings by acting out and aggression, whereas girls displayed more depression and anxiety. And finally, other researchers (Breslau, 1982; Farber, 1959; Fowle, 1968) found that males are more at risk for behavioral problems, whereas girls may be overburdened with caretaking responsibilities and consequently display more depression and anxiety as adults (Farber, 1960; Fowle, 1968).

The present study focuses on the behavior siblings of children who have disabilities display, and had three purposes. The first purpose was to determine if siblings of children who have disabilities have higher levels of externalizing behavior in contrast to siblings of children who are typically developing. The second purpose was to determine if brothers of children with disabilities exhibit higher levels of externalizing behavior than do sisters of children with disabilities. The third purpose was to determine if brothers of children who have disabilities exhibit higher levels of externalizing behavior than do sisters of children with disabilities and both brothers and sisters of children who are typically developing. The children on whom this study focuses are themselves all typically developing. It is their siblings who either have disabilities or are considered typically developing.

In the remainder of the chapter, three topics will be discussed that are necessary in defining the scope of the present study. First, a review of the research that has been conducted on the effects children who have a disability have on their siblings will be presented. Second, a definition of developmental disability will be discussed, so there will

be no ambiguity about what is meant here by the term “Disabled.” Third, externalizing behavior will be defined and a review of the literature on the externalizing behavior of boys will be explored. The review will show that whereas researchers have acknowledged that girls do display externalizing behavior, boys display higher levels of externalizing behavior than do girls.

Siblings of Children who have Disabilities

The U.S. Department of Education reported that approximately 26 million American children have a condition (e.g., early developmental delays, learning disabilities, mental retardation, or physical and sensory impairment) that requires some sort of special educational service (Siegel & Silverstein, 1994). Over the past few decades, the idea that the impact these conditions have on the children can be ameliorated with specially designed programs has become universally accepted.

However, an emerging area of research focuses on the impact children with disabilities have on their siblings who are themselves typically developing. A review of the literature has shown that researchers identify the impact on these typically developing siblings by measuring their levels of maladjustment, which is described in terms of their levels of externalizing and internalizing behaviors. The measures include interviews, questionnaires, and screening inventories.

Two factors, gender and birth-order, can contribute to the levels of either internalizing or externalizing behavior. Therefore, I will divide the research on siblings of children who have disabilities into four sections: the effect of birth order on internalizing behavior, the effect of gender on internalizing behavior, the effect of birth order on externalizing behavior, and the effect of gender on externalizing behavior.

The Effect of Birth Order on Internalizing Behavior

Determining the effect birth order may have on how children respond to having a sibling with a disability has been examined by many researchers. This effect, researchers have found, seems to be higher levels of internalizing behavior displayed by children with a

sibling with a disability than by children whose sibling does not have a disability. Breslau (1982) considered birth-order and age-spacing variables that may affect psychological adjustment of siblings of children who have disabilities. Results from the Psychiatric Screening Inventory (PSI), a measure of child functioning in major social situations, indicated that brothers younger than the disabled sibling scored more highly on the Depression-Anxiety subscale than did older brothers. They appeared more psychologically impaired overall than older brothers. Conversely, with regard to females, the younger sisters scored lower on the Depression-Anxiety subscale than did the older sisters. The results suggested that the effect for sisters of disabled siblings may tend to be expressed later in life through depression/anxiety symptoms.

Breslau and Prabucki (1987) conducted a longitudinal study on the effects of the stress of having a sibling with a disability using the Psychiatric Screening Inventory and the Diagnostic Interview Schedule for Children. Their subjects, siblings of children who have disabilities and siblings of children who are typically developing were separated into three age groups. These ages, at first interview, were 6-9 years, 10-13 years, and 14-18 years. At a five-year follow-up, the youngest group of siblings (6-9 years at first interview) showed the largest increase in score on the subscales Isolation and Self-Destructive Tendencies. However, the youngest group also had the highest decrease in Regressive Anxiety of the three age groups. The siblings of children who have disabilities, at follow-up, showed significantly higher levels of depressive symptoms than did the controls, but overall levels of major depression rates were similar.

Rodrigue, Geffken, and Morgan (1993) examined three groups of siblings: those whose siblings had Down syndrome, those whose siblings had Autism, and those whose siblings were not affected. Correlational analysis of data from this study showed that only two factors affected a sibling's adjustment as contrasted with previous literature stating there are many characteristics that affect a sibling's development (Morgan, 1988; Simeonsson & McHale, 1981). These are sibling age and parental marital satisfaction.

These authors found that older siblings of children who have disabilities scored higher on measures of levels of internalizing and externalizing behaviors. However, none of the subjects in their study displayed clinical levels of externalizing or internalizing behaviors.

Lavigne & Ryan (1979), using the Louisville Behavior Checklist (a parent questionnaire about adjustment problems in their children), found age to be an important factor relating to the psychological adjustment of siblings of children with chronic illness or disabilities. However, a main effect for age was not seen. Rather, a more complex age by gender interaction was seen. Younger sisters scored higher or the same on measures of Inhibition, Social Withdrawal, Irritability, and Immaturity than did younger brothers. However, older sisters showed fewer or the same levels of adjustment problems than did older brothers. Finally, Grossman (1972), who interviewed and tested groups of college students about their years at home with a sibling who have a disability, found that younger siblings of children who have disabilities showed significantly lower coping skills than did older sisters.

In summary, typically developing siblings who are younger than their sibling who has a disability tend to score more highly on measures of internalizing behavior than do older typically developing siblings.

The Effect of Gender on Internalizing Behavior

Gender can also affect how a child reacts to a particular situation. Researchers have considered how brothers and sisters of children who have a disability manifest their adjustment. Siegel and Silverstein (1994), through observations gathered over many years of working with families with a child who has a developmental disability, found that sisters displayed more depression and anxiety symptoms than did brothers. Similarly, other researchers (Breslau, 1982; Farber, 1959) found that sisters may be overburdened with caretaking responsibilities and consequently may display more depression and anxiety as adults. Fowle (1968) measured the effect of having a child with mental retardation on the family, using the Farber Sibling Role Tension Index. Analysis revealed older sisters

appeared to suffer more role tension than did older brothers when the child who has a disability remained in the home. However, when the child who has a disability was removed from the home, older brothers scored higher on the role tension measure. Lobato, Barbour, Hall and Miller (1987) were interested in the psychosocial characteristics of those children who have a sibling with a disability and those without. No differences were found between the groups on measures of self-competence and acceptance, understanding of the disability, empathy, and care-taking responsibilities. However, brothers of handicapped siblings were rated as being more depressed than were those of non-handicapped siblings.

In summary, the research seems to reveal contradictory results regarding the impact of gender on the internalizing behavior of siblings who are typically developing. However, overall, sisters tend to display higher levels of internalizing behavior than brothers.

The Effect of Birth Order on Externalizing Behavior

Many researchers have found that age influences the externalizing behavior exhibited by siblings of children who have disabilities. Breslau, Weitzman, and Messenger (1981) completed a comprehensive study of siblings of children who had a range of handicapping conditions and compared them to children whose siblings were typically developing from a cross-section of Manhattan households in an already published study. Breslau and her colleagues, using the Psychiatric Screening Inventory (PSI) to measure psychological functioning, considered how gender and age of siblings who are typically developing might impact their level of functioning. Controlling for age, and looking only at birth order, younger brothers and older sisters of children who have disabilities were found to be more severely impaired with respect to their level of psychological functioning. They found that 27% of younger brothers were considered severely impaired (scoring 6 or above on subscales) compared to 6% of younger sisters; by contrast 23% of the older sisters were severely impaired compared to 13% of the older brothers. Breslau (1982) replicated these results.

Rodrigue, Geffken and Morgan (1993) used the Child Behavior Checklist as well as other measures to compare three groups of siblings, those with Autism, those with Down syndrome, and those who were typically developing. Results showed that older siblings of children with Autism showed more likelihood of having behavior problems of the externalizing type, whereas older siblings of children who were typically developing displayed higher levels of social competence. Grossman (1972) interviewed and tested groups of college students about their years at home with a sibling who has a disability. Overall adjustment levels of her subjects were based on the scores on four subscales of the Wechsler Adult Intelligence Scale, the Information Test (designed by Grossman for the study), and the Test Anxiety Questionnaire. She found that younger siblings of children who have disabilities showed significantly lower coping skills than did older children. The subjects in Grossman's study, however, were "almost unavoidably heavily biased toward those who had coped to some extent with the retardation" (pp. 176-177).

In a longitudinal study on the effects of having a child with a severe disability in the family, Breslau & Prabucki (1987) found that for siblings of children who have disabilities the youngest group (ages 6-9) showed the highest increases in Self-Destructive Tendencies measured using the Psychiatric Screening Inventory. Control subjects of the same age group did not display similar changes. In addition, the authors noted the disabled sibling group scored significantly higher initially than did controls on the subscales Conflict with Parents, Fighting, and Delinquency.

In summary, those siblings who are younger than their sibling who has a disability seem to have lower levels of psychological adjustment than do older siblings.

The Effects of Gender on Externalizing Behavior

Many researchers have considered the effects of gender on externalizing behaviors. Breslau (1982), for example, was interested in how birth order and age spacing may affect psychological adjustment of siblings of children who have disabilities; however, gender was also considered in the data analysis. A significant main effect for gender was found for the

Aggressive Behavior subscale of the Psychiatric Screening Inventory (PSI). Overall, Breslau found brothers of children who have a disability were at highest risk for psychological impairment. Lobato, Barbour, Hall and Miller (1987) were interested in the psychosocial characteristics of those children who had a sibling who had a disability and those without. Using a videotaped behavior analysis of nine coded behaviors, they found that sisters of children who had a disability were rated as more aggressive than were sisters of children who did not have a disability. Also, mothers of children with a disability rated their typically developing sons as both more aggressive and more depressed than did mothers of children whose sibling did not have a disability. The authors reported significantly higher levels of externalizing behaviors in siblings of children who had a disability than in siblings of children who were not disabled.

Lavigne and Ryan (1979) also studied the psychological adjustment of siblings of children with chronic illness using the Louisville Behavior Checklist (LBCL). They found that on scales measuring hyperactivity, total aggression, and irritability, boys who had chronically ill siblings scored higher than did girls. No group differences were found in aggression or learning problems. Gath (1974) conducted a within-sample comparison of siblings of children with Down syndrome using a behavioral questionnaire developed by Rutter, Tizard, and Whitmore (1970). She found that brothers had more behavior problems overall than did sisters, but that older sisters appeared to be more vulnerable to stress due possibly to “carrying more than their fair share of community care” (p.197). Gath also stated that disturbance in the brothers was not significantly higher in controls, but disturbance in sisters was more frequent than found in controls. Siegel and Silverstein (1994), through observations gathered over many years of working with families with a child who has a developmental disability, found that brothers expressed negative feelings by acting out and aggression, whereas sisters displayed more depression and anxiety. Finally, other researchers (Farber, 1959; Fowle, 1968), found that brothers are more at risk for

behavioral problems whereas sisters may be overburdened with caretaking responsibilities and consequently display more depression and anxiety as adults.

In summary, it appears that brothers of a sibling who has a disability display more externalizing behaviors and are considered to have a higher risk for psychological impairment. It also appears that researchers have found that sisters tend to score higher on measures of internalizing behaviors than do brothers .

Developmental Disability

“Developmental disability” is a broad term, conveying meanings that differ from occasion to occasion. The term “developmental disabilities” was first described in 1970 in the Developmental Disabilities Services and Facilities Construction Amendments (Public Law 91-517) (Baroff, 1990). Public Law 91-517 brought under one large heading three disorders: mental retardation, cerebral palsy, and epilepsy. Also included in Public Law 91-517 were all other disorders that produce symptoms similar to those of the main three, the intention being to group people with similar symptoms together in order to improve the quality of the services offered to them (Baroff, 1990). Many have argued, however, that disorders that did not have the same characteristics as the previously included disorders should also be considered as developmental disabilities (Kiernan, 1979; Summers, 1981); consequently, autism and dyslexia were added to the definition by Congress in 1975 (Public Law 94-103).

The most recent definition of “developmental disability” for children under the age of three (infants and toddlers), can be found in the Individuals with Disabilities Education Act of 1997 which states:

An Infant or Toddler with a Disability means an individual under 3 years who needs early intervention services because the individual
(i) is experiencing developmental delays, as measured by appropriate diagnostic instruments and procedures, in one or more of the areas of

cognitive development, physical development, communication development, social or emotional development, and adaptive development or (ii) has a diagnosed physical or mental condition which has a high probability of resulting in developmental delay and (iii) at State's discretion, may include infants and toddlers at risk for developmental delays. (Individuals with Disabilities Education Act Amendments of 1997, sect. 632)

For children three years and older, the following definition applies:

A Child with a Disability means a child "with mental retardation, hearing impairment, speech or language impairments, visual impairments, serious emotional disturbance, orthopedic impairments, autism, traumatic brain injury, other health impairments or specific learning disabilities" . . . and "who, by reason thereof, needs special education and related services"

(Individuals with Disabilities Education Act Amendments of 1997, sect. 602.

I am using these definitions of "Developmental Disability" in this thesis identifying developmentally delayed siblings as "Children who have a Disability." Those children in the present study who do not have a developmental disability are identified as "Typically Developing."

Externalizing Behavior

Externalizing behaviors are generally considered to be those behaviors that are "out of control" or "outer-directed," including hyperactivity, aggression (toward people and objects), disobedience, yelling, temper tantrums, and social acting out (McMahon & Forehand, 1988; Reynolds, 1992). In contrast, internalizing behaviors are those behaviors that affect the individual personally including anxiousness, fearfulness, depression, and so on (Nelson & Israel, 1991).

Children exhibit externalizing behaviors for many reasons. Two factors that have been implicated in children's development of externalizing behaviors are stress (e.g., having

a divorced parent) and gender (e.g., males exhibit more externalizing behavior in general than do females).

Researchers are finding that there are many more stressors in a child's life than was recognized several years ago. More children live in single-parent homes, have parents who are divorced, live in foster homes, or are homeless than ever before (Alper, Schloss & Schloss, 1994). Additionally, children are being exposed to increasing levels of abuse and neglect. All of these situations are considered stress provoking. Researchers have shown that children respond to these situations by exhibiting more externalizing behavior. Patterson (1983) for example, in a microsocial analysis of aggression, found that a crisis such as divorce is likely to lead to conduct-disorder behaviors in the child because of the disturbance in the parent-child interaction. Other researchers agreed that children of divorced parents exhibited more behavior problems (Emery, 1982; Hetherington & Camara, 1984) and frequently responded to situations with more aggressive, antisocial, and noncompliant behaviors (Guidubaldi & Perry, 1985; Hetherington, Cox & Cox, 1982; Zaslow, 1988). Family violence has also been linked to demonstrations of externalizing behavior. Jaffe, Wolfe, Wilson, and Zak (1986), in a study of children living in a women's shelter who had experienced family violence, reported that boys demonstrated high levels of externalizing behavior as well as internalizing behavior. Those children who witnessed marital violence also exhibited a high frequency of externalizing behavior (Hershorn & Rosenbaum, 1985; Jaffe et al., 1986; Levine, 1975; Pfouts, Schopler, & Henley, 1982; Porter & O'Leary, 1980; Wolfe, Jaffe, Wilson, & Zak, 1985). Rutter (1970), demonstrated that parental marital relationships were negatively correlated to boys' antisocial disorder. The worse the marriage was rated (amount of arguing, criticism, and hostility), the higher the level of "antisocial" or "total deviant" behavior by boys. Girls in his study did not show this same relationship to the marital rating. Their levels of antisocial or deviant behavior appeared to be independent of the ratings.

Recent research, however, has shown that there is a positive correlation between marital violence and parent-child aggression (Jouriles, Barling & O'Leary, 1987; Straus, Gelles, & Steinmetz, 1980; O'Keefe, 1994). Hence, reports that witnessing marital violence may lead to displaying externalizing behavior may be incomplete, and some externalizing behaviors may in fact be due to parent-child aggression instead (O'Keefe, 1994).

Whereas research has demonstrated that externalizing behavior may result from stressful life events, research has also shown that the gender of the child in question plays a role in the exhibition of the externalizing behavior. In a study of gender differences in children's development from infancy to age eight, Prior, Smart, Sanson, and Oberklaid (1993) determined that boys were more likely to show behavior problems of the hyperactive and aggressive type than were girls, as reported by mothers. In a study of peer ratings of aggression, Serbin, Marchessault, McAffer, Peters, and Schwartzman (1993) found that distinct behavior patterns were recognized for the concepts of aggression and withdrawal in girls' behavior, but less distinct patterns were recognized for boys' behavior. Boys' behavior tended to be rated on a continuum of playground measures such as how "passive" or "rough and tumble" they were as compared to other boys. The authors suggested this result may be explained by the fact that boys had a very high frequency of playful aggression that seemed to be a part of their social environment, and is considered "normal" play. In addition, the authors noted that the most aggressive behaviors in girls were, overall, lower than the typical amount of aggression seen in boys.

Many studies and reviews (Eagly & Steffen, 1986; Hyde, 1984; Maccoby & Jacklin, 1974; Omark, Omark & Edelman, 1975; Terman & Tyler, 1954; Whiting & Edwards, 1973) have concluded that males are more aggressive than are females. Bjorkqvist and Niemela (1992), however, suggest that this conclusion is biased by the "male" perspective, that research has considered primarily male forms of aggression. Additionally, they argue that cultural and social pressures affect female aggression levels but have not

taken into consideration methodologically. However, it is generally accepted that males exhibit more externalizing behaviors than females.

The Present Study

I have reported that many researchers agreed that the presence of a disabled child in the family is stressful in many ways such as financially and emotionally (Breslau & Prabucki, 1987; Bischoff & Tingstrom, 1991; Dunn, 1988; Ferrari, 1983; McKeever, 1983; Pless and Pinkerton, 1975). Many researchers also agreed that the stress felt by children who are typically developing in the family may be manifested as externalizing behavior (Baskett & Johnson, 1982; Breslau & Prabucki, 1987; Breslau, Weitzman, & Messenger, 1981; Gath, 1974; Rodrigue, Geffken & Morgan, 1993; Wood, Boyle, Watkins, Nogueira, Zimand & Carroll, 1988). This is not to say, however, that only externalizing behaviors are exhibited by the typically developing siblings in a family. Other behaviors can be seen as well, such as internalizing behaviors, social withdrawal, depression (Hannah & Midlarsky, 1987; Lavigne & Ryan, 1979; Lobato, Barbour, Hall & Miller, 1987), fear and loneliness (Bagenholm & Gillberg, 1991; Steiner, 1984), and even maturity and tolerance (Cleveland & Miller, 1977; Grossman, 1972).

Researchers have shown that siblings of children who have disabilities exhibit higher levels of externalizing behavior than do siblings of children who do not have disabilities. In addition, brothers of children with a disability demonstrated higher levels of externalizing behavior than did sisters. The purpose of the present study is three-fold: one, to determine if there is a difference in psychological functioning based on whether or not a child has a sibling with a disability; two, to determine if brothers exhibit higher levels of externalizing behavior than do sisters of children who have disabilities; and three, to determine if brothers who have a sibling with a disability exhibit higher levels of externalizing behavior than do sisters of children who have disabilities and both brothers and sisters of children who are typically developing.

CHAPTER 2

METHODS

Subjects

This study identified four groups of children: Children who have a Disability, Children who are Typically Developing, Siblings of Children who have Disabilities, and Siblings of Children who are Typically Developing (See Table 1). Initially, all subjects were to be recruited from an early intervention clinic in Las Vegas. Due to the lack of subjects, however, the recruitment places were expanded to include the University of Nevada, Las Vegas, day care center, a support group in the community, and a private preschool in Las Vegas.

The Children who have a Disability group ($n=14$), were recruited from two places: an early childhood intervention clinic in Las Vegas ($n=1$), and a support group in the community ($n=13$). The early intervention clinic, federally funded and free to all eligible patrons, specializes in treating children from birth to three years old who are either born prematurely and are at risk for developmental delays, or are referred by a physician, a social worker, or parents for suspected delays. The participants in this study were screened by the staff at the clinic. Eligibility for inclusion at the early intervention clinic as a Child who has a Disability was determined using the following four factors: A) The child being tested at the clinic was between the ages of 1 and 42 months; B) The child scored at least one and one-half standard deviations below normal on either the Mental Development Index or Psychomotor Development Index of the Bayley Infant Scales of Development; C) The child had a sibling who was between the ages of four and eighteen; and D) The sibling spent the

majority of his or her time living in the same household as the child with the developmental disability.

Table 1

Number of Subjects by Age, Group, and Gender

Group	Age												
	0-3 yrs.		4-7 yrs.		8-11 yrs.		12-15 yrs.		16-18 yrs.		Total	Mean	
	Gender									All	M	F	
M	F	M	F	M	F	M	F	M	F				
Children who have a Disability	1	3	3	1	2	1	2	1	0	0	14	8.1	6.3
Siblings of Children who have Disabilities	0	0	5	2	2	0	1	3	1	0	14	8.4	10.4
Children who are Typically Developing	2	8	1	2	0	1	2	0	0	0	16	2.6	6.1
Siblings of Children who are Typically Developing	0	0	4	4	2	4	1	1	0	0	16	7.7	6.7
Total	3	11	13	9	6	6	6	5	1	0	60	6.7	7.4

The support group was a non-profit agency available as a resource to parents of children who have a disability. Eligibility for inclusion at the support group as a Child who has a Disability was determined using the following factors: A) The parents had a child with a known and diagnosed disability; B) The child had a sibling who was between the ages of four and eighteen; and C) The sibling spent the majority of his or her time living in the same household as the child with the disability.

The Children who are Typically Developing ($n=16$) were recruited from three places: an early intervention clinic in Las Vegas ($n=7$), the University of Nevada, Las Vegas, day care center ($n=1$), and a private preschool in Las Vegas ($n=8$). Eligibility for inclusion at the early intervention clinic as a Child who is Typically Developing was determined using the following factors: A) The children were all between the ages of birth to three years; B) The children did not score one and one-half standard deviations below normal on the BISC-II; C) The children had a sibling who was between the ages of four and eighteen years; D) The siblings spent the majority of his or her time living in the same household as the Child who was Typically Developing.

Eligibility for inclusion at the University day care and the private preschool as a Child who is Typically Developing was determined using the following factors: A) The child was between the ages of birth to eighteen years; B) The child was known to be typically developing; C) The child had a sibling who was between the ages of four to eighteen years; D) The siblings spent the majority of their time living in the same household as the Child who was Typically Developing.

The Siblings of children who have disabilities ($n=14$) were recruited at the early intervention clinic ($n=1$) and the parent support group ($n=13$). Eligibility for inclusion was determined using the following factors: A) The child has a sibling who had been assigned to the Children with a Disability; B) The child was between the ages of four to eighteen years; C) The sibling was closest in age to the Child who has a Disability; D) The sibling spent the majority of his or her time living in the same household as the Child who has a Disability.

Siblings of Children who are Typically Developing ($n=16$) were recruited at the early intervention clinic ($n=7$), the University day care ($n=1$), and the private preschool ($n=8$). Eligibility for inclusion as a Sibling of Children who are Typically Developing was determined using the following factors: A) The child had a sibling who had been assigned to the Children who are Typically Developing group; B) The Sibling was between the ages

of four to eighteen years; C) The Sibling was closest in age to the Typically Developing child; D) The sibling spent the majority of his or her time living in the same household as the Child who was Typically Developing.

Measures

Bayley Infant Scales of Development-II (BISD-II)

The BISD-II (Bayley, 1969) is an assessment device that determines levels of early cognitive and motor development. The BISD-II assesses children from ages 1 to 42 months and is divided into two scales, the Mental Development Scale and the Psychomotor Development Scale. The two scales are graduated in difficulty according to age level, and reduce to a Mental Developmental Index (MDI) and Psychomotor Developmental Index (PDI) standard score, respectively. Both the MDI and PDI have a mean of 100 and a standard deviation of 15. The manual for the BISD-II contains a breakdown of the standard scores to classify the child's performance. These suggested delineations are A) accelerated performance (115 and above), B) within normal limits (85-114), C) mildly delayed performance (70-84), D) significantly delayed performance (69 and below). The BISD-II is a standardized test that should be administered within a clinical realm. Consequently, the early intervention clinic where initial subjects were recruited was the only agency to utilize the BISD-II. For all other recruitment agencies (support group, daycare, preschool) parental statements of a known disability were accepted without testing.

Child Behavior Checklist (CBCL)

The Child Behavior Checklist (Achenbach, 1978) is a questionnaire that asks parents to report the behaviors of their children (ages 4 to 18 years). The CBCL lists 118 statements that concern behavioral / emotional problems (Achenbach, 1991). Parents circle one of three ratings that they feel most accurately describe their child's behavior with regard to the specific item: 0-Not true, 1- Somewhat or Sometimes true, 2- Very True or Often true. It also contains 20 items that inquire about the competence of the child in social and school situations. Parents answer these 20 items by writing in the spaces provided on the form.

For the purposes of this study, only the results of the 118 behavioral / emotional items were used. The 118 items are separated into eight problem scales according to specific behavior type. Raw scores are calculated by summing the ratings of the items that make up the problem scale and converting them to T-scores. The Externalizing Behaviors Total Score is comprised of the scores the child receives on the seventh and eighth scales, "Aggressive" and "Delinquent." Raw scores for the Externalizing Scale are summed and converted to T-scores calculated for the Externalizing scale. The clinical range is designated as above a T-score of 70, whereas the borderline range is between 67 and 70 T-score points.

Procedures

Data Collection

Data collection varied depending upon the manner in which the subjects were recruited: From the early intervention clinic, the University day care center, the private preschool, or the support group.

At the early intervention clinic, the staff administered the Bayley Infant Scales of Development-II to children between the ages of birth and 36 months. Those children who scored in the "mildly" or "significantly" delayed range (that is, who scored 84 or below on either the Mental Developmental Index or the Psychomotor Developmental Index), were candidates for inclusion in the "Children with a Disability" group. Those children who scored 85 or higher on the MDI or PDI were candidates for inclusion in the "Children who are Typically Developing" group. Staff ascertained whether all these candidates had siblings who were between the ages of 4 and 18, and with whom they lived. If they met the criteria, the staff asked the parents to participate in this study. The parents were given a consent form that explained the present study and stressed confidentiality. If consent was obtained, the tested child became a member of the appropriate group (Children who have a Disability or Children who are Typically Developing), and the closest-in-age sibling became a member of the appropriate sibling group. The staff then explained the CBCL to the parents, gave a stamped, self-addressed envelope to them, to complete on the child who was

closest in age to the tested child. A Spanish version of the CBCL, which has similar reliability and validity to the English version, was available for those clients who spoke Spanish but not English. An identification system was devised that enabled the researcher to obtain the child's demographic information (age, gender, number of siblings in the family) without jeopardizing the client's confidentiality. No compensation was given to the participants.

The families from the support group were recruited by one of two ways. Initially, the present study was described at the monthly meetings of the support group. Secondly, an announcement of the present study was published in the newsletter of the organization. Parents who were interested in participating contacted the support group personnel and were then contacted by the researcher. The subjects recruited from the University daycare center and the private preschool were volunteers responding to a notice posted in the day care center. The notice asked for families who had more than one child, and one of the children was between the ages of 4 and 18. If interested, the families were asked to phone the researcher at the provided phone number. Parents who made contact with the researcher were mailed a packet containing a consent form, the CBCL, and a self-addressed stamped envelope. Detailed instructions that described on whom to complete the questionnaire and how were also included. Although the Spanish version was available, none were sought by these families. No compensation was offered for these participants.

As the examiner received the CBCL forms, they were carefully checked to identify any missing information and ensure the form was completed correctly. Three forms were returned that were not complete or were completed incorrectly and were not included in the study. The CBCL forms were scored by hand by the researcher.

CHAPTER 3

RESULTS

The first purpose of this study was to determine whether Siblings of Children who have Disabilities have higher levels of externalizing behavior than do Siblings of Children who are Typically Developing, as measured through parental report on the Child Behavior Checklist (See Table 2).

Table 2

Means and Standard Deviations of CBCL T-Scores

	<u>Brothers</u>			<u>Sisters</u>			<u>All</u>		
	<u>n</u>	<u>M</u>	(SD)	<u>n</u>	<u>M</u>	(SD)	<u>n</u>	<u>M</u>	(SD)
Siblings of Children who have Disabilities	9	53.44	(7.92)	7	49.80	(18.12)	16	52.14	(11.95)
Siblings of Children who are Typically Developing	5	59.14	(7.95)	9	56.44	(11.36)	14	57.62	(9.79)
All	14	55.93	(8.2)	16	54.07	(13.83)	30	55.07	(11.02)

A two-way factorial Analysis of Variance was conducted on the CBCL T-scores. There were no statistically significant differences in psychological functioning between groups of children based on whether or not they had a sibling with a disability $F(1, 26) = 2.73, p < .05$.

The second purpose was to determine if brothers exhibit higher levels of externalizing behavior than do sisters of Children who have Disabilities. T-scores, not raw data, were used to make the comparisons. These T-scores reflect each subject's deviation from the mean of his/her normative group of the CBCL. There were no statistically significant differences in CBCL scores between brothers of Siblings who have Disabilities and sisters of Siblings who have Disabilities $F(1, 26) = 0.574, p < .05$. Therefore, the boys scored no higher, according to the established male norms, and girls scored no more highly according to established female norms.

The third purpose was to determine if brothers of Children who have Disabilities exhibit higher levels of externalizing behavior than do sisters of Children who have Disabilities and both sisters and brothers of Children who are Typically Developing. This was measured by considering the interaction between gender and status of sibling disability, using the CBCL T-scores. There was no statistically significant interaction between these variables $F(1, 26) = .013, p < .05$.

Seven of the children included in the Children who are Typically Developing group were recruited from the early intervention clinic. These children could possibly have been placed in the Children who have Disabilities group depending on their score on the BISD-II. To clarify that all of these children did score within the normal range, the mean and standard deviation of these scores is presented here: $X = 96; S. D. = 5.598$. The mean falls well within the cutoff of 85 for inclusion in the Children who are Typically Developing Group.

CHAPTER 4

DISCUSSION

The present study was designed to examine whether the amount of externalizing behavior displayed by children who have siblings with disabilities is different from those who do not; and whether the level of externalizing behavior differed between brothers and sisters of children with disabilities. The results revealed no significant differences on a measure of psychological functioning between either the sibling groups or the gender groups. In fact, the results of the differences between the sibling groups did not tend in the direction predicted: Siblings of Children who have Disabilities did not display higher levels of externalizing behavior than did Siblings of Children who are Typically Developing.

Whereas the findings of this study do not support the three hypotheses, this research does support findings by Breslau (1982) and Lavigne and Ryan (1979) who concluded that siblings of children with disabilities are at no greater risk for psychological impairment than are siblings of a child who is not disabled. Lobato (1990) concluded that siblings of children with disabilities are not unaffected by their situation, but they do not manifest more personality or behavior disorders than do their peers who do not have a sibling who has a disability. Our study concurred.

The present study did not address other personality traits that could be measures of the level of adjustment by the siblings of children who have disabilities. These personality traits could include nurturing behavior, reactions to stressful situations, or displays of positive and negative emotions. A parental questionnaire about the general personality of their child could have been helpful in determining if any less obvious behavioral characteristics were evident in their children. In addition, most of the families who

completed the questionnaires were recruited from organizations specializing in children who have disabilities. The basis of the first hypothesis was the idea that siblings of children who have disabilities would display higher levels of externalizing behavior as a means of acquiring more parental attention through negative behavior. In addition, it was felt that many parents might not have the energy or the patience to deal with their other children when faced with the stress of the care of their child who has a disability.

The parents in this study seemed particularly informed and involved in the well being and development of their children who have disabilities, based on their involvement with parent organizations, and may have been aware of the research that is available regarding siblings of children who have disabilities. Some organizations already have sibling groups as a regular part of their program. An addition to this study could have been questions for the parents about their understanding of the reactions their children who are typically developing might have to their sibling with a disability. Also, there may have been some reporting bias since the only data collected was subjective, based on the parent's experience. Depending on the behavior of the child for the most recent time period before completing the questionnaire, the behavior reported may have been more positive or negative than generally seen.

Although the results for this study were not found to be statistically significant, enough research has been conducted in the field of sibling adjustment that should demonstrate it is an important topic to continue to study. Early intervention for children with disabilities or delays is becoming a highly accepted and expected practice in this country and in countries around the world. Sibling groups, as well as parent education groups, will hopefully grow with the same regard to preventing possible difficulties for all children in the future.

REFERENCES

Access to Respite Care and Help. (1993, May). Siblings of children with special health and developmental needs (Factsheet No. 23). Chapel Hill, NC: ARCH National Resource Center Coordinating Office.

Achenbach, T. M. (1978). The child behavior profile: I. boys aged 6-11. Journal of Consulting and Clinical Psychology, 46, 478-488.

Achenbach, T. M. (1991). Manual for the child behavior checklist/4-18 and 1991 profile. Burlington, VT.: University of Vermont Department of Psychiatry.

Alper, S. K., Schloss, P. J., & Schloss, C. N. (1994). Families of students with disabilities: Consulting and advocacy. Boston, MA.: Allyn and Bacon.

Arc, National Organization on Mental Retardation. (1993, January). Siblings: Brothers and sisters of people who have mental retardation (Q & A). Arlington, TX.: The ARC.

Bagenholm, A., & Gillberg, C. (1991). Psychosocial effects on siblings of children with autism and mental retardation: a population-based study. Journal of Mental Deficiency Research, 35, 291-307.

Baroff, G. S. (1990). Developmental disabilities: Psychosocial effects. Austin, TX.: Pro-Ed.

Baskett, L. M., & Johnson, S. M. (1982). The young child's interactions with parents vs. siblings: A behavioral analysis. Child Development, 53 (3), 643-650.

Bayley, N. (1969). Bayley scales of infant development: Birth to two years. New York: Psychological Corporation.

Bischoff, L. G., & Tingstrom, D. H. (1991). Typically developing siblings of children with a disability: Psychological and behavioural characteristics. [Special issue]. Counselling Psychology Quarterly, 4 (4), 311-321.

Bjorkqvist, K., & Niemela, P. (Eds.). (1992). Of mice and women: Aspects of female aggression. San Diego, CA.: Academic Press, Incorporated.

Breslau, N., Weitzman, M., & Messenger, K. (1981). Psychologic functioning of typically developing siblings of children with a disability. Pediatrics, 67 (3), 344-353.

Breslau, N. (1982). Typically developing siblings of children with a disability: Birth order and age-spacing effects. Journal of Abnormal Child Psychology, 10 (1), 85-96.

Breslau, N. & Prabucki, K. (1987). Typically developing siblings of children with a disability. Archives of General Psychiatry, 44, 1040-1046.

Brody, G. H., & Stoneman, L. (1986). Contextual issues in the study of sibling socialization. In J. J. Gallagher & P. M. Vietze (Eds.), Families of handicapped persons: Research, programs and policy issues (pp. 197-217). Baltimore, MD.: Paul H. Brookes, Publishing Company.

Cleveland, D. W., & Miller, N. (1977). Attitudes and life commitments of older siblings of mentally retarded adults: An exploratory study. Mental Retardation, 15, 38-41.

Dunn, J. (1985). Sisters and Brothers. Cambridge, MA.: Harvard University Press.

Dunn, J. (1988). Annotation: Sibling influences on childhood development. Journal of Child Psychology and Psychiatry, 29 (2), 119-127.

Dyson, L. L., (1991). Families of young children with handicaps. Parental stress and family functioning. American Journal on Mental Retardation, 95, 623-629.

Eagly, A. H., & Steffen, V. J. (1986). Gender and aggressive behavior. A meta-analytic review of the social psychological literature. Psychological Bulletin, 100, 309-330.

Emery, R. (1982). Interparental conflict and the children of discord and divorce. Psychological Bulletin, 92, 310-330.

Farber, B. (1959). Effects of a severely mentally retarded child on family integration. Monographs of the Society for Research in Child Development, 24, (2, Serial No. 71).

Farber, B. (1960). Effects of a severely mentally retarded child on family integration. Monographs of the Society for Research in Child Development, 21 (1, Serial No. 75).

Farber, B. (1964). Family: Organization and interaction. San Francisco, CA.: Chandler.

Ferrari, M. (1984). Chronic illness: Psychosocial effects on siblings: I. Chronically ill boys. Journal of Child Psychology and Psychiatry, 25 (3), 459-476.

Fowle, C. (1968). The effect of the severely mentally retarded child on the family. American Journal of Mental Defficiency, 73, 68-73.

Gath, A. (1974). Siblings reactions to mental handicap: A comparison of the brothers and sisters of mongol children. Journal of Child Psychology and Psychiatry and Allied Disciplines, 15, 187-198.

Grossman, F. K. (1972). Brothers and Sisters of Retarded Children. Syracuse, NY.: Syracuse University Press.

Guidubaldi, J., & Perry, J. D. (1985). Divorce and mental health sequelae for children: A two-year follow up of a nationwide sample. Journal of the American Academy of Child Psychiatry, 24, 531-537.

Hannah, M. E., & Midlarsky, E. (1987). Siblings of the handicapped: Maladjustment and its prevention. Techniques, 3 (3), 188-195.

Hershorn, M., & Rosenbaum, A. (1985). Children of marital violence: A closer look at the unintended victims. American Journal of Orthopsychiatry, 55 (2), 260-266.

Hetherington, E. M., & Camara, K. A., (1984). Families in transition: The process of dissolution and reconstitution. In R. P. Parke (Ed.), Review of child development research: The family, vol. 7. (pp. 398-439). Chicago, I. L.: University of Chicago Press.

Hetherington, E. M., Cox, M., & Cox, R. (1982). Effects of divorce on parents and children. In M. E. Lamb (Ed.), Nontraditional families: Parenting and child development. (pp. 233-288). Hillsdale, N. J.: Erlbaum.

Hyde, J. S. (1984). How large are gender differences in aggression? A developmental meta-analysis. Developmental Psychology, 20, 722-736.

Jaffe, P., Wolfe, D., Wilson, S. K., & Zak, L. (1986). Family violence and child adjustment: A comparative analysis of girls' and boys' behavioral symptoms. American Journal of Psychiatry, 143 (1), 74-77.

Jouriles, E., Barling, J., & O'Leary, K. D. (1987). Predicting child behavior problems in maritally violent families. Journal of Abnormal Child Psychology, 15, 165-173.

Kiernan, W. (1979). Rehabilitation planning. In R. R. Magrab and J. O. elder (Eds.), Planning services to handicapped persons: Community, education, health. (pp. 137-172). Baltimore, MD.: Paul H. Brookes.

Lavigne, J. V., & Ryan, M. (1979). Psychologic adjustment of siblings of children with chronic illness. Pediatrics, 63, 616-627.

Levine, M. (1975). Interparental violence and its effect on the children: A study of 50 families in general practice. Medical Science, 15, 172-176.

Lindsey, J. D., & Stewart, D. A. (1989). The guardian minority: Siblings of children with mental retardation. Education and Training in Mental Retardation, 24, 291-296.

Lobato, D. (1983). Siblings of handicapped children: A review. Journal of Autism and Developmental Disorders, 13 (4), 347-364.

Lobato, D. (1985). Preschool siblings of handicapped children: Impact of peer support and training. Journal of Autism and Developmental Disorders, 9, 287-296.

Lobato, D. J. (1990). Brothers, sisters and special needs: Information and activities for helping young siblings of children with chronic illnesses and developmental disabilities. Baltimore, MD.: Paul H. Brookes Publishing Co.

Lobato, D., Barbour, L., Hall, L. J., & Miller, C. T. (1987). Psychosocial characteristics of preschool siblings of handicapped and non handicapped children. Journal of Abnormal Child Psychology, 15 (3), 329-338.

Lobato, D., Faust, D., & Spirito, A. (1988). Examining the effects of chronic disease and disability on children's sibling relationships. Journal of Pediatric Psychology, 13 (3), 389-407.

Lobato, D. J., Miller, C. T., Barbour, L., Hall, L. J., & Pezzullo, J. (1991). Preschool siblings of handicapped children: Interactions with mothers, brothers, and sisters. Research in Developmental Disabilities, 12, 387-399.

Mc Andrew, J. (1976). Children with a handicap and their families. Child: Care, Health and Development, 2, 213-232.

Mc Keever, P. (1983). Siblings of chronically ill children: A literature review with implications for research and practice. American Journal of Orthopsychiatry, 53 (2), 209-218.

Mc Mahon, r. J., & Forehand, R. (1988). Conduct disorders. In E. J. Mash & L. G. Terdal (Eds.), Behavioral assessment of childhood disorders (2nd Ed.) (pp. 105-156). New York, NY.: The Guilford Press.

Maccoby, E. E., & Jacklin, C. N. (1974). The psychology of sex differences. Stanford, CA.: Stanford University Press.

Marcenko, M. O., & Smith, L. K. (1992). The impact of a family-centered case management approach. Social Work in Health Care, 17 (1), 87-100.

Morgan, S. (1988). The autistic child and family functioning: A developmental-family systems perspective. Journal of Autism and Developmental Disorders, 18 (2), 263-280.

Murphy, L., & DellaCorte, S. (1989, Jan/Feb). Siblings. Special Children, Special Parents, 5, 2-3.

O'Keefe, M. (1994). Linking marital violence, mother-child / father-child aggression, and child behavior problems. Journal of Family Violence, 9 (1), 63-78.

Omark, D. R., Omark, M., & Edelman, M. (1975). Dominance hierarchies in young children. Social Sciences Information, 12 (1), 103-110.

Patterson, G. R. Stress: A change agent for family process (1983). In N. Garnezy, & M. Rutter (Eds.), In stress, coping and development in children (pp. 235-264). New York, NY.: McGraw Hill Book Company.

Pfouts, J. H., Schopler, J. H., & Henely, H. C., (1982). Forgotten victims of family violence. Social Work, 27 (4), 367-368.

Pless, I. B. & Pinkerton, P. (1975). Chronic childhood disorder: Promoting patterns of adjustment. London, England: Kimpton.

Porter, B., & O'Leary, K. D. (1980). Marital discord and childhood behavior problems. Journal of Abnormal Child Psychology, 8 (3), 287-295.

Prior, M., Smart, D., Sanson, A., & Oberklaid, F. (1993). Sex differences in psychological adjustment from infancy to eight years. Journal of the American Academy of Child and Adolescent Psychiatry, 32 (2), 291-304.

Reynolds, W. M. (1992). The study of internalizing disorders in children and adolescents. In W. M. Reynolds (Ed), Internalizing Disorders in Children and Adolescents (pp. 1-18). New York, NY.: John Wiley & Sons, Inc.

Rodrigue, J. R., Geffken, G. R., & Morgan, S. B. (1993). Perceived competence and behavioral adjustment of siblings and children with autism. Journal of Autism and Developmental Disorders, 23 (4), 665-674.

Rutter, M., Tizard, J., and Whitmore, K. (Eds). 1970. Education, Health and Behavior. Longman, London.

Serbin, L. A., Marchessault, K., Mc Affer, V., Peters, P., &, A. E. (1993). Patterns of social behavior on the playground in 9- to 11 year-old girls and boys: Relation to teacher perceptions and to peer ratings of aggression, withdrawal, and likability. In Hart, C. H. (Ed.), Children on Playgrounds: Research Perspectives and Applications (pp. 162-183).

Siegel, B., & Silverstein, S. (1994). What about me? Growing up with a sibling with a disability. New York, NY.: Plenum Press.

Simeonsson, R. J., & Mc Hale, S. M. (1981). Review: Research on handicapped children: Sibling relationships. Child: Care, Health and Development, 7, 153-171.

Steiner, P. (1984). The well child and the hospitalized sibling with a disability. Journal of Psychosocial Nursing, 22 (3), 23-26.

Straus, M. A., Gelles, R. J., & Steinmetz, S. K. (1980). Behind closed doors: Violence in the American family. New York, NY.: Doubleday.

Summers, J. A. (1981). The definition of developmental disabilities: A concept in transition. Mental Retardation, 19(6), 259-265.

Terman, L. M., & Tyler, L. E. (1954). Psychological sex differences. In L. Carmichael (Ed.), Manual of Child Psychology, (pp.1064-1114). New York, NY.: Wiley.

Vadasy, P. F., Fewell, R. R., Meyer, D. J., & Schell, G. (1984). Siblings of handicapped children: A developmental perspective on family interactions. Family Relations, 33, 155-167.

Valdivieso, C., Ripley, S., & Ambler, L. (1988, No.11). Children with disabilities: Understanding sibling issues. NICHCY News Digest.

Wasserman, R. (1983). Identifying the counseling needs of the siblings of mentally retarded children. Personnel and Guidance Journal, 61 (10), 622-627.

Whiting, B., & Edwards, C. P. (1973). Cross-cultural analysis of sex differences in the behavior of children aged 3 to 11. Journal of Social Psychology, 91, 171-185.

Wicks-Nelson, R., & Israel, A. C. (1991). Behavior Disorders of Childhood. Englewood Cliffs, NJ.: Prentice Hall.

Wolfe, D., Jaffe, P., Wilson, S., & Zak, L. (1985) Children of battered women: the relation between child behavior, family violence and maternal stress. Journal of Consulting and Clinical Psychology, 53, 657-665.

Wood, B., Boyle, J. T., Watkins, J. B., Nogueira, J., Zimand, E., & Carroll, L. (1988). Sibling psychological status and style as related to the disease of their chronically ill brothers and sisters: Implications for models of biopsychosocial interaction. Journal of Developmental and Behavioral Pediatrics, 9 (2), 66-72.

Zaslow, M. J. (1989). Sex differences in children's response to parental divorce: 1. Research methodology and post divorce family forms. American Journal of Orthopsychiatry, 58, 355-378.

VITA

**Graduate College
University of Nevada, Las Vegas**

Tiffany Kara Kostelec

Local Address:

**1616 Palmae Way
Las Vegas, Nevada 89128**

Degrees:

**Bachelor of Science, Pre-Medicine, 1991
University of Nevada, Reno**

**Bachelor of Arts, Psychology, 1994
University of Nevada, Las Vegas**

**Master of Arts, Clinical Psychology, 2000
University of Nevada, Las Vegas**

Thesis Title: The Effect of Developmental Disabilities on the Externalizing Behavior of Siblings

Thesis Examination Committee:

**Chairperson, Dr. Russell Hurlburt, Ph. D.
Committee Member, Dr. Don Diener, Ph. D.
Committee Member, Dr. Christopher Heavey, Ph. D.
Graduate Faculty Representative, Dr. Thomas Pierce, Ph. D.**